

# Football Match Result Database Specification Document, v1.0.0

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## Abstract

The purpose of the Database is to collect match result data for football league competitions among either domestic clubs or national teams in order to facilitate football analytics research. This document describes the table-, field- and relationship-level specifications of the Football Match Result Database. These specifications include the table names, descriptions, and member fields and their descriptions and types. The primary and foreign keys of each table will be identified and the characteristics between related tables will be defined from the perspective of the primary table. View specifications are defined in order to provide context-specific information from multiple tables, establish data security and confidentiality, and implement data integrity.

## 1 Mission Statement

The purpose of the Football Match Result Database is to maintain the match result data needed to support football research activities for the benefit of the football analytics community.

## 2 Mission Objectives

The Football Match Result Database will support the following:

- Maintain data on matches that occur within football league competitions, whether among national teams or domestic clubs.
- Maintain complete top-level information on the football match, including match date, competition name and stage, participating teams, venues, and environmental conditions.
- Maintain complete information on macro-events that occur during a match, including goals, penalties, disciplinary incidents, and substitutions.
- Maintain complete information on participating personnel, such as players, managers, and match referees.

## 3 Business Rules

The following business rules shall be enforced on the Football Match Result Database:

- Starting player lists shall consist of exactly 11 players of which exactly one player is designated as the goalkeeper.
- A maximum of 18 players from one team will appear in a lineup list that corresponds to a match.
- A player can only be substituted one time during a match.
- Maximum substitution rules are enforced during a match.
- If a goalkeeper is expelled from a match, a new goalkeeper must be designated by either switching the positions of a field player or substituting a field player for a goalkeeper.
- A goalscorer or a recipient of a caution/expulsion card must be a player in the lineup who meets one of two criteria:
  - A starting player who has not yet been substituted; or
  - A player who has been substituted before the time of goal or disciplinary incident.

## 4 Match Overview Tables

The following tables capture high-level information on the football match, such as the competition, matchday, matchdate, league teams, and venues. The major tables in this section are the Match table, which links to personnel and match event tables, and the Environment table, which captures information on the climactic conditions under which the match was played.

#### 4.1 Match table (tblMatches)

<b>tblMatches</b>	High level information on the football match and its participants. The information in this table is required in order to track all matches played in a football competition as well as the teams, players, managers, and referees who participated in them.			
<b>Primary Key</b>	matchID			
<b>Foreign Key</b>	<b>Related Table</b>	<b>Deletion Rule</b>	<b>Participation Type</b>	<b>Participation Degree</b>
competitionID	tblCompetitions	—	Optional	(0,N)
roundID	tblRounds	—	Optional	(0,N)
venueID	tblVenues	—	Optional	(0,N)
refereeID	tblReferees	—	Optional	(0,N)
—	tblHomeTeams	Restrict	Mandatory	(1,1)
—	tblAwayTeams	Restrict	Mandatory	(1,1)
—	tblHomeManagers	Restrict	Mandatory	(1,1)
—	tblAwayManagers	Restrict	Mandatory	(1,1)
—	tblEnvironments	Restrict	Mandatory	(1,1)
—	tblLineups	Restrict	Mandatory	(1,1)

##### 4.1.1 matchID field

<i>Specification Type</i>	Unique
<i>Shared By</i>	tblEnvironments, tblLineups, tblHomeTeams, tblAwayTeams, tblHomeManagers, tblAwayManagers
<i>Description</i>	A unique number used to identify matches in a football competition.
<i>Data Type</i>	Numeric
<i>Character Support</i>	Numbers
<i>Length</i>	7
<i>Decimal Places</i>	0
<i>Input Mask</i>	#####
<i>Display Format</i>	0000000
<i>Key Type</i>	Primary
<i>Key Structure</i>	Simple
<i>Uniqueness</i>	Unique
<i>Null Support</i>	No Nulls
<i>Values Entered By</i>	System
<i>Required Value</i>	Yes
<i>Default Value</i>	—
<i>Range of Values</i>	1000000-9999999
<i>Edit Rule</i>	Enter Now, Edits Not Allowed
<i>Comparisons Allowed</i>	Equal To, Not Equal To
<i>Operations Allowed</i>	—

#### 4.1.2 matchDate field

<i>Specification Type</i>	Unique
<i>Shared By</i>	—
<i>Description</i>	The date on which the football match occurred, in ISO 8601 (YYYY-MM-DD) format.
<i>Data Type</i>	DateTime
<i>Character Support</i>	Numbers
<i>Length</i>	7
<i>Decimal Places</i>	0
<i>Input Mask</i>	YYYY-MM-DD
<i>Display Format</i>	Day Month Year
<i>Key Type</i>	Non-key
<i>Key Structure</i>	—
<i>Uniqueness</i>	Non-unique
<i>Null Support</i>	No Nulls
<i>Values Entered By</i>	User
<i>Required Value</i>	Yes
<i>Default Value</i>	—
<i>Range of Values</i>	—
<i>Edit Rule</i>	Enter Now, Edits Allowed
<i>Comparisons Allowed</i>	Equal, Not Equal, Greater Than, Less Than
<i>Operations Allowed</i>	Subtraction

#### 4.1.3 matchTime field

<i>Specification Type</i>	Unique
<i>Shared By</i>	—
<i>Description</i>	The total playing time of the football match (normal + stoppage time), in minutes. This field accounts for matches that had to be abandoned.
<i>Data Type</i>	Numeric
<i>Character Support</i>	Numbers
<i>Length</i>	3
<i>Decimal Places</i>	0
<i>Input Mask</i>	###
<i>Display Format</i>	000
<i>Key Type</i>	Non-key
<i>Key Structure</i>	—
<i>Uniqueness</i>	Non-unique
<i>Null Support</i>	No Nulls
<i>Values Entered By</i>	User
<i>Required Value</i>	Yes
<i>Default Value</i>	90
<i>Range of Values</i>	0 - 120
<i>Edit Rule</i>	Enter Now, Edits Allowed
<i>Comparisons Allowed</i>	Equal To, Not Equal To
<i>Operations Allowed</i>	Subtraction

#### 4.1.4 competitionID field

<i>Specification Type</i>	Replica
<i>Parent Table</i>	tblCompetitions
<i>Source Specification</i>	competitionID in tblCompetitions table
<i>Description</i>	The identification number of the football competition
<i>Data Type</i>	Numeric
<i>Character Support</i>	Numbers
<i>Length</i>	3
<i>Decimal Places</i>	0
<i>Input Mask</i>	###
<i>Display Format</i>	000
<i>Key Type</i>	Foreign
<i>Key Structure</i>	Simple
<i>Uniqueness</i>	Non-unique
<i>Null Support</i>	No Nulls
<i>Values Entered By</i>	User
<i>Required Value</i>	Yes
<i>Default Value</i>	—
<i>Range of Values</i>	Any existing competitionID value in tblCompetitions
<i>Edit Rule</i>	Enter Now, Edits Allowed
<i>Comparisons Allowed</i>	Equal, Not Equal
<i>Operations Allowed</i>	—

#### 4.1.5 roundID field

<i>Specification Type</i>	Replica
<i>Parent Table</i>	tblRounds
<i>Source Specification</i>	roundID in tblRounds table
<i>Description</i>	The identification number of matchday or phase of football competition
<i>Data Type</i>	Numeric
<i>Character Support</i>	Numbers
<i>Length</i>	3
<i>Decimal Places</i>	0
<i>Input Mask</i>	###
<i>Display Format</i>	000
<i>Key Type</i>	Foreign
<i>Key Structure</i>	Simple
<i>Uniqueness</i>	Non-unique
<i>Null Support</i>	No Nulls
<i>Values Entered By</i>	User
<i>Required Value</i>	Yes
<i>Default Value</i>	—
<i>Range of Values</i>	Any existing roundID value in tblRounds
<i>Edit Rule</i>	Enter Now, Edits Allowed
<i>Comparisons Allowed</i>	Equal, Not Equal
<i>Operations Allowed</i>	Subtraction



#### 4.1.6 venueID field

<i>Specification Type</i>	Replica
<i>Parent Table</i>	tblVenues
<i>Source Specification</i>	venueID in tblVenues table
<i>Description</i>	The identification number of the venue used in the football match
<i>Data Type</i>	Numeric
<i>Character Support</i>	Numbers
<i>Length</i>	4
<i>Decimal Places</i>	0
<i>Input Mask</i>	####
<i>Display Format</i>	0000
<i>Key Type</i>	Foreign
<i>Key Structure</i>	Simple
<i>Uniqueness</i>	Non-unique
<i>Null Support</i>	No Nulls
<i>Values Entered By</i>	User
<i>Required Value</i>	Yes
<i>Default Value</i>	—
<i>Range of Values</i>	Any existing venueID value in tblVenues
<i>Edit Rule</i>	Enter Now, Edits Allowed
<i>Comparisons Allowed</i>	Equal, Not Equal
<i>Operations Allowed</i>	—

#### 4.1.7 refereeID field

<i>Specification Type</i>	Replica
<i>Parent Table</i>	tblReferees
<i>Source Specification</i>	refereeID in tblReferees table
<i>Description</i>	The identification number of the referee officiating the football match
<i>Data Type</i>	Numeric
<i>Character Support</i>	Numbers
<i>Length</i>	4
<i>Decimal Places</i>	0
<i>Input Mask</i>	####
<i>Display Format</i>	0000
<i>Key Type</i>	Foreign
<i>Key Structure</i>	Simple
<i>Uniqueness</i>	Non-unique
<i>Null Support</i>	No Nulls
<i>Values Entered By</i>	User
<i>Required Value</i>	Yes
<i>Default Value</i>	—
<i>Range of Values</i>	Any existing refereeID value in tblReferees
<i>Edit Rule</i>	Enter Now, Edits Allowed
<i>Comparisons Allowed</i>	Equal, Not Equal
<i>Operations Allowed</i>	—

## 4.2 Competitions lookup table (tblCompetitions)

<b>tblCompetitions</b>	This table contains the names of the football competitions, and this information is used to track all matches played under a certain competition.			
<b>Primary Key</b>	competitionID			
<b>Foreign Key</b>	<b>Related Table</b>	<b>Deletion Rule</b>	<b>Participation Type</b>	<b>Participation Degree</b>
—	tblMatches	Restrict	Mandatory	(1,1)

### 4.2.1 compID field

<i>Specification Type</i>	Unique
<i>Shared By</i>	tblMatches
<i>Description</i>	A unique number used to differentiate football competitions.
<i>Data Type</i>	Numeric
<i>Character Support</i>	Numbers
<i>Length</i>	3
<i>Decimal Places</i>	0
<i>Input Mask</i>	###
<i>Display Format</i>	000
<i>Key Type</i>	Primary
<i>Key Structure</i>	Simple
<i>Uniqueness</i>	Unique
<i>Null Support</i>	No Nulls
<i>Values Entered By</i>	System
<i>Required Value</i>	Yes
<i>Default Value</i>	N/A
<i>Range of Values</i>	100-999
<i>Edit Rule</i>	Enter Now, Edits Not Allowed
<i>Comparisons Allowed</i>	Equal To, Not Equal To
<i>Operations Allowed</i>	—

#### 4.2.2 compName field

<i>Specification Type</i>	Unique
<i>Shared By</i>	—
<i>Description</i>	The name of the football competition.
<i>Data Type</i>	Character
<i>Character Support</i>	Letters, Numbers
<i>Length</i>	100
<i>Decimal Places</i>	—
<i>Input Mask</i>	—
<i>Display Format</i>	Each description should start with a capital letter.
<i>Key Type</i>	Non-key
<i>Key Structure</i>	—
<i>Uniqueness</i>	Non-unique
<i>Null Support</i>	No Nulls
<i>Values Entered By</i>	User
<i>Required Value</i>	Yes
<i>Default Value</i>	—
<i>Range of Values</i>	—
<i>Edit Rule</i>	Enter Now, Edits Not Allowed
<i>Comparisons Allowed</i>	Equal, Not Equal
<i>Operations Allowed</i>	—

#### 4.3 Competition Phase lookup table (tblRounds)

<b>tblRounds</b>	This table contains the names of the rounds of the football competition, and allows for tracking of matches and performances in a single round or multiple rounds. This table can be expanded for knockout or hybrid league/knockout competitions.			
<b>Primary Key</b>	roundID			
<b>Foreign Key</b>	<b>Related Table</b>	<b>Deletion Rule</b>	<b>Participation Type</b>	<b>Participation Degree</b>
—	tblRounds	Restrict	Mandatory	(1,1)

#### 4.3.1 roundID field

<i>Specification Type</i>	Unique
<i>Shared By</i>	tblMatches
<i>Description</i>	A unique number used to identify the matchday or phase of the football competition.
<i>Data Type</i>	Numeric
<i>Character Support</i>	Numbers
<i>Length</i>	2
<i>Decimal Places</i>	0
<i>Input Mask</i>	##
<i>Display Format</i>	00
<i>Key Type</i>	Primary
<i>Key Structure</i>	Simple
<i>Uniqueness</i>	Unique
<i>Null Support</i>	No Nulls
<i>Values Entered By</i>	System
<i>Required Value</i>	Yes
<i>Default Value</i>	N/A
<i>Range of Values</i>	10-99
<i>Edit Rule</i>	Enter Now, Edits Not Allowed
<i>Comparisons Allowed</i>	Equal, Not Equal
<i>Operations Allowed</i>	—

#### 4.3.2 roundDesc field

<i>Specification Type</i>	Unique
<i>Shared By</i>	—
<i>Description</i>	The matchday number or phase of the football competition.
<i>Data Type</i>	Character
<i>Character Support</i>	Letters, Numbers
<i>Length</i>	20
<i>Decimal Places</i>	—
<i>Input Mask</i>	—
<i>Display Format</i>	Each description should start with a number or capital letter.
<i>Key Type</i>	Non-key
<i>Key Structure</i>	—
<i>Uniqueness</i>	Non-unique
<i>Null Support</i>	No Nulls
<i>Values Entered By</i>	User
<i>Required Value</i>	Yes
<i>Default Value</i>	—
<i>Range of Values</i>	—
<i>Edit Rule</i>	Enter Now, Edits Not Allowed
<i>Comparisons Allowed</i>	—
<i>Operations Allowed</i>	—

#### 4.4 Teams lookup table (tblTeams)

<b>tblTeams</b>	This table contains the names of the clubs that participate in a football competition.			
<b>Primary Key</b>	teamID			
<b>Foreign Key</b>	<b>Related Table</b>	<b>Deletion Rule</b>	<b>Participation Type</b>	<b>Participation Degree</b>
—	tblHomeTeams	Restrict	Mandatory	(1,1)
—	tblAwayTeams	Restrict	Mandatory	(1,1)
—	tblGoals	Restrict	Mandatory	(1,1)

##### 4.4.1 teamID field

<i>Specification Type</i>	Unique
<i>Shared By</i>	tblMatches, tblVenues, tblPlayers, tblLineups, tblGoals
<i>Description</i>	A unique number used to identify football clubs.
<i>Data Type</i>	Numeric
<i>Character Support</i>	Numbers
<i>Length</i>	5
<i>Decimal Places</i>	0
<i>Input Mask</i>	#####
<i>Display Format</i>	00000
<i>Key Type</i>	Primary
<i>Key Structure</i>	Simple
<i>Uniqueness</i>	Unique
<i>Null Support</i>	No Nulls
<i>Values Entered By</i>	System
<i>Required Value</i>	Yes
<i>Default Value</i>	N/A
<i>Range of Values</i>	10000-99999
<i>Edit Rule</i>	Enter Now, Edits Not Allowed
<i>Comparisons Allowed</i>	Equal, Not Equal
<i>Operations Allowed</i>	—

#### 4.4.2 tmName field

<i>Specification Type</i>	Unique
<i>Shared By</i>	—
<i>Description</i>	The name of the football club or team.
<i>Data Type</i>	Character
<i>Character Support</i>	Letters, Numbers
<i>Length</i>	50
<i>Decimal Places</i>	—
<i>Input Mask</i>	—
<i>Display Format</i>	Each description should start with a capital letter.
<i>Key Type</i>	Non-key
<i>Key Structure</i>	—
<i>Uniqueness</i>	Non-unique
<i>Null Support</i>	No Nulls
<i>Values Entered By</i>	User
<i>Required Value</i>	Yes
<i>Default Value</i>	—
<i>Range of Values</i>	—
<i>Edit Rule</i>	Enter Now, Edits Allowed
<i>Comparisons Allowed</i>	—
<i>Operations Allowed</i>	—

#### 4.5 Venue lookup table (tblVenues)

<b>tblMatches</b>	Contains the stadiums that are used in the football competition, and the clubs that predominately reside there. This table is used to perform performance studies against different venues or neutral sites.			
<b>Primary Key</b>	venueID			
<b>Foreign Key</b>	<b>Related Table</b>	<b>Deletion Rule</b>	<b>Participation Type</b>	<b>Participation Degree</b>
teamID	tblTeams	Deny	Mandatory	(0,N)
—	tblMatches	Deny	Mandatory	(1,1)

#### 4.5.1 venueID field

<i>Specification Type</i>	Unique
<i>Shared By</i>	tblMatches, tblTeams
<i>Description</i>	A unique number used to identify venues used in football competitions.
<i>Data Type</i>	Numeric
<i>Character Support</i>	Numbers
<i>Length</i>	4
<i>Decimal Places</i>	0
<i>Input Mask</i>	####
<i>Display Format</i>	0000
<i>Key Type</i>	Primary
<i>Key Structure</i>	Simple
<i>Uniqueness</i>	Unique
<i>Null Support</i>	No Nulls
<i>Values Entered By</i>	System
<i>Required Value</i>	Yes
<i>Default Value</i>	N/A
<i>Range of Values</i>	1000-9999
<i>Edit Rule</i>	Enter Now, Edits Not Allowed
<i>Comparisons Allowed</i>	Equal, Not Equal
<i>Operations Allowed</i>	—

#### 4.5.2 venCity field

<i>Specification Type</i>	Unique
<i>Shared By</i>	—
<i>Description</i>	The name of the city in which the football venue resides.
<i>Data Type</i>	Character
<i>Character Support</i>	Letters, Numbers
<i>Length</i>	40
<i>Decimal Places</i>	—
<i>Input Mask</i>	—
<i>Display Format</i>	Each description should start with a capital letter.
<i>Key Type</i>	Non-key
<i>Key Structure</i>	—
<i>Uniqueness</i>	Non-unique
<i>Null Support</i>	No Nulls
<i>Values Entered By</i>	User
<i>Required Value</i>	Yes
<i>Default Value</i>	—
<i>Range of Values</i>	—
<i>Edit Rule</i>	Enter Now, Edits Allowed
<i>Comparisons Allowed</i>	—
<i>Operations Allowed</i>	—

### 4.5.3 countryID field

<i>Specification Type</i>	Replica
<i>Parent Table</i>	tblCountries
<i>Source Specification</i>	countryID in tblCountries table
<i>Description</i>	The identification number of the nationality of the player
<i>Data Type</i>	Numeric
<i>Character Support</i>	Numbers
<i>Length</i>	3
<i>Decimal Places</i>	0
<i>Input Mask</i>	###
<i>Display Format</i>	000
<i>Key Type</i>	Foreign
<i>Key Structure</i>	Simple
<i>Uniqueness</i>	Non-unique
<i>Null Support</i>	No Nulls
<i>Values Entered By</i>	User
<i>Required Value</i>	Yes
<i>Default Value</i>	—
<i>Range of Values</i>	Any existing countryID value in tblCountries
<i>Edit Rule</i>	Enter Now, Edits Allowed
<i>Comparisons Allowed</i>	Equal, Not Equal
<i>Operations Allowed</i>	—

### 4.5.4 teamID field

<i>Specification Type</i>	Replica
<i>Parent Table</i>	tblTeams
<i>Source Specification</i>	teamID in tblTeams table
<i>Description</i>	The identification number of the team which plays the majority of its matches at the venue
<i>Data Type</i>	Numeric
<i>Character Support</i>	Numbers
<i>Length</i>	5
<i>Decimal Places</i>	0
<i>Input Mask</i>	#####
<i>Display Format</i>	00000
<i>Key Type</i>	Foreign
<i>Key Structure</i>	Simple
<i>Uniqueness</i>	Non-unique
<i>Null Support</i>	Nulls Allowed
<i>Values Entered By</i>	User
<i>Required Value</i>	No
<i>Default Value</i>	—
<i>Range of Values</i>	Any existing teamID value in tblTeams, or NULL
<i>Edit Rule</i>	Enter Now, Edits Allowed
<i>Comparisons Allowed</i>	Equal, Not Equal
<i>Operations Allowed</i>	—



#### 4.5.5 venName field

<i>Specification Type</i>	Unique
<i>Shared By</i>	—
<i>Description</i>	The name of the football venue used in the football competition.
<i>Data Type</i>	Character
<i>Character Support</i>	Letters, Numbers
<i>Length</i>	40
<i>Decimal Places</i>	—
<i>Input Mask</i>	—
<i>Display Format</i>	Each description should start with a capital letter.
<i>Key Type</i>	Non-key
<i>Key Structure</i>	—
<i>Uniqueness</i>	Non-unique
<i>Null Support</i>	No Nulls
<i>Values Entered By</i>	User
<i>Required Value</i>	Yes
<i>Default Value</i>	—
<i>Range of Values</i>	—
<i>Edit Rule</i>	Enter Now, Edits Allowed
<i>Comparisons Allowed</i>	—
<i>Operations Allowed</i>	—

#### 4.5.6 venAltitude field

<i>Specification Type</i>	Unique
<i>Shared By</i>	—
<i>Description</i>	The altitude above mean sea level at which the football match occurred, in meters.
<i>Data Type</i>	Numeric
<i>Character Support</i>	Numbers
<i>Length</i>	4
<i>Decimal Places</i>	0
<i>Input Mask</i>	####
<i>Display Format</i>	0000 m
<i>Key Type</i>	Non-key
<i>Key Structure</i>	—
<i>Uniqueness</i>	Non-unique
<i>Null Support</i>	No Nulls
<i>Values Entered By</i>	User
<i>Required Value</i>	Yes
<i>Default Value</i>	—
<i>Range of Values</i>	—
<i>Edit Rule</i>	Enter Now, Edits Allowed
<i>Comparisons Allowed</i>	Equal, Not Equal, Greater Than, Less Than
<i>Operations Allowed</i>	—

#### 4.5.7 venLatitude field

<i>Specification Type</i>	Unique
<i>Shared By</i>	—
<i>Description</i>	The geographic latitude of the football stadium in decimal degrees, based on WGS 84 reference system.
<i>Data Type</i>	Numeric
<i>Character Support</i>	Numbers
<i>Length</i>	3
<i>Decimal Places</i>	6
<i>Input Mask</i>	###.#####
<i>Display Format</i>	000.000000
<i>Key Type</i>	Non-key
<i>Key Structure</i>	—
<i>Uniqueness</i>	Non-unique
<i>Null Support</i>	No Nulls
<i>Values Entered By</i>	User
<i>Required Value</i>	Yes
<i>Default Value</i>	—
<i>Range of Values</i>	—
<i>Edit Rule</i>	Enter Now, Edits Allowed
<i>Comparisons Allowed</i>	Equal, Not Equal, Greater Than, Less Than
<i>Operations Allowed</i>	—

#### 4.5.8 venLongitude field

<i>Specification Type</i>	Unique
<i>Shared By</i>	—
<i>Description</i>	The geographic longitude of the football stadium in decimal degrees, based on WGS 84 reference system.
<i>Data Type</i>	Numeric
<i>Character Support</i>	Numbers
<i>Length</i>	3
<i>Decimal Places</i>	6
<i>Input Mask</i>	###.#####
<i>Display Format</i>	000.000000
<i>Key Type</i>	Non-key
<i>Key Structure</i>	—
<i>Uniqueness</i>	Non-unique
<i>Null Support</i>	No Nulls
<i>Values Entered By</i>	User
<i>Required Value</i>	Yes
<i>Default Value</i>	—
<i>Range of Values</i>	—
<i>Edit Rule</i>	Enter Now, Edits Allowed
<i>Comparisons Allowed</i>	Equal, Not Equal, Greater Than, Less Than
<i>Operations Allowed</i>	—

## 4.6 Home Teams linking table (tblHomeTeams)

<b>tblHomeTeams</b>	This table contains the names of the clubs that are designated home teams in a football match.			
<b>Primary Key</b>	matchID, teamID			
<b>Foreign Key</b>	<b>Related Table</b>	<b>Deletion Rule</b>	<b>Participation Type</b>	<b>Participation Degree</b>
matchID	tblMatches	—	Optional	(1,1)
teamID	tblTeams	—	Optional	(1,N)

### 4.6.1 matchID field

<i>Specification Type</i>	Replica
<i>Parent Table</i>	tblMatches
<i>Source Specification</i>	matchID in tblMatches table
<i>Description</i>	The identification number of the match played in a football competition.
<i>Data Type</i>	Numeric
<i>Character Support</i>	Numbers
<i>Length</i>	7
<i>Decimal Places</i>	0
<i>Input Mask</i>	#####
<i>Display Format</i>	0000000
<i>Key Type</i>	Foreign
<i>Key Structure</i>	Composite
<i>Uniqueness</i>	Non-unique
<i>Null Support</i>	No Nulls
<i>Values Entered By</i>	User
<i>Required Value</i>	Yes
<i>Default Value</i>	—
<i>Range of Values</i>	Any existing matchID value in tblMatches
<i>Edit Rule</i>	Enter Now, Edits Allowed
<i>Comparisons Allowed</i>	Equal To, Not Equal To
<i>Operations Allowed</i>	—

#### 4.6.2 teamID field

<i>Specification Type</i>	Replica
<i>Parent Table</i>	tblTeams
<i>Source Specification</i>	teamID in tblTeams table
<i>Description</i>	The identification number of the team which plays the majority of its matches at the venue
<i>Data Type</i>	Numeric
<i>Character Support</i>	Numbers
<i>Length</i>	5
<i>Decimal Places</i>	0
<i>Input Mask</i>	#####
<i>Display Format</i>	00000
<i>Key Type</i>	Foreign
<i>Key Structure</i>	Composite
<i>Uniqueness</i>	Non-unique
<i>Null Support</i>	No Nulls
<i>Values Entered By</i>	User
<i>Required Value</i>	Yes
<i>Default Value</i>	—
<i>Range of Values</i>	Any existing teamID value in tblTeams
<i>Edit Rule</i>	Enter Now, Edits Allowed
<i>Comparisons Allowed</i>	Equal, Not Equal To
<i>Operations Allowed</i>	—

#### 4.7 Away Teams linking table (tblAwayTeams)

<b>tblAwayTeams</b>	This table contains the names of the clubs that are designated away teams in a football match.			
<b>Primary Key</b>	matchID, teamID			
<b>Foreign Key</b>	<b>Related Table</b>	<b>Deletion Rule</b>	<b>Participation Type</b>	<b>Participation Degree</b>
matchID	tblMatches	—	Mandatory	(1,1)
teamID	tblTeams	—	Mandatory	(1,N)

##### 4.7.1 matchID field

See specification in Section 4.6.1.

##### 4.7.2 teamID field

See specification in Section 4.6.2.

#### 4.8 Home Managers linking table (tblHomeManagers)

<b>tblHomeManagers</b>	This table contains the names of the managers of the home teams in a football match.			
<b>Primary Key</b>	matchID, managerID			
<b>Foreign Key</b>	<b>Related Table</b>	<b>Deletion Rule</b>	<b>Participation Type</b>	<b>Participation Degree</b>
matchID	tblMatches	—	Mandatory	(1,1)
managerID	tblManagers	—	Mandatory	(1,N)

#### 4.8.1 matchID field

See specification in Section 4.6.1.

#### 4.8.2 managerID field

<i>Specification Type</i>	Replica
<i>Parent Table</i>	tblManagers
<i>Source Specification</i>	managerID in tblManagers table
<i>Description</i>	The identification number that refers to the club manager.
<i>Data Type</i>	Numeric
<i>Character Support</i>	Numbers
<i>Length</i>	4
<i>Decimal Places</i>	0
<i>Input Mask</i>	####
<i>Display Format</i>	0000
<i>Key Type</i>	Foreign
<i>Key Structure</i>	Composite
<i>Uniqueness</i>	Non-unique
<i>Null Support</i>	No Nulls
<i>Values Entered By</i>	User
<i>Required Value</i>	Yes
<i>Default Value</i>	—
<i>Range of Values</i>	Any existing managerID value in tblManagers
<i>Edit Rule</i>	Enter Now, Edits Allowed
<i>Comparisons Allowed</i>	Equal To, Not Equal To
<i>Operations Allowed</i>	—

### 4.9 Away Managers linking table (tblAwayManagers)

<b>tblAwayManagers</b>	This table contains the names of the managers of the away teams in a football match.			
<b>Primary Key</b>	matchID, managerID			
<b>Foreign Key</b>	<b>Related Table</b>	<b>Deletion Rule</b>	<b>Participation Type</b>	<b>Participation Degree</b>
matchID	tblMatches	—	Mandatory	(1,1)
managerID	tblManagers	—	Mandatory	(1,N)

#### 4.9.1 matchID field

See specification in Section 4.6.1.

#### 4.9.2 managerID field

See specification in Section 4.8.2.

## 4.10 Environments table (tblEnvironments)

<b>tblEnvironments</b>	Records the ambient conditions under which the football match took place. This table is used to track match performance relative to weather and other natural conditions.			
<b>Primary Key</b>	enviroID			
<b>Foreign Key</b>	<b>Related Table</b>	<b>Deletion Rule</b>	<b>Participation Type</b>	<b>Participation Degree</b>
matchID	tblMatches	—	Optional	(1,1)
—	tblWeatherKickoff	Restrict	Mandatory	(0,1)
—	tblWeatherHalftime	Restrict	Mandatory	(0,1)
—	tblWeatherFulltime	Restrict	Mandatory	(0,1)

### 4.10.1 enviroID field

<i>Specification Type</i>	Unique
<i>Shared By</i>	tblMatches
<i>Description</i>	A unique number used to tie environmental conditions to the matches in which they are played.
<i>Data Type</i>	Numeric
<i>Character Support</i>	Numbers
<i>Length</i>	7
<i>Decimal Places</i>	0
<i>Input Mask</i>	#####
<i>Display Format</i>	0000000
<i>Key Type</i>	Primary
<i>Key Structure</i>	Simple
<i>Uniqueness</i>	Unique
<i>Null Support</i>	No Nulls
<i>Values Entered By</i>	System
<i>Required Value</i>	Yes
<i>Default Value</i>	—
<i>Range of Values</i>	1000000-9999999
<i>Edit Rule</i>	Enter Now, Edits Not Allowed
<i>Comparisons Allowed</i>	Equal To, Not Equal To
<i>Operations Allowed</i>	—

#### 4.10.2 matchID field

<i>Specification Type</i>	Replica
<i>Parent Table</i>	tblMatches
<i>Source Specification</i>	matchID in tblMatches table
<i>Description</i>	The identification number of the football match
<i>Data Type</i>	Numeric
<i>Character Support</i>	Numbers
<i>Length</i>	7
<i>Decimal Places</i>	0
<i>Input Mask</i>	#####
<i>Display Format</i>	0000000
<i>Key Type</i>	Foreign
<i>Key Structure</i>	Simple
<i>Uniqueness</i>	Non-unique
<i>Null Support</i>	No Nulls
<i>Values Entered By</i>	User
<i>Required Value</i>	Yes
<i>Default Value</i>	—
<i>Range of Values</i>	Any existing matchID value in tblMatches
<i>Edit Rule</i>	Enter Now, Edits Allowed
<i>Comparisons Allowed</i>	Equal, Not Equal
<i>Operations Allowed</i>	—

#### 4.10.3 envKickoffTime

<i>Specification Type</i>	Unique
<i>Shared By</i>	—
<i>Description</i>	The time at which the football match kicked off.
<i>Data Type</i>	DateTime
<i>Character Support</i>	Numbers
<i>Length</i>	4
<i>Decimal Places</i>	0
<i>Input Mask</i>	HH:MM
<i>Display Format</i>	HH:MM
<i>Key Type</i>	Non-key
<i>Key Structure</i>	—
<i>Uniqueness</i>	Non-unique
<i>Null Support</i>	No Nulls
<i>Values Entered By</i>	User
<i>Required Value</i>	Yes
<i>Default Value</i>	—
<i>Range of Values</i>	—
<i>Edit Rule</i>	Enter Now, Edits Allowed
<i>Comparisons Allowed</i>	Equal, Not Equal, Greater Than, Less Than
<i>Operations Allowed</i>	—

#### 4.10.4 envTemperature

<i>Specification Type</i>	Unique
<i>Shared By</i>	—
<i>Description</i>	The ambient temperature at kickoff, in degrees Celsius.
<i>Data Type</i>	Numeric
<i>Character Support</i>	Numbers
<i>Length</i>	2
<i>Decimal Places</i>	1
<i>Input Mask</i>	##.##
<i>Display Format</i>	20.0°C
<i>Key Type</i>	Non-key
<i>Key Structure</i>	—
<i>Uniqueness</i>	Non-unique
<i>Null Support</i>	No Nulls
<i>Values Entered By</i>	User
<i>Required Value</i>	Yes
<i>Default Value</i>	20.0
<i>Range of Values</i>	-15.0 - 40.0
<i>Edit Rule</i>	Enter Now, Edits Allowed
<i>Comparisons Allowed</i>	Equal, Not Equal, Greater Than, Less Than
<i>Operations Allowed</i>	—

#### 4.11 Weather conditions lookup table (tblWeather)

<b>tblWeather</b>	Contains a list of specific weather conditions during a football match. These conditions are terms from NOAA National Weather Service.			
<b>Primary Key</b>	weatherID			
<b>Foreign Key</b>	<b>Related Table</b>	<b>Deletion Rule</b>	<b>Participation Type</b>	<b>Participation Degree</b>
—	tblEnvironments	Restrict	Mandatory	(1,1)



#### 4.11.1 weatherID field

<i>Specification Type</i>	Unique
<i>Shared By</i>	tblEnvironments
<i>Description</i>	A unique number used to identify specific weather conditions.
<i>Data Type</i>	Numeric
<i>Character Support</i>	Numbers
<i>Length</i>	2
<i>Decimal Places</i>	0
<i>Input Mask</i>	##
<i>Display Format</i>	00
<i>Key Type</i>	Primary
<i>Key Structure</i>	Simple
<i>Uniqueness</i>	Unique
<i>Null Support</i>	No Nulls
<i>Values Entered By</i>	System
<i>Required Value</i>	Yes
<i>Default Value</i>	—
<i>Range of Values</i>	10-99
<i>Edit Rule</i>	Enter Now, Edits Not Allowed
<i>Comparisons Allowed</i>	Equal To, Not Equal To
<i>Operations Allowed</i>	—

#### 4.11.2 wxConditionDesc field

<i>Specification Type</i>	Unique
<i>Shared By</i>	—
<i>Description</i>	The description of the predominate weather condition during the football match.
<i>Data Type</i>	Character
<i>Character Support</i>	Letters
<i>Length</i>	40
<i>Decimal Places</i>	—
<i>Input Mask</i>	—
<i>Display Format</i>	Each description should start with a capital letter.
<i>Key Type</i>	Non-key
<i>Key Structure</i>	—
<i>Uniqueness</i>	Non-unique
<i>Null Support</i>	No Nulls
<i>Values Entered By</i>	User
<i>Required Value</i>	Yes
<i>Default Value</i>	—
<i>Range of Values</i>	—
<i>Edit Rule</i>	Enter Now, Edits Allowed
<i>Comparisons Allowed</i>	—
<i>Operations Allowed</i>	—

## 4.12 Kickoff weather linking table (tblWeatherKickoff)

<b>tblWeatherKickoff</b>	This table records the ambient weather conditions at kickoff of the football match.			
<b>Primary Keys</b>	enviroID,weatherID			
<b>Foreign Key</b>	<b>Related Table</b>	<b>Deletion Rule</b>	<b>Participation Type</b>	<b>Participation Degree</b>
enviroID	tblEnvironments	—	Mandatory	(1,1)
weatherID	tblWeather	—	Mandatory	(1,1)

### 4.12.1 enviroID field

<i>Specification Type</i>	Unique
<i>Parent Table</i>	tblEnvironments
<i>Source Specification</i>	enviroID field in tblEnvironments table
<i>Description</i>	A unique number used to tie environmental conditions to the matches in which they are played.
<i>Data Type</i>	Numeric
<i>Character Support</i>	Numbers
<i>Length</i>	7
<i>Decimal Places</i>	0
<i>Input Mask</i>	#####
<i>Display Format</i>	000000
<i>Key Type</i>	Foreign
<i>Key Structure</i>	Composite
<i>Uniqueness</i>	Non-unique
<i>Null Support</i>	No Nulls
<i>Values Entered By</i>	User
<i>Required Value</i>	Yes
<i>Default Value</i>	—
<i>Range of Values</i>	Any existing enviroID value in tblEnvironments
<i>Edit Rule</i>	Enter Now, Edits Allowed
<i>Comparisons Allowed</i>	Equal To, Not Equal To
<i>Operations Allowed</i>	—

#### 4.12.2 weatherID field

<i>Specification Type</i>	Unique
<i>Parent Table</i>	tblWeather
<i>Source Specification</i>	weatherID field in tblWeather table
<i>Description</i>	A unique number used to identify specific weather conditions.
<i>Data Type</i>	Numeric
<i>Character Support</i>	Numbers
<i>Length</i>	2
<i>Decimal Places</i>	0
<i>Input Mask</i>	##
<i>Display Format</i>	00
<i>Key Type</i>	Foreign
<i>Key Structure</i>	Composite
<i>Uniqueness</i>	Non-unique
<i>Null Support</i>	No Nulls
<i>Values Entered By</i>	User
<i>Required Value</i>	Yes
<i>Default Value</i>	—
<i>Range of Values</i>	Any existing weatherID value in tblWeather
<i>Edit Rule</i>	Enter Now, Edits Allowed
<i>Comparisons Allowed</i>	Equal To, Not Equal To
<i>Operations Allowed</i>	—

#### 4.13 Halftime weather linking table (tblWeatherHalftime)

<b>tblWeatherHalftime</b>	This table records the ambient weather conditions at halftime of the football match.			
<b>Primary Keys</b>	enviroID,weatherID			
<b>Foreign Key</b>	<b>Related Table</b>	<b>Deletion Rule</b>	<b>Participation Type</b>	<b>Participation Degree</b>
enviroID	tblEnvironments	—	Mandatory	(1,1)
weatherID	tblWeather	—	Mandatory	(1,1)

##### 4.13.1 enviroID field

See specification in Section 4.12.1.

##### 4.13.2 weatherID field

See specification in Section 4.12.2.

#### 4.14 Fulltime weather linking table (tblWeatherFulltime)

<b>tblWeatherKickoff</b>	This table records the ambient weather conditions at the end of the football match.			
<b>Primary Keys</b>	enviroID,weatherID			
<b>Foreign Key</b>	<b>Related Table</b>	<b>Deletion Rule</b>	<b>Participation Type</b>	<b>Participation Degree</b>
enviroID	tblEnvironments	—	Mandatory	(1,1)
weatherID	tblWeather	—	Mandatory	(1,1)

#### 4.14.1 enviroID field

See specification in Section 4.12.1.

#### 4.14.2 weatherID field

See specification in Section 4.12.2.

## 5 Personnel Tables

The following tables capture data related to personnel associated with a football match, such as the players, managers, and central referees (but not assistant referees). The tactical positions of the players and the national origins of the personnel are also captured here. The major personnel table related to a match is the Lineup table, which tracks the player list (starting and bench) for a particular match.

### 5.1 Players table (tblPlayers)

<b>tblPlayers</b>	Contains the list of players who participate in the football competition, allowing for the tracking of player participation and performance in the club and the competition.			
<b>Primary Key</b>	playerID			
<b>Foreign Key</b>	<b>Related Table</b>	<b>Deletion Rule</b>	<b>Participation Type</b>	<b>Participation Degree</b>
countryID	tblCountries	—	Optional	(0,N)
—	tblLineups	Restrict	Mandatory	(1,1)

#### 5.1.1 playerID field

<i>Specification Type</i>	Unique
<i>Shared By</i>	tblLineups
<i>Description</i>	A unique number used to identify players in a football competition.
<i>Data Type</i>	Numeric
<i>Character Support</i>	Numbers
<i>Length</i>	6
<i>Decimal Places</i>	0
<i>Input Mask</i>	#####
<i>Display Format</i>	000000
<i>Key Type</i>	Primary
<i>Key Structure</i>	Simple
<i>Uniqueness</i>	Unique
<i>Null Support</i>	No Nulls
<i>Values Entered By</i>	System
<i>Required Value</i>	Yes
<i>Default Value</i>	N/A
<i>Range of Values</i>	100000-999999
<i>Edit Rule</i>	Enter Now, Edits Not Allowed
<i>Comparisons Allowed</i>	Equal To, Not Equal To
<i>Operations Allowed</i>	—

### 5.1.2 countryID field

<i>Specification Type</i>	Replica
<i>Parent Table</i>	tblCountries
<i>Source Specification</i>	countryID in tblCountries table
<i>Description</i>	The identification number of the nationality of the player
<i>Data Type</i>	Numeric
<i>Character Support</i>	Numbers
<i>Length</i>	3
<i>Decimal Places</i>	0
<i>Input Mask</i>	###
<i>Display Format</i>	000
<i>Key Type</i>	Foreign
<i>Key Structure</i>	Simple
<i>Uniqueness</i>	Non-unique
<i>Null Support</i>	No Nulls
<i>Values Entered By</i>	User
<i>Required Value</i>	Yes
<i>Default Value</i>	—
<i>Range of Values</i>	Any existing countryID value in tblCountries
<i>Edit Rule</i>	Enter Now, Edits Allowed
<i>Comparisons Allowed</i>	Equal, Not Equal
<i>Operations Allowed</i>	—

### 5.1.3 plyrBirthdate field

<i>Specification Type</i>	Unique
<i>Shared By</i>	—
<i>Description</i>	The birth date of the football player, in ISO 8601 (YYYY-MM-DD) format.
<i>Data Type</i>	DateTime
<i>Character Support</i>	Numbers
<i>Length</i>	7
<i>Decimal Places</i>	0
<i>Input Mask</i>	YYYY-MM-DD
<i>Display Format</i>	Day Month Year
<i>Key Type</i>	Non-key
<i>Key Structure</i>	—
<i>Uniqueness</i>	Non-unique
<i>Null Support</i>	No Nulls
<i>Values Entered By</i>	User
<i>Required Value</i>	Yes
<i>Default Value</i>	—
<i>Range of Values</i>	—
<i>Edit Rule</i>	Enter Now, Edits Allowed
<i>Comparisons Allowed</i>	Equal, Not Equal, Greater Than, Less Than
<i>Operations Allowed</i>	Subtraction

#### 5.1.4 plyrFirstname field

<i>Specification Type</i>	Unique
<i>Shared By</i>	—
<i>Description</i>	The player's first name.
<i>Data Type</i>	Character
<i>Character Support</i>	Letters
<i>Length</i>	20
<i>Decimal Places</i>	—
<i>Input Mask</i>	—
<i>Display Format</i>	Each description should start with a capital letter.
<i>Key Type</i>	Non-key
<i>Key Structure</i>	—
<i>Uniqueness</i>	Non-unique
<i>Null Support</i>	No Nulls
<i>Values Entered By</i>	User
<i>Required Value</i>	Yes
<i>Default Value</i>	—
<i>Range of Values</i>	—
<i>Edit Rule</i>	Enter Now, Edits Allowed
<i>Comparisons Allowed</i>	—
<i>Operations Allowed</i>	—

#### 5.1.5 plyrLastname field

<i>Specification Type</i>	Unique
<i>Shared By</i>	—
<i>Description</i>	The player's last name.
<i>Data Type</i>	Character
<i>Character Support</i>	Letters
<i>Length</i>	30
<i>Decimal Places</i>	—
<i>Input Mask</i>	—
<i>Display Format</i>	Each description should start with a capital letter.
<i>Key Type</i>	Non-key
<i>Key Structure</i>	—
<i>Uniqueness</i>	Non-unique
<i>Null Support</i>	No Nulls
<i>Values Entered By</i>	User
<i>Required Value</i>	Yes
<i>Default Value</i>	—
<i>Range of Values</i>	—
<i>Edit Rule</i>	Enter Now, Edits Allowed
<i>Comparisons Allowed</i>	—
<i>Operations Allowed</i>	—

### 5.1.6 plyrNickname field

<i>Specification Type</i>	Unique
<i>Shared By</i>	—
<i>Description</i>	The player's nickname, if any.
<i>Data Type</i>	Character
<i>Character Support</i>	Letters
<i>Length</i>	30
<i>Decimal Places</i>	—
<i>Input Mask</i>	—
<i>Display Format</i>	Each description should start with a capital letter.
<i>Key Type</i>	Non-key
<i>Key Structure</i>	—
<i>Uniqueness</i>	Non-unique
<i>Null Support</i>	Nulls Allowed
<i>Values Entered By</i>	User
<i>Required Value</i>	No
<i>Default Value</i>	NULL
<i>Range of Values</i>	—
<i>Edit Rule</i>	Enter Now, Edits Allowed
<i>Comparisons Allowed</i>	—
<i>Operations Allowed</i>	—

### 5.1.7 plyrDefPosID field

<i>Specification Type</i>	Replica
<i>Parent Table</i>	tblPositions
<i>Source Specification</i>	positionID in tblPositions table
<i>Description</i>	The identification number of the player's default football position
<i>Data Type</i>	Numeric
<i>Character Support</i>	Numbers
<i>Length</i>	2
<i>Decimal Places</i>	0
<i>Input Mask</i>	##
<i>Display Format</i>	00
<i>Key Type</i>	Foreign
<i>Key Structure</i>	Simple
<i>Uniqueness</i>	Non-unique
<i>Null Support</i>	No Nulls
<i>Values Entered By</i>	User
<i>Required Value</i>	Yes
<i>Default Value</i>	—
<i>Range of Values</i>	Any existing positionID value in tblPositions
<i>Edit Rule</i>	Enter Now, Edits Allowed
<i>Comparisons Allowed</i>	Equal, Not Equal
<i>Operations Allowed</i>	—

## 5.2 Managers table (tblManagers)

<b>tblManagers</b>	Contains the list of managers who participate in the football competition, allowing for the tracking of managerial changes at the club during a competition.			
<b>Primary Key</b>	managerID			
<b>Foreign Key</b>	<b>Related Table</b>	<b>Deletion Rule</b>	<b>Participation Type</b>	<b>Participation Degree</b>
countryID	tblCountries	—	Optional	(0,N)
—	tblMatches	Restrict	Mandatory	(1,1)

### 5.2.1 managerID field

<i>Specification Type</i>	Unique
<i>Shared By</i>	tblMatches
<i>Description</i>	A unique number used to identify managers in a football competition.
<i>Data Type</i>	Numeric
<i>Character Support</i>	Numbers
<i>Length</i>	4
<i>Decimal Places</i>	0
<i>Input Mask</i>	####
<i>Display Format</i>	0000
<i>Key Type</i>	Primary
<i>Key Structure</i>	Simple
<i>Uniqueness</i>	Unique
<i>Null Support</i>	No Nulls
<i>Values Entered By</i>	System
<i>Required Value</i>	Yes
<i>Default Value</i>	N/A
<i>Range of Values</i>	1000-9999
<i>Edit Rule</i>	Enter Now, Edits Not Allowed
<i>Comparisons Allowed</i>	Equal To, Not Equal To
<i>Operations Allowed</i>	—

### 5.2.2 countryID field

See specification in section 5.1.2.

### 5.2.3 mgrBirthdate field

Specification is identical to that defined in section 5.1.3.

### 5.2.4 mgrFirstname field

Specification is identical to that defined in section 5.1.4.

### 5.2.5 mgrLastname field

Specification is identical to that defined in section 5.1.5.

### 5.2.6 mgrNickname field

Specification is identical to that defined in section 5.1.6 .



### 5.3 Referees table (tblReferees)

<b>tblReferees</b>	Contains the list of match referees who participate in the football competition, allowing for the tracking of their participation and performance in the competition.			
<b>Primary Key</b>	refereeID			
<b>Foreign Key</b>	<b>Related Table</b>	<b>Deletion Rule</b>	<b>Participation Type</b>	<b>Participation Degree</b>
countryID	tblCountries	—	Optional	(0,N)
—	tblMatches	Restrict	Mandatory	(1,1)

#### 5.3.1 refereeID field

<i>Specification Type</i>	Unique
<i>Shared By</i>	tblMatches
<i>Description</i>	A unique number used to identify match referees in a football competition.
<i>Data Type</i>	Numeric
<i>Character Support</i>	Numbers
<i>Length</i>	4
<i>Decimal Places</i>	0
<i>Input Mask</i>	####
<i>Display Format</i>	0000
<i>Key Type</i>	Primary
<i>Key Structure</i>	Simple
<i>Uniqueness</i>	Unique
<i>Null Support</i>	No Nulls
<i>Values Entered By</i>	System
<i>Required Value</i>	Yes
<i>Default Value</i>	N/A
<i>Range of Values</i>	1000-9999
<i>Edit Rule</i>	Enter Now, Edits Not Allowed
<i>Comparisons Allowed</i>	Equal To, Not Equal To
<i>Operations Allowed</i>	—

#### 5.3.2 countryID field

See specification in section 5.1.2.

#### 5.3.3 refBirthdate field

Specification is identical to that defined in section 5.1.3.

#### 5.3.4 refFirstName field

Specification is identical to that defined in section 5.1.4.

#### 5.3.5 refLastName field

Specification is identical to that defined in section 5.1.5.

## 5.4 Country lookup table (tblCountries)

<b>tblCountries</b>	Contains the list of countries represented by personnel who participate in a football competition.			
<b>Primary Key</b>	countryID			
<b>Foreign Key</b>	<b>Related Table</b>	<b>Deletion Rule</b>	<b>Participation Type</b>	<b>Participation Degree</b>
—	tblPlayers	Restrict	Mandatory	(1,1)
—	tblManagers	Restrict	Mandatory	(1,1)
—	tblReferees	Restrict	Mandatory	(1,1)
confedID	tblConfederations	—	Optional	(1,N)

### 5.4.1 countryID field

<i>Specification Type</i>	Unique
<i>Shared By</i>	tblPlayers, tblManagers, tblReferees
<i>Description</i>	A unique number used to identify the country of personnel.
<i>Data Type</i>	Numeric
<i>Character Support</i>	Numbers
<i>Length</i>	3
<i>Decimal Places</i>	0
<i>Input Mask</i>	###
<i>Display Format</i>	000
<i>Key Type</i>	Primary
<i>Key Structure</i>	Simple
<i>Uniqueness</i>	Unique
<i>Null Support</i>	No Nulls
<i>Values Entered By</i>	System
<i>Required Value</i>	Yes
<i>Default Value</i>	N/A
<i>Range of Values</i>	100-999
<i>Edit Rule</i>	Enter Now, Edits Not Allowed
<i>Comparisons Allowed</i>	Equal To, Not Equal To
<i>Operations Allowed</i>	—

### 5.4.2 *ctyName* field

<i>Specification Type</i>	Unique
<i>Shared By</i>	—
<i>Description</i>	Country name.
<i>Data Type</i>	Character
<i>Character Support</i>	Letters
<i>Length</i>	60
<i>Decimal Places</i>	—
<i>Input Mask</i>	—
<i>Display Format</i>	Each description should start with a capital letter.
<i>Key Type</i>	Non-key
<i>Key Structure</i>	—
<i>Uniqueness</i>	Non-unique
<i>Null Support</i>	No Nulls
<i>Values Entered By</i>	User
<i>Required Value</i>	Yes
<i>Default Value</i>	—
<i>Range of Values</i>	—
<i>Edit Rule</i>	Enter Now, Edits Not Allowed
<i>Comparisons Allowed</i>	—
<i>Operations Allowed</i>	—

### 5.4.3 *confedID* field

<i>Specification Type</i>	Replica
<i>Parent Table</i>	tblConfederations
<i>Source Specification</i>	confedID in tblConfederations table
<i>Description</i>	The identification number of the football confederations
<i>Data Type</i>	Numeric
<i>Character Support</i>	Numbers
<i>Length</i>	2
<i>Decimal Places</i>	0
<i>Input Mask</i>	##
<i>Display Format</i>	00
<i>Key Type</i>	Foreign
<i>Key Structure</i>	Simple
<i>Uniqueness</i>	Non-unique
<i>Null Support</i>	No Nulls
<i>Values Entered By</i>	User
<i>Required Value</i>	Yes
<i>Default Value</i>	—
<i>Range of Values</i>	Any existing confedID value in tblConfederations
<i>Edit Rule</i>	Enter Now, Edits Allowed
<i>Comparisons Allowed</i>	Equal, Not Equal
<i>Operations Allowed</i>	—

## 5.5 Confederations lookup table (tblConfederations)

<b>tblConfederations</b>	Contains the list of football confederations.			
<b>Primary Key</b>	confedID			
<b>Foreign Key</b>	<b>Related Table</b>	<b>Deletion Rule</b>	<b>Participation Type</b>	<b>Participation Degree</b>
—	tblCountries	Restrict	Mandatory	(1,1)

### 5.5.1 confedID field

<i>Specification Type</i>	Unique
<i>Shared By</i>	tblCountries
<i>Description</i>	A unique number used to identify the football confederation.
<i>Data Type</i>	Numeric
<i>Character Support</i>	Numbers
<i>Length</i>	2
<i>Decimal Places</i>	0
<i>Input Mask</i>	##
<i>Display Format</i>	00
<i>Key Type</i>	Primary
<i>Key Structure</i>	Simple
<i>Uniqueness</i>	Unique
<i>Null Support</i>	No Nulls
<i>Values Entered By</i>	System
<i>Required Value</i>	Yes
<i>Default Value</i>	N/A
<i>Range of Values</i>	10-99
<i>Edit Rule</i>	Enter Now, Edits Not Allowed
<i>Comparisons Allowed</i>	Equal To, Not Equal To
<i>Operations Allowed</i>	—

### 5.5.2 confedName field

<i>Specification Type</i>	Unique
<i>Shared By</i>	—
<i>Description</i>	Name of football confederation.
<i>Data Type</i>	Character
<i>Character Support</i>	Letters
<i>Length</i>	40
<i>Decimal Places</i>	—
<i>Input Mask</i>	—
<i>Display Format</i>	Each description should start with a capital letter.
<i>Key Type</i>	Non-key
<i>Key Structure</i>	—
<i>Uniqueness</i>	Non-unique
<i>Null Support</i>	No Nulls
<i>Values Entered By</i>	User
<i>Required Value</i>	Yes
<i>Default Value</i>	—
<i>Range of Values</i>	—
<i>Edit Rule</i>	Enter Now, Edits Not Allowed
<i>Comparisons Allowed</i>	—
<i>Operations Allowed</i>	—

### 5.6 Lineup table (tblLineups)

<b>tblLineups</b>	This table contains the players who participate in matches of the football competition, whether they are starting players or on the substitutes' list. The information is necessary to track the level of participation of players over a season.			
<b>Primary Key</b>	lineupID			
<b>Foreign Key</b>	<b>Related Table</b>	<b>Deletion Rule</b>	<b>Participation Type</b>	<b>Participation Degree</b>
matchID	tblMatches	—	Optional	(22,36)
teamID	tblTeams	—	Optional	(1,N)
playerID	tblPlayers	—	Optional	(1,N)
positionID	tblPositions	—	Optional	(1,N)
—	tblGoals	Restrict	Mandatory	(1,1)
—	tblPenalties	Restrict	Mandatory	(1,1)
—	tblOffenses	Restrict	Mandatory	(1,1)
—	tblSubs	Restrict	Mandatory	(1,1)
—	tblSwitchPositions	Restrict	Mandatory	(1,1)

### 5.6.1 lineupID field

<i>Specification Type</i>	Unique
<i>Shared By</i>	tblGoals, tblPenalties, tblOffenses, tblSubstitutions
<i>Description</i>	A unique number used to identify players who participate in football matches.
<i>Data Type</i>	Numeric
<i>Character Support</i>	Numbers
<i>Length</i>	7
<i>Decimal Places</i>	0
<i>Input Mask</i>	#####
<i>Display Format</i>	0000000
<i>Key Type</i>	Primary
<i>Key Structure</i>	Simple
<i>Uniqueness</i>	Unique
<i>Null Support</i>	No Nulls
<i>Values Entered By</i>	System
<i>Required Value</i>	Yes
<i>Default Value</i>	—
<i>Range of Values</i>	1000000-9999999
<i>Edit Rule</i>	Enter Now, Edits Not Allowed
<i>Comparisons Allowed</i>	Equal To, Not Equal To
<i>Operations Allowed</i>	—

### 5.6.2 matchID field

See specification in section 4.10.2.

### 5.6.3 teamID field

See specification in section 4.5.4.

#### 5.6.4 playerID field

<i>Specification Type</i>	Replica
<i>Parent Table</i>	tblLineups
<i>Source Specification</i>	playerID in tblLineups table
<i>Description</i>	The identification number of the player who participates in the lineup.
<i>Data Type</i>	Numeric
<i>Character Support</i>	Numbers
<i>Length</i>	6
<i>Decimal Places</i>	0
<i>Input Mask</i>	#####
<i>Display Format</i>	000000
<i>Key Type</i>	Foreign
<i>Key Structure</i>	Simple
<i>Uniqueness</i>	Non-unique
<i>Null Support</i>	No Nulls
<i>Values Entered By</i>	User
<i>Required Value</i>	Yes
<i>Default Value</i>	—
<i>Range of Values</i>	Any existing playerID value in tblPlayers
<i>Edit Rule</i>	Enter Now, Edits Allowed
<i>Comparisons Allowed</i>	Equal, Not Equal
<i>Operations Allowed</i>	—

#### 5.6.5 positionID field

<i>Specification Type</i>	Replica
<i>Parent Table</i>	tblPositions
<i>Source Specification</i>	positionID in tblPositions table
<i>Description</i>	The identification number of the football positions
<i>Data Type</i>	Numeric
<i>Character Support</i>	Numbers
<i>Length</i>	2
<i>Decimal Places</i>	0
<i>Input Mask</i>	##
<i>Display Format</i>	00
<i>Key Type</i>	Foreign
<i>Key Structure</i>	Simple
<i>Uniqueness</i>	Non-unique
<i>Null Support</i>	No Nulls
<i>Values Entered By</i>	User
<i>Required Value</i>	Yes
<i>Default Value</i>	—
<i>Range of Values</i>	Any existing positionID value in tblPositions
<i>Edit Rule</i>	Enter Now, Edits Allowed
<i>Comparisons Allowed</i>	Equal, Not Equal
<i>Operations Allowed</i>	—

### 5.6.6 lpStarting field

<i>Specification Type</i>	Unique
<i>Shared By</i>	—
<i>Description</i>	A flag to designate starting players in the match lineup.
<i>Data Type</i>	Numeric
<i>Character Support</i>	Numbers
<i>Length</i>	1
<i>Decimal Places</i>	0
<i>Input Mask</i>	#
<i>Display Format</i>	0
<i>Key Type</i>	Non-key
<i>Key Structure</i>	—
<i>Uniqueness</i>	Non-unique
<i>Null Support</i>	No Nulls
<i>Values Entered By</i>	User
<i>Required Value</i>	Yes
<i>Default Value</i>	0
<i>Range of Values</i>	0-1
<i>Edit Rule</i>	Enter Now, Edits Not Allowed
<i>Comparisons Allowed</i>	Equal To, Not Equal To
<i>Operations Allowed</i>	—

### 5.6.7 lpCaptain field

<i>Specification Type</i>	Unique
<i>Shared By</i>	—
<i>Description</i>	A flag to designate the team captain in the match lineup.
<i>Data Type</i>	Numeric
<i>Character Support</i>	Numbers
<i>Length</i>	1
<i>Decimal Places</i>	0
<i>Input Mask</i>	#
<i>Display Format</i>	0
<i>Key Type</i>	Non-key
<i>Key Structure</i>	—
<i>Uniqueness</i>	Non-unique
<i>Null Support</i>	No Nulls
<i>Values Entered By</i>	User
<i>Required Value</i>	Yes
<i>Default Value</i>	0
<i>Range of Values</i>	0-1
<i>Edit Rule</i>	Enter Now, Edits Not Allowed
<i>Comparisons Allowed</i>	Equal To, Not Equal To
<i>Operations Allowed</i>	—



## 5.7 Positions lookup table (tblPositions)

<b>tblPositions</b>	This table contains information on the field positions (including goalkeeper) and their flanks they occupy on the field. The information is used to track the tactical organization of the lineup during a match.			
<b>Primary Key</b>	positionID			
<b>Foreign Key</b>	<b>Related Table</b>	<b>Deletion Rule</b>	<b>Participation Type</b>	<b>Participation Degree</b>
posFieldID	tblFieldNames	—	Optional	(1,3)
posFlankID	tblFlankNames	—	Optional	(1,3)
—	tblLineups	Restrict	Mandatory	(1,1)

### 5.7.1 positionID field

<i>Specification Type</i>	Unique
<i>Shared By</i>	tblLineups
<i>Description</i>	A unique number used to identify football positions.
<i>Data Type</i>	Numeric
<i>Character Support</i>	Numbers
<i>Length</i>	2
<i>Decimal Places</i>	0
<i>Input Mask</i>	##
<i>Display Format</i>	00
<i>Key Type</i>	Primary
<i>Key Structure</i>	Simple
<i>Uniqueness</i>	Unique
<i>Null Support</i>	No Nulls
<i>Values Entered By</i>	System
<i>Required Value</i>	Yes
<i>Default Value</i>	—
<i>Range of Values</i>	10-40
<i>Edit Rule</i>	Enter Now, Edits Not Allowed
<i>Comparisons Allowed</i>	Equal To, Not Equal To
<i>Operations Allowed</i>	—

### 5.7.2 posFieldID field

<i>Specification Type</i>	Replica
<i>Parent Table</i>	tblFieldNames
<i>Source Specification</i>	posFieldID in tblFieldNames table
<i>Description</i>	The identification number of the football field positions
<i>Data Type</i>	Numeric
<i>Character Support</i>	Numbers
<i>Length</i>	1
<i>Decimal Places</i>	0
<i>Input Mask</i>	#
<i>Display Format</i>	0
<i>Key Type</i>	Foreign
<i>Key Structure</i>	Simple
<i>Uniqueness</i>	Non-unique
<i>Null Support</i>	No Nulls
<i>Values Entered By</i>	User
<i>Required Value</i>	Yes
<i>Default Value</i>	—
<i>Range of Values</i>	Any existing posFieldID value in tblFieldNames
<i>Edit Rule</i>	Enter Now, Edits Allowed
<i>Comparisons Allowed</i>	Equal, Not Equal
<i>Operations Allowed</i>	—

### 5.7.3 posFlankID field

<i>Specification Type</i>	Replica
<i>Parent Table</i>	tblFlankNames
<i>Source Specification</i>	posFlankID in tblFlankNames table
<i>Description</i>	The identification number of the flank locations.
<i>Data Type</i>	Numeric
<i>Character Support</i>	Numbers
<i>Length</i>	1
<i>Decimal Places</i>	0
<i>Input Mask</i>	#
<i>Display Format</i>	0
<i>Key Type</i>	Foreign
<i>Key Structure</i>	Simple
<i>Uniqueness</i>	Non-unique
<i>Null Support</i>	No Nulls
<i>Values Entered By</i>	User
<i>Required Value</i>	Yes
<i>Default Value</i>	—
<i>Range of Values</i>	Any existing posFlankID value in tblFlankNames
<i>Edit Rule</i>	Enter Now, Edits Allowed
<i>Comparisons Allowed</i>	Equal, Not Equal
<i>Operations Allowed</i>	—

## 5.8 Field position name table (tblFieldNames)

<b>tblFieldNames</b>	This table contains a list of the basic field positions.			
<b>Primary Key</b>	posFieldID			
<b>Foreign Key</b>	<b>Related Table</b>	<b>Deletion Rule</b>	<b>Participation Type</b>	<b>Participation Degree</b>
—	tblPositions	Restrict	Mandatory	(1,1)

### 5.8.1 posFieldID field

<i>Specification Type</i>	Unique
<i>Shared By</i>	tblLineups
<i>Description</i>	A unique number used to identify football positions.
<i>Data Type</i>	Numeric
<i>Character Support</i>	Numbers
<i>Length</i>	1
<i>Decimal Places</i>	0
<i>Input Mask</i>	#
<i>Display Format</i>	0
<i>Key Type</i>	Primary
<i>Key Structure</i>	Simple
<i>Uniqueness</i>	Unique
<i>Null Support</i>	No Nulls
<i>Values Entered By</i>	System
<i>Required Value</i>	Yes
<i>Default Value</i>	—
<i>Range of Values</i>	1-9
<i>Edit Rule</i>	Enter Now, Edits Not Allowed
<i>Comparisons Allowed</i>	Equal To, Not Equal To
<i>Operations Allowed</i>	—

### 5.8.2 posFieldName field

<i>Specification Type</i>	Unique
<i>Shared By</i>	—
<i>Description</i>	The description of the generic field position.
<i>Data Type</i>	Character
<i>Character Support</i>	Letters
<i>Length</i>	15
<i>Decimal Places</i>	—
<i>Input Mask</i>	—
<i>Display Format</i>	Each description should start with a capital letter.
<i>Key Type</i>	Non-key
<i>Key Structure</i>	—
<i>Uniqueness</i>	Non-unique
<i>Null Support</i>	No Nulls
<i>Values Entered By</i>	User
<i>Required Value</i>	Yes
<i>Default Value</i>	—
<i>Range of Values</i>	—
<i>Edit Rule</i>	Enter Now, Edits Not Allowed
<i>Comparisons Allowed</i>	—
<i>Operations Allowed</i>	—

### 5.9 Flank name table (tblFlankNames)

<b>tblFlankNames</b>	This table contains a list of the basic flanks on the field.			
<b>Primary Key</b>	posFlankID			
<b>Foreign Key</b>	<b>Related Table</b>	<b>Deletion Rule</b>	<b>Participation Type</b>	<b>Participation Degree</b>
—	tblPositions	Restrict	Mandatory	(1,1)

### 5.9.1 posFlankID field

<i>Specification Type</i>	Unique
<i>Shared By</i>	tblLineups
<i>Description</i>	A unique number used to identify flank areas.
<i>Data Type</i>	Numeric
<i>Character Support</i>	Numbers
<i>Length</i>	1
<i>Decimal Places</i>	0
<i>Input Mask</i>	#
<i>Display Format</i>	0
<i>Key Type</i>	Primary
<i>Key Structure</i>	Simple
<i>Uniqueness</i>	Unique
<i>Null Support</i>	No Nulls
<i>Values Entered By</i>	System
<i>Required Value</i>	Yes
<i>Default Value</i>	—
<i>Range of Values</i>	1-3
<i>Edit Rule</i>	Enter Now, Edits Not Allowed
<i>Comparisons Allowed</i>	Equal To, Not Equal To
<i>Operations Allowed</i>	—

### 5.9.2 posFlankName field

<i>Specification Type</i>	Unique
<i>Shared By</i>	—
<i>Description</i>	The description of the flank area on the field.
<i>Data Type</i>	Character
<i>Character Support</i>	Letters
<i>Length</i>	8
<i>Decimal Places</i>	—
<i>Input Mask</i>	—
<i>Display Format</i>	Each description should start with a capital letter.
<i>Key Type</i>	Non-key
<i>Key Structure</i>	—
<i>Uniqueness</i>	Non-unique
<i>Null Support</i>	Nulls Allowed
<i>Values Entered By</i>	User
<i>Required Value</i>	No
<i>Default Value</i>	—
<i>Range of Values</i>	—
<i>Edit Rule</i>	Enter Now, Edits Not Allowed
<i>Comparisons Allowed</i>	—
<i>Operations Allowed</i>	—

## 6 Match Event Tables

The following tables capture data from match events. These events include goals scored in open play, penalty kick decisions, disciplinary events, substitutions, and tactical or enforced position changes.

### 6.1 Goals table (tblGoals)

<b>tblGoals</b>	This table contains information on the goals that were scored during a match, excluding penalties. The information in this table is used to track match scorelines, scoring records of players in a match, and the types of goals scored.			
<b>Primary Key</b>	goalID			
<b>Foreign Key</b>	<b>Related Table</b>	<b>Deletion Rule</b>	<b>Participation Type</b>	<b>Participation Degree</b>
teamID	tblTeams	—	Optional	(0,N)
lineupID	tblLineups	—	Optional	(0,N)
gtsTypeID	tblGoalStrikes	—	Optional	(0,N)
gtfTypeID	tblGoalEvents	—	Optional	(0,N)

#### 6.1.1 goalID field

<i>Specification Type</i>	Unique
<i>Shared By</i>	—
<i>Description</i>	A unique number used to identify goals scored in a football match.
<i>Data Type</i>	Numeric
<i>Character Support</i>	Numbers
<i>Length</i>	6
<i>Decimal Places</i>	0
<i>Input Mask</i>	#####
<i>Display Format</i>	000000
<i>Key Type</i>	Primary
<i>Key Structure</i>	Simple
<i>Uniqueness</i>	Unique
<i>Null Support</i>	No Nulls
<i>Values Entered By</i>	System
<i>Required Value</i>	Yes
<i>Default Value</i>	—
<i>Range of Values</i>	100000-999999
<i>Edit Rule</i>	Enter Now, Edits Not Allowed
<i>Comparisons Allowed</i>	Equal, Not Equal
<i>Operations Allowed</i>	—

### 6.1.2 teamID field

<i>Specification Type</i>	Replica
<i>Parent Table</i>	tblTeams
<i>Source Specification</i>	teamID in tblTeams table
<i>Description</i>	The identification number of one of the teams credited with the goal scored in the football match
<i>Data Type</i>	Numeric
<i>Character Support</i>	Numbers
<i>Length</i>	5
<i>Decimal Places</i>	0
<i>Input Mask</i>	#####
<i>Display Format</i>	00000
<i>Key Type</i>	Foreign
<i>Key Structure</i>	Simple
<i>Uniqueness</i>	Non-unique
<i>Null Support</i>	No Nulls
<i>Values Entered By</i>	User
<i>Required Value</i>	Yes
<i>Default Value</i>	—
<i>Range of Values</i>	evtAwayTeamID or evtHomeTeamID
<i>Edit Rule</i>	Enter Now, Edits Allowed
<i>Comparisons Allowed</i>	Equal, Not Equal
<i>Operations Allowed</i>	—

### 6.1.3 lineupID field

<i>Specification Type</i>	Replica
<i>Parent Table</i>	tblLineups
<i>Source Specification</i>	lineupID in tblLineups table
<i>Description</i>	The identification number of player participations in match lineups
<i>Data Type</i>	Numeric
<i>Character Support</i>	Numbers
<i>Length</i>	7
<i>Decimal Places</i>	0
<i>Input Mask</i>	#####
<i>Display Format</i>	0000000
<i>Key Type</i>	Foreign
<i>Key Structure</i>	Simple
<i>Uniqueness</i>	Non-unique
<i>Null Support</i>	No Nulls
<i>Values Entered By</i>	User
<i>Required Value</i>	Yes
<i>Default Value</i>	—
<i>Range of Values</i>	Any existing lineupID value in tblLineups
<i>Edit Rule</i>	Enter Now, Edits Allowed
<i>Comparisons Allowed</i>	Equal, Not Equal
<i>Operations Allowed</i>	—

#### 6.1.4 gtsTypeID field

<i>Specification Type</i>	Replica
<i>Parent Table</i>	tblGoalStrikes
<i>Source Specification</i>	gtsTypeID in tblGoalStrikes table
<i>Description</i>	The identification number of body parts used to score goals from open play.
<i>Data Type</i>	Numeric
<i>Character Support</i>	Numbers
<i>Length</i>	1
<i>Decimal Places</i>	0
<i>Input Mask</i>	#
<i>Display Format</i>	0
<i>Key Type</i>	Foreign
<i>Key Structure</i>	Simple
<i>Uniqueness</i>	Non-unique
<i>Null Support</i>	No Nulls
<i>Values Entered By</i>	User
<i>Required Value</i>	Yes
<i>Default Value</i>	—
<i>Range of Values</i>	Any existing gtsTypeID value in tblGoalStrikes
<i>Edit Rule</i>	Enter Now, Edits Allowed
<i>Comparisons Allowed</i>	Equal, Not Equal
<i>Operations Allowed</i>	—

#### 6.1.5 gteTypeID field

<i>Specification Type</i>	Replica
<i>Parent Table</i>	tblGoalEvents
<i>Source Specification</i>	gteTypeID in tblGoalEvents table
<i>Description</i>	The identification number of field events from which goals were scored.
<i>Data Type</i>	Numeric
<i>Character Support</i>	Numbers
<i>Length</i>	1
<i>Decimal Places</i>	0
<i>Input Mask</i>	#
<i>Display Format</i>	0
<i>Key Type</i>	Foreign
<i>Key Structure</i>	Simple
<i>Uniqueness</i>	Non-unique
<i>Null Support</i>	No Nulls
<i>Values Entered By</i>	User
<i>Required Value</i>	Yes
<i>Default Value</i>	—
<i>Range of Values</i>	Any existing gteTypeID value in tblGoalEvents
<i>Edit Rule</i>	Enter Now, Edits Allowed
<i>Comparisons Allowed</i>	Equal, Not Equal
<i>Operations Allowed</i>	—



### 6.1.6 glsTime field

<i>Specification Type</i>	Unique
<i>Shared By</i>	—
<i>Description</i>	The match time at which the goal was scored.
<i>Data Type</i>	Numeric
<i>Character Support</i>	Numbers
<i>Length</i>	2
<i>Decimal Places</i>	0
<i>Input Mask</i>	##
<i>Display Format</i>	00
<i>Key Type</i>	Non-key
<i>Key Structure</i>	—
<i>Uniqueness</i>	Non-unique
<i>Null Support</i>	No Nulls
<i>Values Entered By</i>	User
<i>Required Value</i>	Yes
<i>Default Value</i>	—
<i>Range of Values</i>	0 - 90
<i>Edit Rule</i>	Enter Now, Edits Allowed
<i>Comparisons Allowed</i>	Equal To, Not Equal To
<i>Operations Allowed</i>	Subtraction

### 6.1.7 glsSTime field

<i>Specification Type</i>	Unique
<i>Shared By</i>	—
<i>Description</i>	The match time during stoppage time at which the goal was scored.
<i>Data Type</i>	Numeric
<i>Character Support</i>	Numbers
<i>Length</i>	2
<i>Decimal Places</i>	0
<i>Input Mask</i>	##
<i>Display Format</i>	00
<i>Key Type</i>	Non-key
<i>Key Structure</i>	—
<i>Uniqueness</i>	Non-unique
<i>Null Support</i>	No Nulls
<i>Values Entered By</i>	User
<i>Required Value</i>	Yes
<i>Default Value</i>	—
<i>Range of Values</i>	0-15 when glsTime = 45 or glsTime = 90, 0 otherwise
<i>Edit Rule</i>	Enter Now, Edits Allowed
<i>Comparisons Allowed</i>	Equal To, Not Equal To
<i>Operations Allowed</i>	Subtraction

## 6.2 Goal strike lookup table (tblGoalStrikes)

<b>tblGoalStrikes</b>	This table contains a list of the body parts used to score goals from open play.			
<b>Primary Key</b>	gtsTypeID			
<b>Foreign Key</b>	<b>Related Table</b>	<b>Deletion Rule</b>	<b>Participation Type</b>	<b>Participation Degree</b>
—	tblGoals	Restrict	Mandatory	(1,1)

### 6.2.1 gtsTypeID field

<i>Specification Type</i>	Unique
<i>Shared By</i>	tblGoals
<i>Description</i>	A unique number that identifies the body part used to score open play goals.
<i>Data Type</i>	Numeric
<i>Character Support</i>	Numbers
<i>Length</i>	1
<i>Decimal Places</i>	0
<i>Input Mask</i>	#
<i>Display Format</i>	0
<i>Key Type</i>	Primary
<i>Key Structure</i>	Simple
<i>Uniqueness</i>	Unique
<i>Null Support</i>	No Nulls
<i>Values Entered By</i>	System
<i>Required Value</i>	Yes
<i>Default Value</i>	—
<i>Range of Values</i>	1-9
<i>Edit Rule</i>	Enter Now, Edits Not Allowed
<i>Comparisons Allowed</i>	Equal, Not Equal
<i>Operations Allowed</i>	—

### 6.2.2 gtsDesc field

<i>Specification Type</i>	Unique
<i>Shared By</i>	—
<i>Description</i>	The description of the body part used to score open play goals.
<i>Data Type</i>	Character
<i>Character Support</i>	Letters
<i>Length</i>	15
<i>Decimal Places</i>	—
<i>Input Mask</i>	—
<i>Display Format</i>	Each description should start with a capital letter.
<i>Key Type</i>	Non-key
<i>Key Structure</i>	—
<i>Uniqueness</i>	Non-unique
<i>Null Support</i>	No Nulls
<i>Values Entered By</i>	User
<i>Required Value</i>	Yes
<i>Default Value</i>	—
<i>Range of Values</i>	—
<i>Edit Rule</i>	Enter Now, Edits Not Allowed
<i>Comparisons Allowed</i>	—
<i>Operations Allowed</i>	—

### 6.3 Goal field event lookup table (tblGoalEvents)

<b>tblGoalEvents</b>	This table contains a list of the types of plays from which open play goals are scored.			
<b>Primary Key</b>	gteTypeID			
<b>Foreign Key</b>	<b>Related Table</b>	<b>Deletion Rule</b>	<b>Participation Type</b>	<b>Participation Degree</b>
—	tblGoals	Restrict	Mandatory	(1,1)

### 6.3.1 gteTypeID field

<i>Specification Type</i>	Unique
<i>Shared By</i>	tblGoals
<i>Description</i>	A unique number used to identify match events that produced goals.
<i>Data Type</i>	Numeric
<i>Character Support</i>	Numbers
<i>Length</i>	1
<i>Decimal Places</i>	0
<i>Input Mask</i>	#
<i>Display Format</i>	0
<i>Key Type</i>	Primary
<i>Key Structure</i>	Simple
<i>Uniqueness</i>	Unique
<i>Null Support</i>	No Nulls
<i>Values Entered By</i>	System
<i>Required Value</i>	Yes
<i>Default Value</i>	—
<i>Range of Values</i>	1-9
<i>Edit Rule</i>	Enter Now, Edits Not Allowed
<i>Comparisons Allowed</i>	Equal, Not Equal
<i>Operations Allowed</i>	—

### 6.3.2 gteDesc field

<i>Specification Type</i>	Unique
<i>Shared By</i>	—
<i>Description</i>	The description of the match event that led to a goal in open play.
<i>Data Type</i>	Character
<i>Character Support</i>	Letters
<i>Length</i>	30
<i>Decimal Places</i>	—
<i>Input Mask</i>	—
<i>Display Format</i>	Each description should start with a capital letter.
<i>Key Type</i>	Non-key
<i>Key Structure</i>	—
<i>Uniqueness</i>	Non-unique
<i>Null Support</i>	No Nulls
<i>Values Entered By</i>	User
<i>Required Value</i>	Yes
<i>Default Value</i>	—
<i>Range of Values</i>	—
<i>Edit Rule</i>	Enter Now, Edits Not Allowed
<i>Comparisons Allowed</i>	—
<i>Operations Allowed</i>	—

## 6.4 Penalties table (tblPenalties)

<b>tblPenalties</b>	This table lists the penalties given during a football competition. The information stored here will be used to track fouls that resulted in penalties, the referees who awarded them, and the performance of penalty kick takers and goalkeepers.			
<b>Primary Key</b>	penaltyID			
<b>Foreign Key</b>	<b>Related Table</b>	<b>Deletion Rule</b>	<b>Participation Type</b>	<b>Participation Degree</b>
lineupID	tblLineups	—	Optional	(0,N)
foulID	tblFouls	—	Optional	(0,N)
penOutcomeID	tblPenOutcomes	—	Optional	(0,N)

### 6.4.1 penaltyID field

<i>Specification Type</i>	Unique
<i>Shared By</i>	—
<i>Description</i>	A unique number used to identify penalties that occur during a football match.
<i>Data Type</i>	Numeric
<i>Character Support</i>	Numbers
<i>Length</i>	5
<i>Decimal Places</i>	0
<i>Input Mask</i>	#####
<i>Display Format</i>	00000
<i>Key Type</i>	Primary
<i>Key Structure</i>	Simple
<i>Uniqueness</i>	Unique
<i>Null Support</i>	No Nulls
<i>Values Entered By</i>	System
<i>Required Value</i>	Yes
<i>Default Value</i>	—
<i>Range of Values</i>	10000-99999
<i>Edit Rule</i>	Enter Now, Edits Not Allowed
<i>Comparisons Allowed</i>	Equal, Not Equal
<i>Operations Allowed</i>	—

### 6.4.2 lineupID field

See specification in section 6.1.3.

### 6.4.3 foulID field

<i>Specification Type</i>	Replica
<i>Parent Table</i>	tblFouls
<i>Source Specification</i>	foulID in tblFouls table
<i>Description</i>	The identification number of the types of fouls that result in bookings or penalties.
<i>Data Type</i>	Numeric
<i>Character Support</i>	Numbers
<i>Length</i>	2
<i>Decimal Places</i>	0
<i>Input Mask</i>	##
<i>Display Format</i>	00
<i>Key Type</i>	Foreign
<i>Key Structure</i>	Simple
<i>Uniqueness</i>	Non-unique
<i>Null Support</i>	No Nulls
<i>Values Entered By</i>	User
<i>Required Value</i>	Yes
<i>Default Value</i>	—
<i>Range of Values</i>	Any existing foulID value in tblFouls
<i>Edit Rule</i>	Enter Now, Edits Allowed
<i>Comparisons Allowed</i>	Equal, Not Equal
<i>Operations Allowed</i>	—

### 6.4.4 penOutcomeID field

<i>Specification Type</i>	Replica
<i>Parent Table</i>	tblPenOutcomes
<i>Source Specification</i>	penOutcomeID in tblPenOutcomes table
<i>Description</i>	The identification number of penalty kick outcomes.
<i>Data Type</i>	Numeric
<i>Character Support</i>	Numbers
<i>Length</i>	1
<i>Decimal Places</i>	0
<i>Input Mask</i>	#
<i>Display Format</i>	0
<i>Key Type</i>	Foreign
<i>Key Structure</i>	Simple
<i>Uniqueness</i>	Non-unique
<i>Null Support</i>	No Nulls
<i>Values Entered By</i>	User
<i>Required Value</i>	Yes
<i>Default Value</i>	—
<i>Range of Values</i>	Any existing penOutcomeID value in tblPenOutcomes
<i>Edit Rule</i>	Enter Now, Edits Allowed
<i>Comparisons Allowed</i>	Equal, Not Equal
<i>Operations Allowed</i>	—

#### 6.4.5 penTime field

<i>Specification Type</i>	Unique
<i>Shared By</i>	—
<i>Description</i>	The match time at which the penalty was given.
<i>Data Type</i>	Numeric
<i>Character Support</i>	Numbers
<i>Length</i>	2
<i>Decimal Places</i>	0
<i>Input Mask</i>	##
<i>Display Format</i>	00
<i>Key Type</i>	Non-key
<i>Key Structure</i>	—
<i>Uniqueness</i>	Non-unique
<i>Null Support</i>	No Nulls
<i>Values Entered By</i>	User
<i>Required Value</i>	Yes
<i>Default Value</i>	—
<i>Range of Values</i>	0 - 90
<i>Edit Rule</i>	Enter Now, Edits Allowed
<i>Comparisons Allowed</i>	Equal To, Not Equal To
<i>Operations Allowed</i>	Subtraction

#### 6.4.6 penSTime field

<i>Specification Type</i>	Unique
<i>Shared By</i>	—
<i>Description</i>	The match time during stoppage time at which the penalty was given.
<i>Data Type</i>	Numeric
<i>Character Support</i>	Numbers
<i>Length</i>	2
<i>Decimal Places</i>	0
<i>Input Mask</i>	##
<i>Display Format</i>	00
<i>Key Type</i>	Non-key
<i>Key Structure</i>	—
<i>Uniqueness</i>	Non-unique
<i>Null Support</i>	No Nulls
<i>Values Entered By</i>	User
<i>Required Value</i>	Yes
<i>Default Value</i>	0
<i>Range of Values</i>	0-15 when penTime = 45 or penTime = 90, 0 otherwise
<i>Edit Rule</i>	Enter Now, Edits Allowed
<i>Comparisons Allowed</i>	Equal To, Not Equal To
<i>Operations Allowed</i>	Subtraction

## 6.5 Penalty outcome lookup table (tblPenOutcomes)

<b>tblPenOutcomes</b>	This table lists the possible penalty outcomes during a football match.			
<b>Primary Key</b>	penOutcomeID			
<b>Foreign Key</b>	<b>Related Table</b>	<b>Deletion Rule</b>	<b>Participation Type</b>	<b>Participation Degree</b>
—	tblPenalties	Restrict	Mandatory	(1,1)

### 6.5.1 penOutcomeID field

<i>Specification Type</i>	Unique
<i>Shared By</i>	—
<i>Description</i>	A unique number used to identify penalty kick outcomes.
<i>Data Type</i>	Numeric
<i>Character Support</i>	Numbers
<i>Length</i>	1
<i>Decimal Places</i>	0
<i>Input Mask</i>	#
<i>Display Format</i>	0
<i>Key Type</i>	Primary
<i>Key Structure</i>	Simple
<i>Uniqueness</i>	Unique
<i>Null Support</i>	No Nulls
<i>Values Entered By</i>	System
<i>Required Value</i>	Yes
<i>Default Value</i>	—
<i>Range of Values</i>	1-9
<i>Edit Rule</i>	Enter Now, Edits Not Allowed
<i>Comparisons Allowed</i>	Equal, Not Equal
<i>Operations Allowed</i>	—



### 6.5.2 poDesc field

<i>Specification Type</i>	Unique
<i>Shared By</i>	—
<i>Description</i>	The description of the penalty kick outcome.
<i>Data Type</i>	Character
<i>Character Support</i>	Letters
<i>Length</i>	15
<i>Decimal Places</i>	—
<i>Input Mask</i>	—
<i>Display Format</i>	Each description should start with a capital letter.
<i>Key Type</i>	Non-key
<i>Key Structure</i>	—
<i>Uniqueness</i>	Non-unique
<i>Null Support</i>	No Nulls
<i>Values Entered By</i>	User
<i>Required Value</i>	Yes
<i>Default Value</i>	—
<i>Range of Values</i>	—
<i>Edit Rule</i>	Enter Now, Edits Not Allowed
<i>Comparisons Allowed</i>	—
<i>Operations Allowed</i>	—

### 6.6 Offenses table (tblOffenses)

<b>tblOffenses</b>	This table lists the cautions and expulsions given out during a football match. The information stored here will allow the tracking of disciplinary records of players and the performance of referees during a football competition.			
<b>Primary Key</b>	offenseID			
<b>Foreign Key</b>	<b>Related Table</b>	<b>Deletion Rule</b>	<b>Participation Type</b>	<b>Participation Degree</b>
lineupID	tblLineups	—	Optional	(0,N)
foulID	tblFouls	—	Optional	(0,N)
cardID	tblPenOutcomes	—	Optional	(0,N)

### 6.6.1 offenseID field

<i>Specification Type</i>	Unique
<i>Shared By</i>	—
<i>Description</i>	A unique number used to identify bookings that occur during a football match.
<i>Data Type</i>	Numeric
<i>Character Support</i>	Numbers
<i>Length</i>	6
<i>Decimal Places</i>	0
<i>Input Mask</i>	#####
<i>Display Format</i>	000000
<i>Key Type</i>	Primary
<i>Key Structure</i>	Simple
<i>Uniqueness</i>	Unique
<i>Null Support</i>	No Nulls
<i>Values Entered By</i>	System
<i>Required Value</i>	Yes
<i>Default Value</i>	—
<i>Range of Values</i>	100000-999999
<i>Edit Rule</i>	Enter Now, Edits Not Allowed
<i>Comparisons Allowed</i>	Equal, Not Equal
<i>Operations Allowed</i>	—

### 6.6.2 lineupID field

See specification in section 6.1.3.

### 6.6.3 foulID field

See specification in section 6.4.3.

#### 6.6.4 cardID field

<i>Specification Type</i>	Replica
<i>Parent Table</i>	tblCards
<i>Source Specification</i>	cardID in tblCards table
<i>Description</i>	The identification number of caution/expulsion cards.
<i>Data Type</i>	Numeric
<i>Character Support</i>	Numbers
<i>Length</i>	1
<i>Decimal Places</i>	0
<i>Input Mask</i>	#
<i>Display Format</i>	0
<i>Key Type</i>	Foreign
<i>Key Structure</i>	Simple
<i>Uniqueness</i>	Non-unique
<i>Null Support</i>	No Nulls
<i>Values Entered By</i>	User
<i>Required Value</i>	Yes
<i>Default Value</i>	—
<i>Range of Values</i>	Any existing cardID value in tblCards
<i>Edit Rule</i>	Enter Now, Edits Allowed
<i>Comparisons Allowed</i>	Equal, Not Equal
<i>Operations Allowed</i>	—

#### 6.6.5 ofnsTime field

<i>Specification Type</i>	Unique
<i>Shared By</i>	—
<i>Description</i>	The match time at which the booking occurred.
<i>Data Type</i>	Numeric
<i>Character Support</i>	Numbers
<i>Length</i>	2
<i>Decimal Places</i>	0
<i>Input Mask</i>	##
<i>Display Format</i>	00
<i>Key Type</i>	Non-key
<i>Key Structure</i>	—
<i>Uniqueness</i>	Non-unique
<i>Null Support</i>	No Nulls
<i>Values Entered By</i>	User
<i>Required Value</i>	Yes
<i>Default Value</i>	—
<i>Range of Values</i>	0 - 90
<i>Edit Rule</i>	Enter Now, Edits Allowed
<i>Comparisons Allowed</i>	Equal To, Not Equal To
<i>Operations Allowed</i>	Subtraction

### 6.6.6 ofnsSTime field

<i>Specification Type</i>	Unique
<i>Shared By</i>	—
<i>Description</i>	The match time during stoppage time at which the booking occurred.
<i>Data Type</i>	Numeric
<i>Character Support</i>	Numbers
<i>Length</i>	2
<i>Decimal Places</i>	0
<i>Input Mask</i>	##
<i>Display Format</i>	00
<i>Key Type</i>	Non-key
<i>Key Structure</i>	—
<i>Uniqueness</i>	Non-unique
<i>Null Support</i>	No Nulls
<i>Values Entered By</i>	User
<i>Required Value</i>	Yes
<i>Default Value</i>	0
<i>Range of Values</i>	0-15 when ofnsTime = 45 or ofnsTime = 90, 0 otherwise
<i>Edit Rule</i>	Enter Now, Edits Allowed
<i>Comparisons Allowed</i>	Equal To, Not Equal To
<i>Operations Allowed</i>	Subtraction

### 6.7 Fouls lookup table (tblFouls)

<b>tblFouls</b>	This table lists the fouls that result in either penalties, cautions, or expulsions.			
<b>Primary Key</b>	foulID			
<b>Foreign Key</b>	<b>Related Table</b>	<b>Deletion Rule</b>	<b>Participation Type</b>	<b>Participation Degree</b>
—	tblPenalties	Reject	Mandatory	(1,1)
—	tblOffenses	Reject	Mandatory	(1,1)

### 6.7.1 foulID field

<i>Specification Type</i>	Unique
<i>Shared By</i>	—
<i>Description</i>	A unique number used to identify fouls that result in a booking or penalty.
<i>Data Type</i>	Numeric
<i>Character Support</i>	Numbers
<i>Length</i>	2
<i>Decimal Places</i>	0
<i>Input Mask</i>	##
<i>Display Format</i>	00
<i>Key Type</i>	Primary
<i>Key Structure</i>	Simple
<i>Uniqueness</i>	Unique
<i>Null Support</i>	No Nulls
<i>Values Entered By</i>	System
<i>Required Value</i>	Yes
<i>Default Value</i>	—
<i>Range of Values</i>	10-99
<i>Edit Rule</i>	Enter Now, Edits Not Allowed
<i>Comparisons Allowed</i>	Equal, Not Equal
<i>Operations Allowed</i>	—

### 6.7.2 foulDesc field

<i>Specification Type</i>	Unique
<i>Shared By</i>	—
<i>Description</i>	The description of the foul that resulted in a booking.
<i>Data Type</i>	Character
<i>Character Support</i>	Letters
<i>Length</i>	40
<i>Decimal Places</i>	—
<i>Input Mask</i>	—
<i>Display Format</i>	Each description should start with a capital letter.
<i>Key Type</i>	Non-key
<i>Key Structure</i>	—
<i>Uniqueness</i>	Non-unique
<i>Null Support</i>	No Nulls
<i>Values Entered By</i>	User
<i>Required Value</i>	Yes
<i>Default Value</i>	—
<i>Range of Values</i>	—
<i>Edit Rule</i>	Enter Now, Edits Not Allowed
<i>Comparisons Allowed</i>	—
<i>Operations Allowed</i>	—

## 6.8 Card lookup table (tblCards)

<b>tblCards</b>	This table lists the type of cards that are shown during a football match.			
<b>Primary Key</b>	cardID			
<b>Foreign Key</b>	<b>Related Table</b>	<b>Deletion Rule</b>	<b>Participation Type</b>	<b>Participation Degree</b>
—	tblOffenses	Reject	Mandatory	(1,1)

### 6.8.1 cardID field

<i>Specification Type</i>	Unique
<i>Shared By</i>	—
<i>Description</i>	A unique number used to identify caution card types.
<i>Data Type</i>	Numeric
<i>Character Support</i>	Numbers
<i>Length</i>	1
<i>Decimal Places</i>	0
<i>Input Mask</i>	#
<i>Display Format</i>	0
<i>Key Type</i>	Primary
<i>Key Structure</i>	Simple
<i>Uniqueness</i>	Unique
<i>Null Support</i>	No Nulls
<i>Values Entered By</i>	System
<i>Required Value</i>	Yes
<i>Default Value</i>	—
<i>Range of Values</i>	1-3
<i>Edit Rule</i>	Enter Now, Edits Not Allowed
<i>Comparisons Allowed</i>	Equal, Not Equal
<i>Operations Allowed</i>	—

### 6.8.2 cardType field

<i>Specification Type</i>	Unique
<i>Shared By</i>	—
<i>Description</i>	The description of the caution cards.
<i>Data Type</i>	Character
<i>Character Support</i>	Letters and Symbols
<i>Length</i>	12
<i>Decimal Places</i>	—
<i>Input Mask</i>	—
<i>Display Format</i>	Each description should start with a capital letter.
<i>Key Type</i>	Non-key
<i>Key Structure</i>	—
<i>Uniqueness</i>	Non-unique
<i>Null Support</i>	No Nulls
<i>Values Entered By</i>	User
<i>Required Value</i>	Yes
<i>Default Value</i>	—
<i>Range of Values</i>	—
<i>Edit Rule</i>	Enter Now, Edits Not Allowed
<i>Comparisons Allowed</i>	—
<i>Operations Allowed</i>	—

### 6.9 Substitution table (tblSubstitutions)

<b>tblSubstitutions</b>	This table stores the substitutions that occur during a football match. The data scored here would be used to track player participation during a football competition.			
<b>Primary Key</b>	subsID			
<b>Foreign Key</b>	<b>Related Table</b>	<b>Deletion Rule</b>	<b>Participation Type</b>	<b>Participation Degree</b>
—	tblInSubstitutions	Reject	Mandatory	(1,1)
—	tblOutSubstitutions	Reject	Mandatory	(1,1)

### 6.9.1 subsID field

<i>Specification Type</i>	Unique
<i>Shared By</i>	—
<i>Description</i>	A unique number used to identify substitutions that occur during a football match.
<i>Data Type</i>	Numeric
<i>Character Support</i>	Numbers
<i>Length</i>	6
<i>Decimal Places</i>	0
<i>Input Mask</i>	#####
<i>Display Format</i>	000000
<i>Key Type</i>	Primary
<i>Key Structure</i>	Simple
<i>Uniqueness</i>	Unique
<i>Null Support</i>	No Nulls
<i>Values Entered By</i>	System
<i>Required Value</i>	Yes
<i>Default Value</i>	—
<i>Range of Values</i>	100000-999999
<i>Edit Rule</i>	Enter Now, Edits Not Allowed
<i>Comparisons Allowed</i>	Equal, Not Equal
<i>Operations Allowed</i>	—

### 6.9.2 subsTime field

<i>Specification Type</i>	Unique
<i>Shared By</i>	—
<i>Description</i>	The match time at which the substitution was made.
<i>Data Type</i>	Numeric
<i>Character Support</i>	Numbers
<i>Length</i>	2
<i>Decimal Places</i>	0
<i>Input Mask</i>	##
<i>Display Format</i>	00
<i>Key Type</i>	Non-key
<i>Key Structure</i>	—
<i>Uniqueness</i>	Non-unique
<i>Null Support</i>	No Nulls
<i>Values Entered By</i>	User
<i>Required Value</i>	Yes
<i>Default Value</i>	—
<i>Range of Values</i>	0 - 90
<i>Edit Rule</i>	Enter Now, Edits Allowed
<i>Comparisons Allowed</i>	Equal To, Not Equal To
<i>Operations Allowed</i>	Subtraction



### 6.9.3 subsSTime field

<i>Specification Type</i>	Unique
<i>Shared By</i>	—
<i>Description</i>	The match time during stoppage time at which the substitution was made.
<i>Data Type</i>	Numeric
<i>Character Support</i>	Numbers
<i>Length</i>	2
<i>Decimal Places</i>	0
<i>Input Mask</i>	##
<i>Display Format</i>	00
<i>Key Type</i>	Non-key
<i>Key Structure</i>	—
<i>Uniqueness</i>	Non-unique
<i>Null Support</i>	No Nulls
<i>Values Entered By</i>	User
<i>Required Value</i>	Yes
<i>Default Value</i>	0
<i>Range of Values</i>	0-15 when subsTime = 45 or subsTime = 90, 0 otherwise
<i>Edit Rule</i>	Enter Now, Edits Allowed
<i>Comparisons Allowed</i>	Equal To, Not Equal To
<i>Operations Allowed</i>	Subtraction

### 6.10 Players substituted into match linking table (tblInSubstitutions)

<b>tblInSubstitutions</b>	This table lists the players in the match lineup who are substituted into a football match.			
<b>Primary Keys</b>	subsID, lineupID			
<b>Foreign Key</b>	<b>Related Table</b>	<b>Deletion Rule</b>	<b>Participation Type</b>	<b>Participation Degree</b>
subsID	tblSubstitutions	—	Optional	(1,1)
lineupID	tblLineups	—	Optional	(1,1)

### 6.10.1 subsID field

<i>Specification Type</i>	Replica
<i>Parent Table</i>	tblSubstitutions
<i>Source Specification</i>	subsID in tblSubstitutions table
<i>Description</i>	A unique number used to identify substitutions that occur during a football match.
<i>Data Type</i>	Numeric
<i>Character Support</i>	Numbers
<i>Length</i>	6
<i>Decimal Places</i>	0
<i>Input Mask</i>	#####
<i>Display Format</i>	000000
<i>Key Type</i>	Foreign
<i>Key Structure</i>	Composite
<i>Uniqueness</i>	Non-unique
<i>Null Support</i>	No Nulls
<i>Values Entered By</i>	User
<i>Required Value</i>	Yes
<i>Default Value</i>	—
<i>Range of Values</i>	Any existing subsID value in tblSubstitutions
<i>Edit Rule</i>	Enter Now, Edits Allowed
<i>Comparisons Allowed</i>	Equal, Not Equal
<i>Operations Allowed</i>	—

### 6.10.2 lineupID field

<i>Specification Type</i>	Replica
<i>Parent Table</i>	tblLineups
<i>Source Specification</i>	lineupID in tblLineups table
<i>Description</i>	The identification number of player participations in match lineups
<i>Data Type</i>	Numeric
<i>Character Support</i>	Numbers
<i>Length</i>	7
<i>Decimal Places</i>	0
<i>Input Mask</i>	#####
<i>Display Format</i>	0000000
<i>Key Type</i>	Foreign
<i>Key Structure</i>	Composite
<i>Uniqueness</i>	Non-unique
<i>Null Support</i>	No Nulls
<i>Values Entered By</i>	User
<i>Required Value</i>	Yes
<i>Default Value</i>	—
<i>Range of Values</i>	Any existing lineupID value in tblLineups not already in tblInSubstitutions
<i>Edit Rule</i>	Enter Now, Edits Allowed
<i>Comparisons Allowed</i>	Equal, Not Equal
<i>Operations Allowed</i>	—

## 6.11 Players substituted out of match linking table (tblOutSubstitutions)

<b>tblOutSubstitutions</b>	This table lists the players in the match lineup who are substituted out of a football match.			
<b>Primary Keys</b>	subsID, lineupID			
<b>Foreign Key</b>	<b>Related Table</b>	<b>Deletion Rule</b>	<b>Participation Type</b>	<b>Participation Degree</b>
subsID	tblSubstitutions	—	Optional	(1,1)
lineupID	tblLineups	—	Optional	(1,1)

### 6.11.1 subsID field

See specification in Section 6.10.1.

### 6.11.2 lineupID field

See specification in Section 6.10.2.

## 6.12 Switch Positions table (tblSwitchPositions)

<b>tblSwitchPositions</b>	This table stores the instances in which field positions are switched during the match, whether required by goalkeeper expulsion or a tactical change.			
<b>Primary Key</b>	switchID			
<b>Foreign Key</b>	<b>Related Table</b>	<b>Deletion Rule</b>	<b>Participation Type</b>	<b>Participation Degree</b>
lineupID	tblLineups	—	Optional	(0,1)
positionID	tblPositions	—	Optional	(0,1)

### 6.12.1 switchID field

<i>Specification Type</i>	Unique
<i>Shared By</i>	—
<i>Description</i>	A unique number used to identify position switches that occur during a football match.
<i>Data Type</i>	Numeric
<i>Character Support</i>	Numbers
<i>Length</i>	6
<i>Decimal Places</i>	0
<i>Input Mask</i>	#####
<i>Display Format</i>	000000
<i>Key Type</i>	Primary
<i>Key Structure</i>	Simple
<i>Uniqueness</i>	Unique
<i>Null Support</i>	No Nulls
<i>Values Entered By</i>	System
<i>Required Value</i>	Yes
<i>Default Value</i>	—
<i>Range of Values</i>	100000-999999
<i>Edit Rule</i>	Enter Now, Edits Not Allowed
<i>Comparisons Allowed</i>	Equal, Not Equal
<i>Operations Allowed</i>	—

### 6.12.2 lineupID field

See specification in section 6.1.3.

### 6.12.3 switchPositionID field

See specification in section 5.6.5.

### 6.12.4 switchTime field

<i>Specification Type</i>	Unique
<i>Shared By</i>	—
<i>Description</i>	The match time at which the switch in playing positions was made.
<i>Data Type</i>	Numeric
<i>Character Support</i>	Numbers
<i>Length</i>	2
<i>Decimal Places</i>	2
<i>Input Mask</i>	##.##
<i>Display Format</i>	00.00
<i>Key Type</i>	Non-key
<i>Key Structure</i>	—
<i>Uniqueness</i>	Non-unique
<i>Null Support</i>	No Nulls
<i>Values Entered By</i>	User
<i>Required Value</i>	Yes
<i>Default Value</i>	—
<i>Range of Values</i>	0.00 - 90.15
<i>Edit Rule</i>	Enter Now, Edits Allowed
<i>Comparisons Allowed</i>	Equal To, Not Equal To
<i>Operations Allowed</i>	Subtraction

## 7 Auxiliary Tables

The following defines tables used to facilitate data entry into the database. They may not be necessary to implement depending on the tools that are used to develop the front end application, so their inclusion is optional.

### 7.1 Filter table (Filter)

<b>Filter</b>	This table stores references to other primary keys, which is used to establish criteria for list box options in the data entry forms.			
<b>Primary Key</b>	fID			
<b>Foreign Key</b>	<b>Related Table</b>	<b>Deletion Rule</b>	<b>Participation Type</b>	<b>Participation Degree</b>
ref	—	—	Optional	(1,1)

### 7.1.1 fID field

<i>Specification Type</i>	Unique
<i>Shared By</i>	—
<i>Description</i>	A unique number used to identify filtering levels
<i>Data Type</i>	Numeric
<i>Character Support</i>	Numbers
<i>Length</i>	1
<i>Decimal Places</i>	0
<i>Input Mask</i>	#
<i>Display Format</i>	0
<i>Key Type</i>	Primary
<i>Key Structure</i>	Simple
<i>Uniqueness</i>	Unique
<i>Null Support</i>	No Nulls
<i>Values Entered By</i>	System
<i>Required Value</i>	Yes
<i>Default Value</i>	—
<i>Range of Values</i>	0-9
<i>Edit Rule</i>	Enter Now, Edits Allowed
<i>Comparisons Allowed</i>	Equal, Not Equal
<i>Operations Allowed</i>	—

### 7.1.2 ref field

<i>Specification Type</i>	Replica
<i>Parent Table</i>	tblCompetitions, tblRounds, tblMatches, tblTeams, or tblLineups
<i>Source Specification</i>	competitionID in tblCompetitions table, roundID in tblRounds table, matchID in tblMatches table, teamID in tblTeams table, or lineupID in tblLineups table
<i>Description</i>	A unique number that refers to a record in another table.
<i>Data Type</i>	Numeric
<i>Character Support</i>	Numbers
<i>Length</i>	6
<i>Decimal Places</i>	0
<i>Input Mask</i>	#####
<i>Display Format</i>	000000
<i>Key Type</i>	Foreign
<i>Key Structure</i>	Simple
<i>Uniqueness</i>	Non-unique
<i>Null Support</i>	No Nulls
<i>Values Entered By</i>	User
<i>Required Value</i>	Yes
<i>Default Value</i>	—
<i>Range of Values</i>	Any existing primary ID value in the parent tables
<i>Edit Rule</i>	Enter Now, Edits Allowed
<i>Comparisons Allowed</i>	Equal, Not Equal
<i>Operations Allowed</i>	—

## 8 Views

This section presents specifications for virtual tables that are used to comprise views of the Football Match Result Database. These tables draw data from multiple base tables in order to provide context-specific information, preserve data security and confidentiality, and enforce data integrity.

### 8.1 PlayersList view

<b>PlayersList</b>	This view provides a list of the players who are participating in the football competition.
<b>Type</b>	Aggregate
<b>Base Tables</b>	tblPlayers, tblCountries
<b>Field Name</b>	<b>Expression</b>
playerID	tblPlayers.playerID
FullName	tblPlayers.plyrFirstName + ' ' + tblPlayers.plyrLastName
Country	tblCountries.ctyName

## 8.2 ManagerList view

<b>ManagerList</b>	This view provides a list of the managers who are coaching teams in the football competition.
<b>Type</b>	Aggregate
<b>Base Tables</b>	tblManagers, tblCountries
<b>Field Name</b>	<b>Expression</b>
managerID	tblManagers.managerID
FullName	tblManagers.mgrFirstName + ' ' + tblManagers.mgrLastName
Country	tblCountries.ctyName

## 8.3 RefereeList view

<b>RefereeList</b>	This view provides a list of the match referees who are participating in the football competition.
<b>Type</b>	Aggregate
<b>Base Tables</b>	tblReferees, tblCountries
<b>Field Name</b>	<b>Expression</b>
refereeID	tblReferees.refereeID
FullName	tblReferees.refFirstName + ' ' + tblReferees.refLastName
Country	tblCountries.ctyName

## 8.4 HomeTeamList view

<b>HomeTeamList</b>	This view provides a list of the football teams that are designated home teams in their matches.
<b>Type</b>	Aggregate
<b>Base Tables</b>	tblMatches, tblTeams, tblHomeTeams
<b>Field Name</b>	<b>Expression</b>
matchID	tblMatches.matchID
Team	tblTeams.tmName

## 8.5 AwayTeamList view

<b>AwayTeamList</b>	This view provides a list of football teams that are designated away teams in their matches.
<b>Type</b>	Aggregate
<b>Base Tables</b>	tblMatches, tblTeams, tblAwayTeams
<b>Field Name</b>	<b>Expression</b>
matchID	tblMatches.matchID
Team	tblTeams.tmName

## 8.6 PositionsList view

<b>PositionsList</b>	This view provides a list of player positions in a football match.
<b>Type</b>	Aggregate
<b>Base Tables</b>	tblPositions, tblFieldNames, tblFlankNames
<b>Field Name</b>	<b>Expression</b>
positionID	tblPositions.positionID
PositionName	tblFlankNames.posFlankName + ' ' + tblFieldNames.posFieldName

## 8.7 MatchList view

<b>MatchList</b>	This view provides a list of top-level information on the football match, the competitors, and the match referee.
<b>Type</b>	Aggregate
<b>Base Tables</b>	tblMatches, tblCompetitions, tblRounds, tblVenues, HomeTeamList, AwayTeamList, RefereeList
<b>Field Name</b>	<b>Expression</b>
matchID	tblMatches.matchID
competitionID	tblCompetitions.competitionID
roundID	tblRounds.roundID
Competition	tblCompetitions.compName
Round	tblRounds.roundDesc
Matchup	HomeTeamList.Team + ' vs ' + AwayTeamList.Team
Venue	tblVenues.venName
Referee	RefereeList.FullName

## 8.8 LineupList view

<b>LineupList</b>	This view provides a list of player appearances in a football match.
<b>Type</b>	Aggregate
<b>Base Tables</b>	tblTeams, tblLineups, MatchList, PlayersList, PositionsList
<b>Field Name</b>	<b>Expression</b>
lineupID	tblLineups.lineupID
Matchup	MatchList.Matchup
Team	tblTeams.tmName
Player	PlayersList.FullName
PositionName	PositionsList.PositionName
Starter	tblLineups.lpStarting
Captain	tblLineups.lpCaptain

## 8.9 GoalsList view

<b>GoalsList</b>	This view provides a list of goals scored from open play in a match.
<b>Type</b>	Aggregate
<b>Base Tables</b>	tblTeams, LineupList, tblGoals, tblGoalStrikes, tblGoalEvents
<b>Field Name</b>	<b>Expression</b>
goalID	tblGoals.goalID
Matchup	LineupList.Matchup
Team	tblTeams.tmName
Scorer	PlayersList.FullName
Strike	tblGoalStrikes.gtsDesc
Play	tblGoalEvents.gteDesc
Time	tblGoals.glsTime + ' " ' if tblGoals.glsSTime = 0, tblGoals.glsTime + '+' tblGoals.glsSTime + ' " ' if tblGoals.glsSTime > 0



## 8.10 PenaltiesList view

<b>PenaltiesList</b>	This view provides a list of penalty kick decisions and their outcomes in a football match.
<b>Type</b>	Aggregate
<b>Base Tables</b>	tblPenalties, LineupList, tblFouls, tblPenOutcomes
<b>Field Name</b>	<b>Expression</b>
penaltyID	tblPenalties.penaltyID
Matchup	LineupList.Matchup
Taker	PlayersList.FullName
Foul	tblFouls.foulDesc
Outcome	tblPenOutcomes.poDesc
Time	tblPenalties.penTime + ' "' if tblPenalties.penSTime = 0, tblPenalties.penTime + '+' tblPenalties.penSTime + ' "' if tblPenalties.penSTime > 0

## 8.11 CautionsList view

<b>CautionsList</b>	This view provides a list of yellow-card offenses in a football match.
<b>Type</b>	Aggregate
<b>Base Tables</b>	LineupList, tblOffenses, tblFouls
<b>Field Name</b>	<b>Expression</b>
offenseID	tblLineups.lineupID
Matchup	LineupList.Matchup
Player	LineupList.Player
Foul	tblFouls.foulDesc
Time	tblOffense.ofnsTime + ' "' if tblOffenses.ofnsSTime = 0, tblOffenses.ofnsTime + '+' tblOffenses.ofnsSTime + ' "' if tblOffenses.ofnsSTime > 0

## 8.12 ExpulsionsList view

<b>ExpulsionsList</b>	This view provides a list of second yellow-card offenses or direct red-card offenses in a football match.
<b>Type</b>	Aggregate
<b>Base Tables</b>	LineupList, tblOffenses, tblFouls
<b>Field Name</b>	<b>Expression</b>
lineupID	tblLineups.lineupID
Matchup	LineupList.Matchup
Player	LineupList.Player
Foul	tblFouls.foulDesc
Time	tblOffenses.ofnsTime + ' "' if tblOffenses.ofnsSTime = 0, tblOffenses.ofnsTime + '+' tblOffenses.ofnsSTime + ' "' if tblOffenses.ofnsSTime > 0

### 8.13 InSubList view

<b>InSubList</b>	This view provides a list of players substituted into a football match.
<b>Type</b>	Aggregate
<b>Base Tables</b>	tblInSubstitutions, LineupList
<b>Field Name</b>	<b>Expression</b>
subsID	tblInSubstitutions.subsID
Player	LineupList.Player

### 8.14 OutSubList view

<b>OutSubList</b>	This view provides a list of players substituted out of a football match.
<b>Type</b>	Aggregate
<b>Base Tables</b>	tblOutSubstitutions, LineupList
<b>Field Name</b>	<b>Expression</b>
subsID	tblOutSubstitutions.subsID
Player	LineupList.Player

### 8.15 SubstitutionsList view

<b>SubstitutionsList</b>	This view provides a list of player substitutions in a football match.
<b>Type</b>	Aggregate
<b>Base Tables</b>	LineupList, tblSubstitutions, InSubList, OutSubList
<b>Field Name</b>	<b>Expression</b>
subsID	tblSubstitutions.subsID
Matchup	LineupList.Matchup
InPlayer	InSubList.Player
OutPlayer	OutSubList.Player
Time	tblSubstitutions.subsTime + ' ' ' ' if tblSubstitutions.subsSTime = 0, tblSubstitutions.subsTime + '+' tblSubstitutions.subsSTime + ' ' ' ' if tblSubstitutions.subsSTime > 0

## 8.16 SwitchPosList view

<b>SwitchPosList</b>	This view provides a list of major tactical position changes during a match.
<b>Type</b>	Aggregate
<b>Base Tables</b>	tblSwitchPositions, LineupList, PositionsList
<b>Field Name</b>	<b>Expression</b>
switchID	tblSwitchPositions.subsID
Matchup	MatchList.Matchup
Player	LineupList.Player
OldPosition	LineupList.PositionName
NewPosition	PositionsList.PositionName
Time	tblSwitchPositions.subsTime + ' ' if tblSwitchPositions.subsSTime = 0, tblSwitchPositions.subsTime + '+' tblSwitchPositions.subsSTime + ' ' if tblSwitchPositions.subsSTime > 0