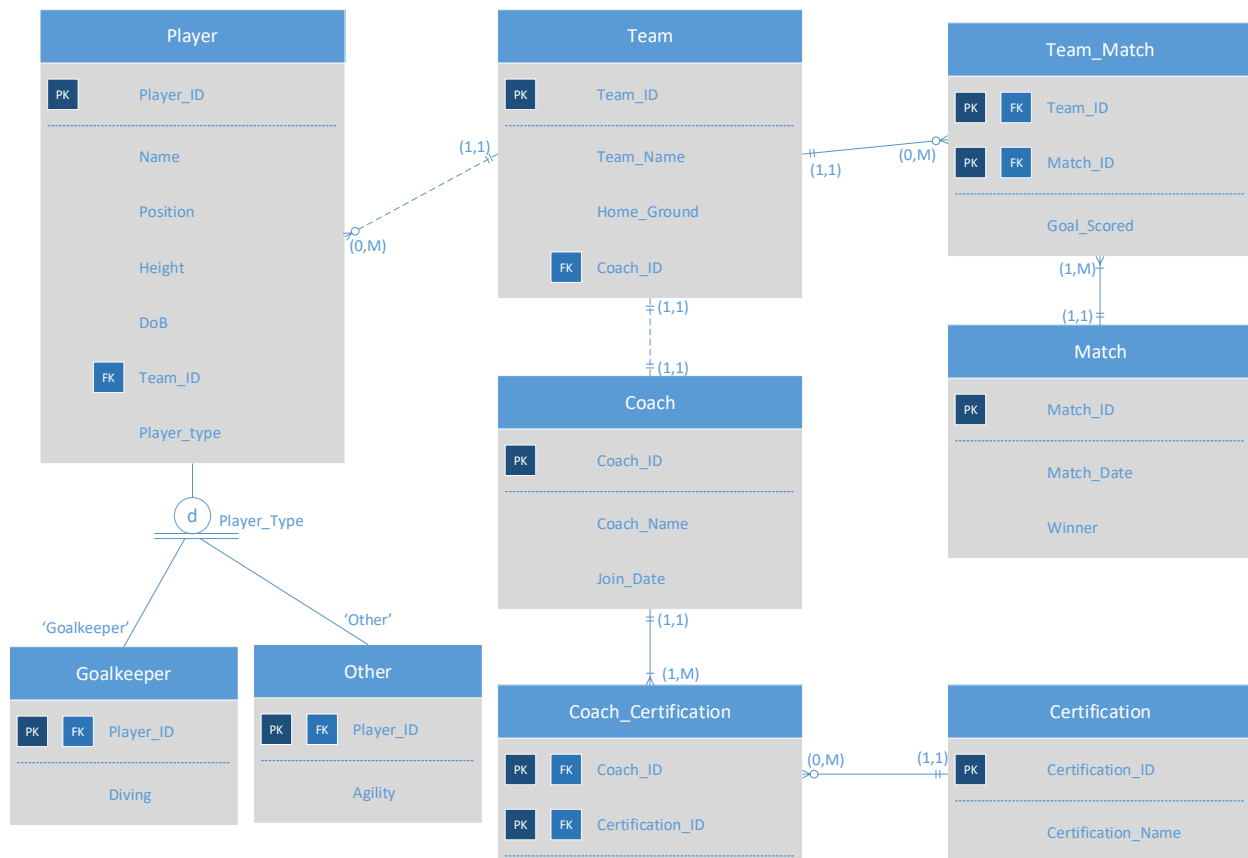# Project Report 2

The following SQL statements were used to create tables and to create constraints. First, I created table with all the constraints except foreign key. After creating all the tables I used Alter command to alter table and added Foreign key constrains in the tables where it was required.

```
CREATE TABLE PLAYER
(
Player_ID NUMBER(4),
Player_Name Varchar2(25),
Player_Position char(2),
Height NUMBER(4,1),
DoB Date,
Team_ID Number(4),
Player_Type Char(10),

CONSTRAINT Player_PlayerID_PK Primary KEY (Player_ID),
CONSTRAINT Player_Type_ck CHECK (Player_Type IN ('Goalkeeper', 'Other'))

);

CREATE TABLE TEAM
```

```
(
Team_ID Number(4),
Team_Name Varchar2(25),
Home_Ground VARCHAR2(25),
Coach_ID Number(4) NOT NULL,

CONSTRAINT Team_TeamID_PK Primary KEY (Team_ID),
CONSTRAINT Team_CoachID_PK UNIQUE (Coach_ID)


);

CREATE TABLE TEAM_MATCH
(
Team_ID Number(4),
Match_ID Number(4),
Goal_Scored Number(2) DEFAULT 0 NOT NULL,

CONSTRAINT Team_Match_PK Primary KEY (Team_ID, Match_ID)

);


CREATE TABLE MATCH
(
Match_ID Number(4),
Winner Varchar2(25),
Match_Date Date,

CONSTRAINT Match_MatchID_PK Primary KEY (Match_ID)


);

CREATE TABLE COACH
(
Coach_ID Number(4),
Coach_Name Varchar2(25),
Join_Date Date,

CONSTRAINT Coach_CoachID_PK Primary KEY (Coach_ID)

);

CREATE TABLE COACH_CERTIFICATION
(
Coach_ID Number(4),
CERTIFICATION_ID Number(4),
```

```sql
CONSTRAINT Coach_Certification_PK Primary KEY (Coach_ID, CERTIFICATION_ID)

);


CREATE TABLE CERTIFICATION
(
CERTIFICATION_ID Number(4),
CERTIFICATION_Name Varchar2(25),

CONSTRAINT Certification_CertificationID_PK Primary KEY (CERTIFICATION_ID)

);


CREATE TABLE GOALKEEPER
(
Player_ID NUMBER(4),
Diving Number(2),

CONSTRAINT GOALKEEPER_PlayerID_PK Primary KEY (Player_ID)

);

CREATE TABLE OTHER
(
Player_ID NUMBER(4),
Agility Number(2),

CONSTRAINT OTHER_PlayerID_PK Primary KEY (Player_ID)

);


-- ADDING FOREIGN KEYS

--Players
ALTER TABLE PLAYER
   ADD CONSTRAINT Player_TeamID_FK FOREIGN KEY (Team_ID)
     REFERENCES TEAM (Team_ID);

--Team
ALTER TABLE TEAM
   ADD CONSTRAINT Team_CoachID_FK FOREIGN KEY (Coach_ID)
     REFERENCES COACH (Coach_ID);

--Team_Match
ALTER TABLE TEAM_MATCH
   ADD CONSTRAINT Team_Match_TeamID_FK FOREIGN KEY (Team_ID)
```

```
          REFERENCES TEAM (Team_ID);

ALTER TABLE TEAM_MATCH
   ADD CONSTRAINT Team_Match_MatchID_FK FOREIGN KEY (Match_ID)
      REFERENCES MATCH (Match_ID);


--Coach_Certification
ALTER TABLE Coach_Certification
   ADD CONSTRAINT Coach_Certification_CoachID_FK FOREIGN KEY (Coach_ID)
      REFERENCES COACH (Coach_ID);


ALTER TABLE Coach_Certification
   ADD CONSTRAINT Coach_Certification_CertificationID_FK FOREIGN KEY (Certification_ID)
      REFERENCES CERTIFICATION (Certification_ID);


--Goalkeeper
ALTER TABLE Goalkeeper
   ADD CONSTRAINT Goalkeeper_PlayerID_FK FOREIGN KEY (Player_ID)
      REFERENCES PLAYER (Player_ID);


--Other
ALTER TABLE Other
   ADD CONSTRAINT Other_PlayerID_FK FOREIGN KEY (Player_ID)
      REFERENCES PLAYER (Player_ID);
```
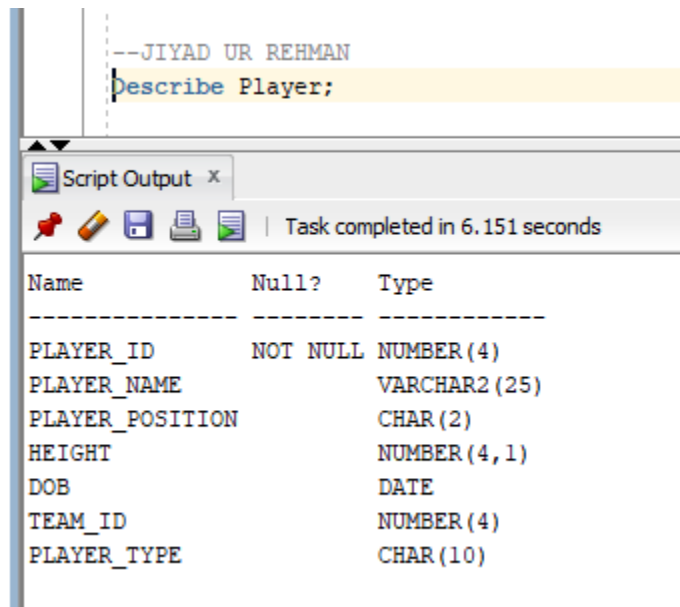
Tables and its structure:
PLAYER

```sql
Describe Player;
Select * from user_constraints where table_name='PLAYER';
```

	OWNER	CONSTRAINT_NAME	CONSTRAINT_TYPE	TABLE_NAME	SEARCH_CONDITION	SEARCH_CONDITION_VC	R_OWNER	R_CONSTRAINT_NAME	DELETE_RULE	STATUS	DEFERRABLE	DEFERRED	VALIDATED	GENERATED
1	JREHMAN2	PLAYER_TYPE_CK	C	PLAYER	Player_Type IN ('Goalkeeper', 'Other')	Player_Type IN ('Goalkeeper', 'Other')	(null)	(null)	(null)	ENABLED	NOT DEFERRABLE	IMMEDIATE	VALIDATED	USER NAME
2	JREHMAN2	PLAYER_PLAYERID_PK	P	PLAYER	(null)	(null)	(null)	(null)	(null)	ENABLED	NOT DEFERRABLE	IMMEDIATE	VALIDATED	USER NAME
3	JREHMAN2	PLAYER_TEAMID_FK	R	PLAYER	(null)	(null)	JREHMAN2	TEAM_TEAMID_PK	NO ACTION	ENABLED	NOT DEFERRABLE	IMMEDIATE	VALIDATED	USER NAME

TEAM

```sql
Describe Team;
Select * from user_constraints where table_name='Team';
```

```
Name          Null?     Type
----------    --------  -----------
TEAM_ID       NOT NULL  NUMBER(4)
TEAM_NAME               VARCHAR2(25)
HOME_GROUND            VARCHAR2(25)
COACH_ID      NOT NULL  NUMBER(4)
```

```sql
Describe Team;
Select * from user_constraints where table_name='TEAM';
```

	OWNER	CONSTRAINT_NAME	CONSTRAINT_TYPE	TABLE_NAME	SEARCH_CONDITION	SEARCH_CONDITION_VC	R_OWNER	R_CONSTRAINT_NAME	DELETE_RULE	STATUS	DEFERRABLE	DEFERRED	VALIDATED	GENERATED	BAD	RELY	LAST_CHANGE
1	JREHMAN2	SYS_C00119477	C	TEAM	"COACH_ID" IS NOT NULL	"COACH_ID" IS NOT NULL	(null)	(null)	(null)	ENABLED	NOT DEFERRABLE	IMMEDIATE	VALIDATED	GENERATED NAME	(null)	(null)	26-OCT-19
2	JREHMAN2	TEAM_TEAMID_PK	P	TEAM	(null)	(null)	(null)	(null)	(null)	ENABLED	NOT DEFERRABLE	IMMEDIATE	VALIDATED	USER NAME	(null)	(null)	26-OCT-19
3	JREHMAN2	TEAM_COACHID_UK	U	TEAM	(null)	(null)	(null)	(null)	(null)	ENABLED	NOT DEFERRABLE	IMMEDIATE	VALIDATED	USER NAME	(null)	(null)	26-OCT-19
4	JREHMAN2	TEAM_COACHID_FK	R	TEAM	(null)	(null)	JREHMAN2	COACH_COACHID_PK	NO ACTION	ENABLED	NOT DEFERRABLE	IMMEDIATE	VALIDATED	USER NAME	(null)	(null)	26-OCT-19

TEAM_MATCH

```sql
Describe Team_Match;
Select * from user_constraints where table_name='TEAM';
```

```
Name          Null?     Type
----------    --------  ---------
TEAM_ID       NOT NULL  NUMBER(4)
MATCH_ID      NOT NULL  NUMBER(4)
GOAL_SCORED   NOT NULL  NUMBER(2)
```

```
Describe Team_Match;
Select * from user_constraints where table_name='TEAM_MATCH';
```

Script Output × Query Result ×

SQL | All Rows Fetched: 4 in 3.173 seconds

	OWNER	CONSTRAINT_NAME	CONSTRAINT_TYPE	TABLE_NAME	SEARCH_CONDITION	SEARCH_CONDITION_VC	R_OWNER	R_CONSTRAINT_NAME	DELETE_RULE	STATUS	DEFERRABLE	DEFERRED	VALIDATED	GENERATED	BAD	RELY	LAS
1	JREHMAN2	SYS_C00119480	C	TEAM_MATCH	"GOAL_SCORED" IS NOT NULL	"GOAL_SCORED" IS NOT NULL	(null)	(null)	(null)	ENABLED	NOT DEFERRABLE	IMMEDIATE	VALIDATED	GENERATED NAME	(null)	(null)	26-O(
2	JREHMAN2	TEAM_MATCH_PK	P	TEAM_MATCH	(null)	(null)	(null)	(null)	(null)	ENABLED	NOT DEFERRABLE	IMMEDIATE	VALIDATED	USER NAME	(null)	(null)	26-O(
3	JREHMAN2	TEAM_MATCH_TEAMID_FK	R	TEAM_MATCH	(null)	(null)	JREHMAN2	TEAM_TEAMID_PK	NO ACTION	ENABLED	NOT DEFERRABLE	IMMEDIATE	VALIDATED	USER NAME	(null)	(null)	26-O(
4	JREHMAN2	TEAM_MATCH_MATCHID_FK	R	TEAM_MATCH	(null)	(null)	JREHMAN2	MATCH_MATCHID_PK	NO ACTION	ENABLED	NOT DEFERRABLE	IMMEDIATE	VALIDATED	USER NAME	(null)	(null)	26-O(

COACH

```
Describe coach;
Select * from user_constraints where table_name='COACH';
```

Script Output × Query Result ×

Task completed in 2.554 seconds

```
GOAL_SCORED NOT NULL NUMBER(2)
Name          Null?    Type
---------- -------- ------------
COACH_ID    NOT NULL NUMBER(4)
COACH_NAME           VARCHAR2(25)
JOIN_DATE            DATE
```

```
Describe coach;
Select * from user_constraints where table_name='COACH';
```

Script Output × Query Result ×

SQL | All Rows Fetched: 1 in 4.099 seconds

	OWNER	CONSTRAINT_NAME	CONSTRAINT_TYPE	TABLE_NAME	SEARCH_CONDITION	SEARCH_CONDITION_VC	R_OWNER	R_CONSTRAINT_NAME	DELETE_RULE	STATUS	DEFERRABLE	DEFERRED	VALIDATED	GENERATED	BAD	RELY	LAST_CHANGE	INDEX_OWNER	
1	JREHMAN2	COACH_COACHID_PK	P	COACH	(null)	(null)	(null)	(null)	(null)	ENABLED	NOT DEFERRABLE	IMMEDIATE	VALIDATED	USER NAME	(null)	(null)	26-OCT-19	JREHMAN2	CO

MATCH

```
Describe Match;
Select * from user_constraints where table_name='MATCH';
```

Script Output × Query Result ×

Task completed in 2.927 seconds

```
JOIN_DATE            DATE
Name          Null?    Type
---------- -------- ------------
MATCH_ID    NOT NULL NUMBER(4)
WINNER               VARCHAR2(25)
MATCH_DATE           DATE
```

```
Describe Match;
Select * from user_constraints where table_name='MATCH';
```

Script Output × | Query Result ×

SQL | All Rows Fetched: 1 in 4.216 seconds

OWNER	CONSTRAINT_NAME	CONSTRAINT_TYPE	TABLE_NAME	SEARCH_CONDITION	SEARCH_CONDITION_VC	R_OWNER	R_CONSTRAINT_NAME	DELETE_RULE	STATUS	DEFERRABLE	DEFERRED	VALIDATED	GENERATED	BAD	RELY	LAST_CHANGE	INDEX_OWNER	
1 JREHMAN2	MATCH_MATCHID_PK	P	MATCH	(null)	(null)	(null)	(null)		ENABLED	NOT DEFERRABLE	IMMEDIATE	VALIDATED	USER NAME	(null)	(null)	26-OCT-19	JREHMAN2	MA

COACH_CERTIFICATION

```
Describe coach_certification;
Select * from user_constraints where table_name='COACH_CERTIFICATION';
```

Script Output × | Query Result ×

Task completed in 2.961 seconds

```
Name              Null?     Type
---------------   --------  ---------
COACH_ID          NOT NULL  NUMBER(4)
CERTIFICATION_ID  NOT NULL  NUMBER(4)
```

```
Describe coach_certification;
Select * from user_constraints where table_name='COACH_CERTIFICATION';
```

Script Output × | Query Result ×

SQL | All Rows Fetched: 3 in 4.102 seconds

OWNER	CONSTRAINT_NAME	CONSTRAINT_TYPE	TABLE_NAME	SEARCH_CONDITION	SEARCH_CONDITION_VC	R_OWNER	R_CONSTRAINT_NAME	DELETE_RULE	STATUS	DEFERRABLE	DEFERRED	VALIDATED	GENERATE
1 JREHMAN2	COACH_CERTIFICATION_PK	P	COACH_CERTIFICATION	(null)	(null)	(null)	(null)	(null)	ENABLED	NOT DEFERRABLE	IMMEDIATE	VALIDATED	USER NAME
2 JREHMAN2	COACH_CERTIFICATION_COACHID_FK	R	COACH_CERTIFICATION	(null)	(null)	JREHMAN2	COACH_COACHID_PK	NO ACTION	ENABLED	NOT DEFERRABLE	IMMEDIATE	VALIDATED	USER NAME
3 JREHMAN2	COACH_CERTIFICATION_CERTIFICATIONID_FK	R	COACH_CERTIFICATION	(null)	(null)	JREHMAN2	CERTIFICATION_CERTIFICATIONID_PK	NO ACTION	ENABLED	NOT DEFERRABLE	IMMEDIATE	VALIDATED	USER NAME

CERTIFICATION

```
Describe certification;
Select * from user_constraints where table_name='CERTIFICATION';
```

Script Output × | Query Result ×

Task completed in 2.47 seconds

```
Name                Null?     Type
---------------     --------  ------------
CERTIFICATION_ID    NOT NULL  NUMBER(4)
CERTIFICATION_NAME            VARCHAR2(25)
```

```
--JIYAD UR REHMAN
Describe certification;
Select * from user_constraints where table_name='CERTIFICATION';
```

Script Output × | Query Result ×

SQL | All Rows Fetched: 1 in 3.742 seconds

	OWNER	CONSTRAINT_NAME	CONSTRAINT_TYPE	TABLE_NAME	SEARCH_CONDITION	SEARCH_CONDITION_VC	R_OWNER	R_CONSTRAINT_NAME	DELETE_RULE	STATUS	DEFERRABLE	DEFERRED	VALIDATED	GENERATED	BAD	RELY	LAST_CHAN
1	JREHMAN2	CERTIFICATION_CERTIFICATIONID_PK	P		CERTIFICATION	(null)	(null)	(null)	(null)	(null)	ENABLED	NOT DEFERRABLE	IMMEDIATE	VALIDATED	USER NAME	(null)	(null)	26-OCT-19

GOALKEEPER

```
--JIYAD UR REHMAN
Describe Goalkeeper;
Select * from user_constraints where table_name='GOALKEEPER';
```

Script Output × | Query Result ×

Task completed in 2.74 seconds

```
Name        Null?     Type
--------- -------- ----------
PLAYER_ID NOT NULL NUMBER(4)
DIVING             NUMBER(2)
```

```
--JIYAD UR REHMAN
Describe Goalkeeper;
Select * from user_constraints where table_name='GOALKEEPER';
```

Script Output × | Query Result ×

SQL | All Rows Fetched: 2 in 0.067 seconds

	OWNER	CONSTRAINT_NAME	CONSTRAINT_TYPE	TABLE_NAME	SEARCH_CONDITION	SEARCH_CONDITION_VC	R_OWNER	R_CONSTRAINT_NAME	DELETE_RULE	STATUS	DEFERRABLE	DEFERRED	VALIDATED	GENERATED	BAD	RELY	LAST_CHANGE	INDEX_OW
1	JREHMAN2	GOALKEEPER_PLAYERID_PK	P		GOALKEEPER	(null)	(null)	(null)	(null)	(null)	ENABLED	NOT DEFERRABLE	IMMEDIATE	VALIDATED	USER NAME	(null)	(null)	26-OCT-19	JREHMAN2
2	JREHMAN2	GOALKEEPER_PLAYERID_FK	R		GOALKEEPER	(null)	(null)	JREHMAN2	PLAYER_PLAYERID_PK	NO ACTION	ENABLED	NOT DEFERRABLE	IMMEDIATE	VALIDATED	USER NAME	(null)	(null)	26-OCT-19	(null)

OTHER

```
--JIYAD UR REHMAN
Describe Other;
Select * from user_constraints where table_name='OTHER';
```

Script Output × | Query Result ×

Task completed in 2.509 seconds

```
Name        Null?     Type
--------- -------- ----------
PLAYER_ID NOT NULL NUMBER(4)
AGILITY            NUMBER(2)
```

```
--JIYAD UR REHMAN
Describe Other;
Select * from user_constraints where table_name='OTHER';
```

Script Output × | Query Result ×

SQL | All Rows Fetched: 2 in 0.108 seconds

	OWNER	CONSTRAINT_NAME	CONSTRAINT_TYPE	TABLE_NAME	SEARCH_CONDITION	SEARCH_CONDITION_VC	R_OWNER	R_CONSTRAINT_NAME	DELETE_RULE	STATUS	DEFERRABLE	DEFERRED	VALIDATED	GENERATED	BAD	RELY	LAST_CHANGE	INDEX_OWNER
1	JREHMAN2	OTHER_PLAYERID_PK	P		OTHER	(null)	(null)	(null)	(null)	(null)	ENABLED	NOT DEFERRABLE	IMMEDIATE	VALIDATED	USER NAME	(null)	(null)	26-OCT-19	JREHMAN2
2	JREHMAN2	OTHER_PLAYERID_FK	R		OTHER	(null)	(null)	JREHMAN2	PLAYER_PLAYERID_PK	NO ACTION	ENABLED	NOT DEFERRABLE	IMMEDIATE	VALIDATED	USER NAME	(null)	(null)	26-OCT-19	(null)