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DB2 Design Assignment

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OTAGO POLYTECHNIC

Project Objectives

Summary of System Requirements

The primary goal of this system is to accurately record information related to sports teams competing in a competition. The end-user of this database needs to input which teams are paired to play each match, the date, time, and location of each match, and the two referees assigned to officiate the match.

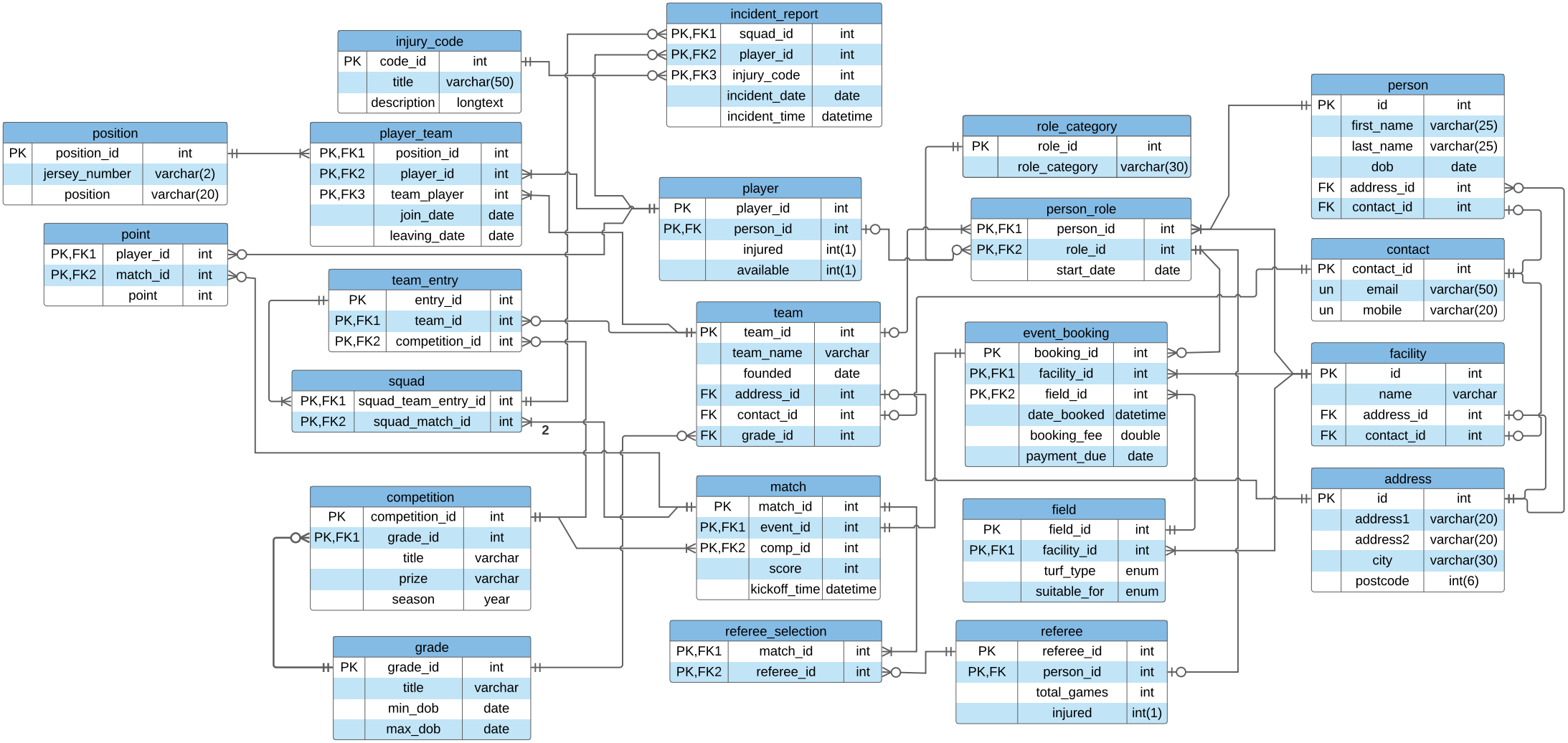
Before each game, players from both teams are selected to be included in a game, either as a player or a reserve. Each player on the field has a jersey number for the position they are playing; each time they score, an entry is to be added to the database for the points scored, the player jersey number, time of the score and the match.

During a match, if a player is injured their position can be refilled with a player from the squad's reserve player pool. This change needs to be tracked in the database so that any point scored by the reserve player are attributed to them and not the player they have replaced.

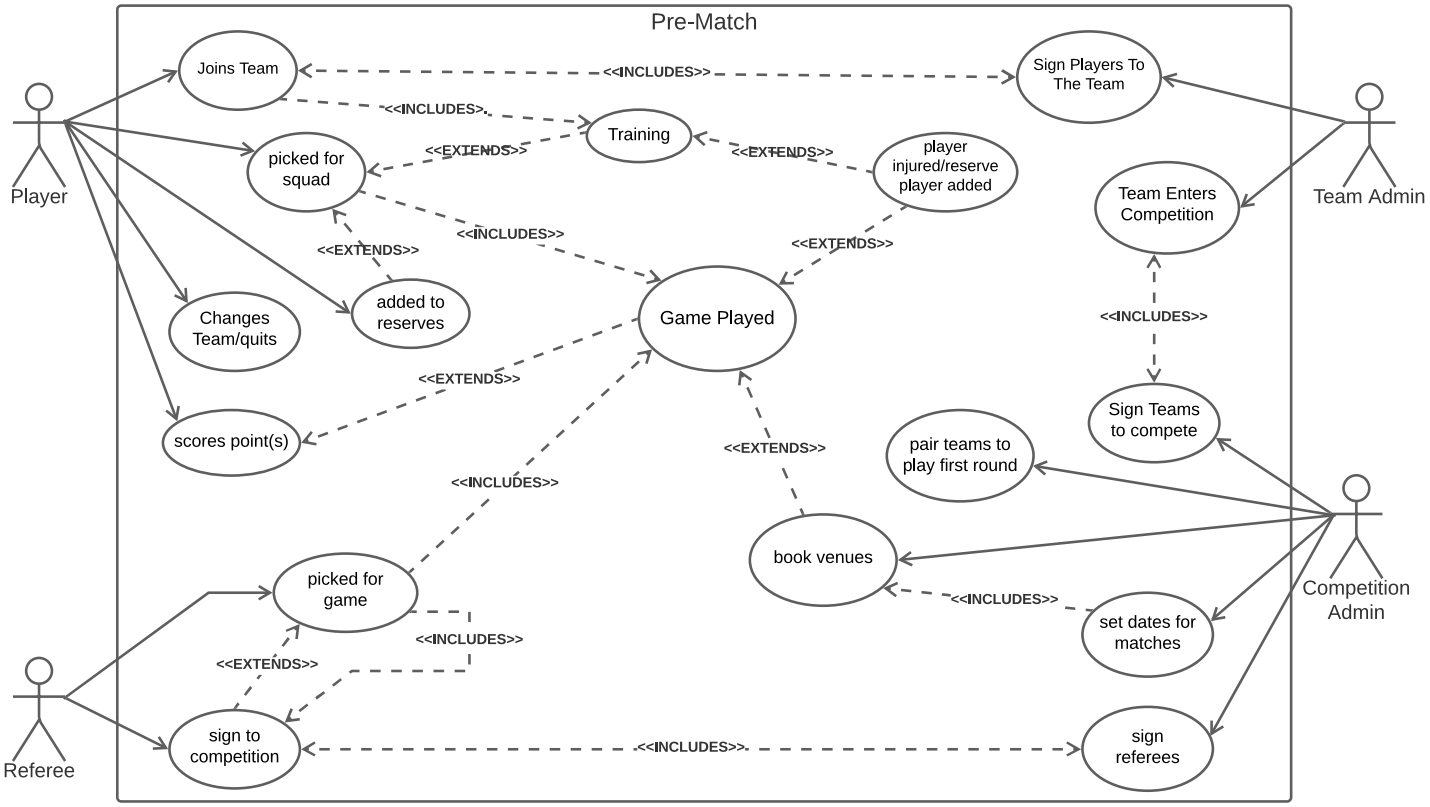
Player or referee injuries must be entered into the database with the injury time, date, match time and location. A competition administrator will update the incident report with appropriate injury code(s) associated with the injury. Injury codes are provided by ACC.

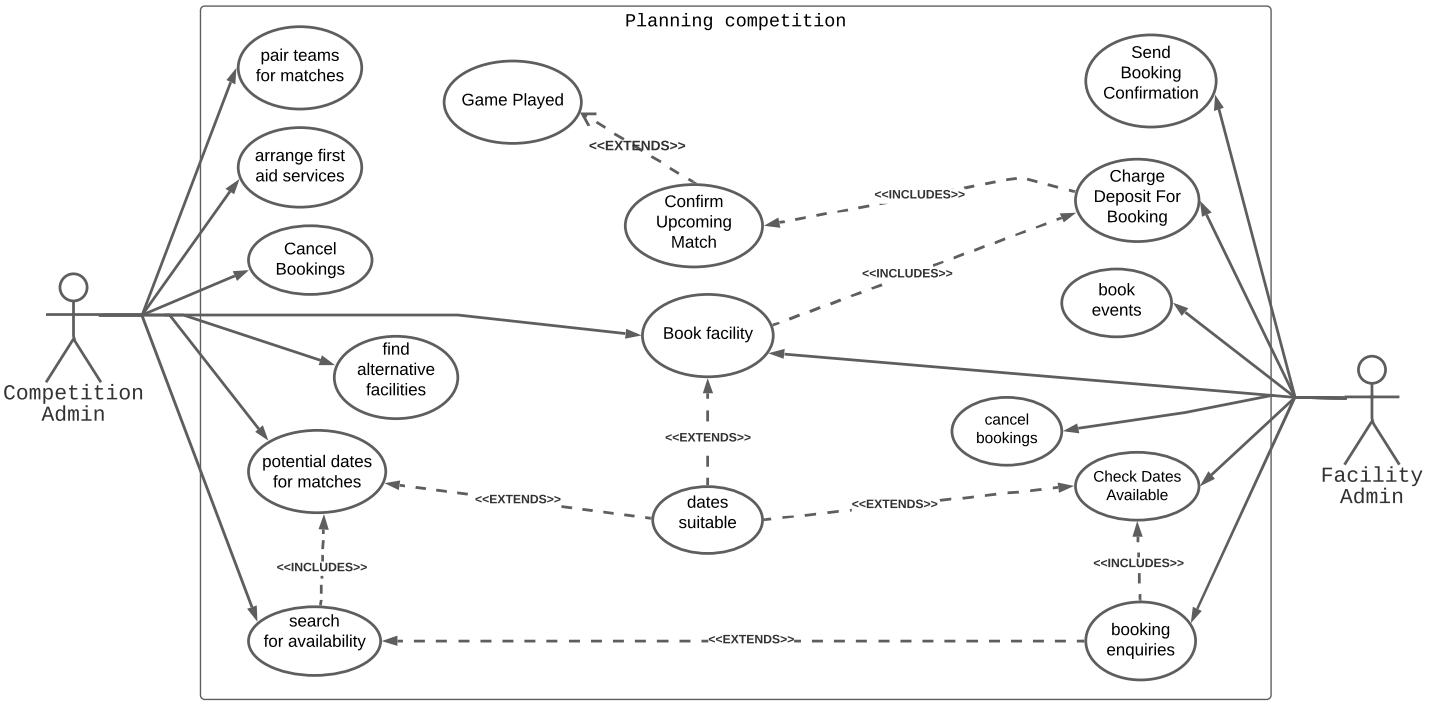
Database Scope

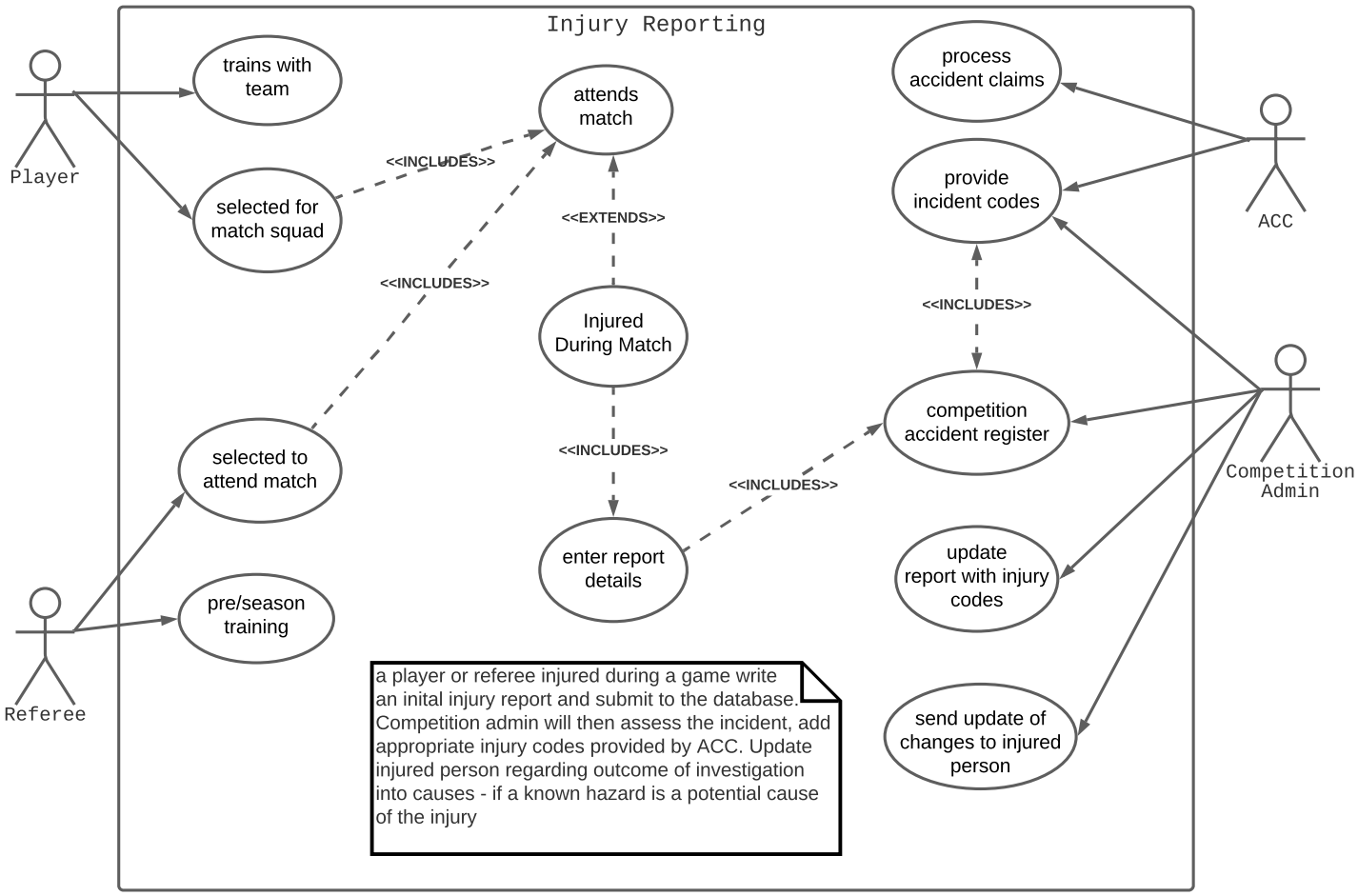
- Recording data for multiple seasons was not a requirement, however, we decided to include a 'year' attribute in the competition table to enable each season of competition to be tracked separately.
- Most sports welcome competitors of all ages, who compete at an age-based level; to allow for this, a 'grade' table been included to allow a competition to run for multiple age groups during each season/year.
- The 'competition admin' role is assumed to have the ability to add injury codes to incident reports, after it is initiated by an injured player or referee.
- Players joining a team or transferring to a new team potentially has contractual issues between player and teams, which are relevant to the competition. The date a player joins and leaves a team is to be entered to the database.


injury_code
PK code_id int
title varchar(50)
description longtext
incident_report
PK,FK1 squad_id int
PK,FK2 player_id int
PK,FK3 injury_code int
incident_date date
incident_time datetime
position
PK position_id int
jersey_number varchar(2)
position varchar(20)
player_team
PK,FK1 position_id int
PK,FK2 player_id int
PK,FK3 team_player int
join_date date
leaving_date date
role_category
PK role_id int
role_category varchar(30)
person
PK id int
first_name varchar(25)
last_name varchar(25)
dob date
FK address_id int
FK contact_id int
player
PK player_id int
PK,FK person_id int
injured int(1)
available int(1)
person_role
PK,FK1 person_id int
PK,FK2 role_id int
start_date date
point
PK,FK1 player_id int
PK,FK2 match_id int
point int
contact
PK contact_id int
un email varchar(50)
un mobile varchar(20)
team_entry
PK entry_id int
PK,FK1 team_id int
PK,FK2 competition_id int
team
PK team_id int
team_name varchar
founded date
FK address_id int
FK contact_id int
FK grade_id int
event_booking
PK booking_id int
PK,FK1 facility_id int
PK,FK2 field_id int
date_booked datetime
booking_fee double
payment_due date
facility
PK id int
name varchar
FK address_id int
FK contact_id int
squad
PK,FK1 squad_team_entry_id int
PK,FK2 squad_match_id int
2
address
PK id int
address1 varchar(20)
address2 varchar(20)
city varchar(30)
postcode int(6)
competition
PK competition_id int
PK,FK1 grade_id int
title varchar
prize varchar
season year
match
PK match_id int
PK,FK1 event_id int
PK,FK2 comp_id int
score int
kickoff_time datetime
field
PK field_id int
PK,FK1 facility_id int
turf_type enum
suitable_for enum
grade
PK grade_id int
title varchar
min_dob date
max_dob date
referee_selection
PK,FK1 match_id int
PK,FK2 referee_id int
referee
PK referee_id int
PK,FK person_id int
total_games int
injured int(1)

Use Cases


Pre-Match
Joins Team
Sign Players To The Team
Training
picked for squad
player injured/reserve player added
Team Enters Competition
Changes Team/quits
added to reserves
Game Played
Sign Teams to compete
scores point(s)
pair teams to play first round
book venues
picked for game
set dates for matches
sign to competition
sign referees
Player
Team Admin
Competition Admin
Referee
<<INCLUDES>>
<<EXTENDS>>


Planning competition
pair teams for matches
Game Played
Send Booking Confirmation
arrange first aid services
Confirm Upcoming Match
Charge Deposit For Booking
Cancel Bookings
book events
Book facility
find alternative facilities
cancel bookings
potential dates for matches
dates suitable
Check Dates Available
search for availability
booking enquiries
Competition Admin
Facility Admin
<<INCLUDES>>
<<EXTENDS>>


Injury Reporting
Player
trains with team
selected for match squad
attends match
<<INCLUDES>>
<<EXTENDS>>
<<INCLUDES>>
Injured During Match
<<INCLUDES>>
selected to attend match
pre/season training
Referee
enter report details
<<INCLUDES>>
process accident claims
provide incident codes
<<INCLUDES>>
competition accident register
update report with injury codes
send update of changes to injured person
ACC
Competition Admin
a player or referee injured during a game write an inital injury report and submit to the database. Competition admin will then assess the incident, add appropriate injury codes provided by ACC. Update injured person regarding outcome of investigation into causes - if a known hazard is a potential cause of the injury

Data Dictionary

person			
Field Key	**Field Name**	**Data Type**	**Description**
PK	id	integer	An ID unique to each person
	first_name	varchar	The persons first name
	last_name	varchar	The persons last name
	dob	date	The persons date of birth
FK	address_id	integer	An ID which refers to the persons address information
FK	contact_id	integer	An ID which refers to the persons contact information

person_role			
Field Key	**Field Name**	**Data Type**	**Description**
PK, FK1	person_id	integer	An ID that references a person
PK, FK2	role_id	integer	An ID that references a role
	start_date	date	The date which the person started the role

role_category			
Field Key	**Field Name**	**Data Type**	**Description**
PK	role_id	integer	An ID unique to each role
	role_category	varchar	The name of the category

address

Field Key	Field Name	Data Type	Description
PK	id	integer	An ID unique to each address
	address1	varchar	First line of the address
	address2	varchar	Second line of the address
	city	varchar	City which the address is located in
	postcode	integer	The post code of the area

contact

Field Key	Field Name	Data Type	Description	Attributes
PK	contact_id	integer	An ID unique to each set of contact information	
UN	email	varchar	A persons contact email	Unique
UN	mobile	varchar	A persons contact mobile	Unique

player

Field Key	Field Name	Data Type	Description
PK	player_id	integer	An ID unique to each player
PK, FK	person_id	integer	An ID which refers to a person
	injured	integer(1)	boolean; Refers to if the player is injured
	available	integer(1)	boolean; Refers to if the player is available to play

Referee

Field Key	Field Name	Data Type	Description
PK	referee_id	integer	An ID unique to each match official
PK, FK	person_id	integer	An ID which references a person
	total_games	integer	The total ammount of games the official has been part of
	injured	integer(1)	boolean; Refers to if the referee is injured

team

Field Key	Field Name	Data Type	Description
PK	team_id	integer	An ID unique to each team
	team_name	varchar	The name of the team
	founded	date	When the team was founded
FK	address_id	integer	An ID which refers to the teams address
FK	contact_id	integer	An ID which refers to the teams contact information
FK	grade_id	integer	An ID which refers to the teams grade

team_entry

Field Key	Field Name	Data Type	Description
PK	entry_id	integer	An ID unique to each entry
PK, FK1	team_id	integer	An ID which refers to the team entering
PK, FK2	competition_id	integer	An ID which refers to the compeition the team is entering

player_team

Field Key	Field Name	Data Type	Description
PK, FK1	position_id	integer	An ID which references a position
PK, FK2	player_id	integer	An ID which references a player
PK, FK3	team_player	integer	An ID which references which team the player plays for
	join_date	date	The date the player joined the team
	leaving_date	date	The date the player leaves the team

referee_selection

Field Key	Field Name	Data Type	Description
PK, FK1	match_id	integer	An ID which refers to a match
PK, FK2	referee_id	integer	An ID which refers to a referee

position

Field Key	Field Name	Data Type	Description
PK	position_id	integer	An ID unique to each position
	jersey_number	varchar(2)	The number on the players jersey
	position	varchar	The name of the position

grade

Field Key	Field Name	Data Type	Description
PK	grade_id	integer	An ID unique to each grade
	title	varchar	The name/title of the grade
	min_dob	date	The minimum year of birth of a player
	max_dob	date	The maximum year of birth of a player

competition

Field Key	Field Name	Data Type	Description
PK	competition_id	integer	An ID unique to each competition
PK,FK1	grade_id	Integer	
	title	varchar	The name/title of the competition
	prize	varchar	The prize(s) for the competition winner(s)
	season	year	

squad

Field Key	Field Name	Data Type	Description
PK, FK1	squad_team_entry_id	integer	An ID which refers to a teams squad entry
PK, FK2	squad_match_id	integer	An ID which refers to the match a squad will be playing

point

Field Key	Field Name	Data Type	Description
PK, FK1	player_id	integer	An ID which refers to a player
PK, FK2	match_id	integer	An ID which refers to a match
	point	integer	A point scored by a player

match

Field Key	Field Name	Data Type	Description
PK	match_id	integer	An ID unique to each match
PK, FK1	event_id	integer	An ID which refers to an event
PK, FK2	comp_id	integer	An ID which refers to a competition
	score	integer	The final score of the match
	kickoff_time	datetime	start time of the match

field

Field Key	Field Name	Data Type	Description
PK	field_id	integer	An ID unique to each field
PK, FK1	factility_id	integer	An ID which refers to the facility the field is located at
	turf_type	enum	What material the ground is made of
	suitable_for	enum	Which sports the field is suitable for

event_booking

Field Key	Field Name	Data Type	Description
PK	booking_id	integer	An ID unique to each booking
PK, FK1	facility_id	integer	An ID which references the facility
PK, FK2	field_id	integer	An ID which references the field
	date_booked	datetime	The date of the event booking
	booking_fee	double	The fee for the booking
	payment_due	date	When the payment is due for the booking

facility

Field Key	Field Name	Data Type	Description
PK	id	integer	An ID unique to each facility
	name	varchar	The name of the facility
FK	address_id	integer	An ID which refers the facilities address
FK	contact_id	integer	An ID which refers the facilities contact information

incident_report

Field Key	Field Name	Data Type	Description
PK, FK1	squad_id	integer	An ID which refers to the players squad
PK, FK2	player_id	integer	An ID which refers to the player
PK, FK3	injury_code	integer	An ID which refers to the acc injury code
	incident_date	date	The date of the incident
	incident_time	datetime	The time of the incident

injury_code

Field Key	Field Name	Data Type	Description
PK	code_id	integer	An ID unique to each injury code
	title	varchar	The name/title of the injury
	description	longtext	A description of the injury