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MSC Data Science Sem 2

Case Study :- Advance SQL

SPORTS MANAGEMENT SYSTEM

Creating Manager Table

create table Manager

```
(  
    m_id varchar2(5) primary key,  
    m_name varchar2(35) not null,  
    m_phoneno number(10) not null unique,  
    m_addr varchar2(35) not null  
);
```

Inserting values into Manager Table

```
insert into Manager values('M001','Anil Patil',7885365848,'Mumbai');  
insert into Manager values('M002','Vikram Rathwad',9785365848,'Delhi');  
insert into Manager values('M003','Nitin Patel',9985365848,'Chennai');  
insert into Manager values('M004','T Dilip',8945365848,'Kolkata');  
insert into Manager values('M005','Soham Desai',7025365848,'Haryana');  
insert into Manager values('M006','Ankit Singh',9005365848,'Ahmedabad');
```

Selecting all the Values from Manager Table

select * from Manager;

M_ID	M_NAME	M_PHONENO	M_ADDR
M001	Anil Patil	7885365848	Mumbai
M002	Vikram Rathwad	9785365848	Delhi
M003	Nitin Patel	9985365848	Chennai
M004	T Dilip	8945365848	Kolkata
M005	Soham Desai	7025365848	Haryana
M006	Ankit Singh	9005365848	Ahmedabad

Creating Coach Table

```
create table Coach(  
  c_id varchar(5) primary key,  
  c_name varchar(50) not null,  
  m_id varchar2(5) references Manager(m_id),  
  sports varchar(50) not null,  
  c_phone_no number(10) not null unique,  
  year_of_exp number(3),  
  c_addr varchar(40)  
);
```

Inserting values into Coach Table

```
insert into Coach values('C001','Mr. Rahul  
Dravid','M001','Cricket',7239367897,20,'Mumbai');
```

```
insert into Coach values('C002','Mr. Datta  
Gaekwad','M002','Cricket',9265267390,10,'Delhi');
```

```
insert into Coach values('C003','Mr. Ashok  
Mankad','M003','Football',7493267893,12,'Chennai');
```

```
insert into Coach values('C004','Mr. Sandeep  
Patil','M004','Football',9226567897,30,'Kolkata');
```

```
insert into Coach values('C005','Mr. Greg  
Chappell','M005','Hockey',9783567690,15,'Haryana');
```

```
insert into Coach values('C006','Mr. Ravi  
Shastri','M006','Hockey',8356567822,9,'Ahmedabad');
```

Selecting all the Values from Manager Table

```
select * from Coach;
```

C_ID	C_NAME	M_ID	SPORTS	C_PHONE_NO	YEAR_OF_EXP	C_ADDR
C001	Mr. Rahul Dravid	M001	Cricket	7239367897	20	Mumbai
C002	Mr. Datta Gaekwad	M002	Cricket	9265267390	10	Delhi
C003	Mr. Ashok Mankad	M003	Football	7493267893	12	Chennai
C004	Mr. Sandeep Patil	M004	Football	9226567897	30	Kolkata
C005	Mr. Greg Chappell	M005	Hockey	9783567690	15	Haryana
C006	Mr. Ravi Shastri	M006	Hockey	8356567822	9	Ahmedabad

Creating Team Table

```
create table Team(  
    t_id varchar(5) primary key,  
    c_id varchar(5) references Coach(c_id),  
    sports varchar(40) not null ,  
    t_name varchar(50) not null unique,  
    no_of_players number(3) not null,  
    no_of_matches_won number(5) not null  
);
```

Inserting values into Manager Table

```
insert into Team values('T001','C001','Cricket','Mighty Lions',11,10);  
insert into Team values('T002','C002','Cricket','Flying Eagles',11,8);  
insert into Team values('T003','C003','Football','Power Hitters',11,20);  
insert into Team values('T004','C004','Football','Rebel Raiders',11,16);  
insert into Team values('T005','C005','Hockey','Savage Sharks',11,22);  
insert into Team values('T006','C006','Hockey','Blazing Bulls',11,19);
```

Selecting all the Values from Manager Table

select * from Team;

T_ID	C_ID	SPORTS	T_NAME	NO_OF_PLAYERS	NO_OF_MATCHES_WON
T001	C001	Cricket	Mighty Lions	11	10
T002	C002	Cricket	Flying Eagles	11	8
T003	C003	Football	Power Hitters	11	20
T004	C004	Football	Rebel Raiders	11	16
T005	C005	Hockey	Savage Sharks	11	22
T006	C006	Hockey	Blazing Bulls	11	19

Creating Matches Table

create table Matches

```
(  
    mat_id varchar2(5)primary key,  
    mat_name varchar2(40)not null,  
    mat_venue varchar2(35)not null,  
    win_t varchar2(5) references Team(t_id),  
    t_1 varchar2(5) references Team(t_id),  
    t_2 varchar2(5) references Team(t_id),  
    mat_date date , manager_id varchar2(5) references Manager(m_id)  
);
```

Inserting values into Matches Table

```
insert into Matches values('MT001','Hockey Cup','Haryana','T006','T005','T006','10 Oct  
2021','M005');
```

```
insert into Matches values('MT002','IPL','Lucknow','T002','T001','T002','22 Nov 2021','M001');
```

```
insert into Matches values('MT003','Football Cup','Kochi','T003','T003','T004','01 Dec 2021','M003');
```

```
insert into Matches values('MT004','Hockey Cup','Kolkata','T006','T005','T006','11 Oct 2022','M006');
```

```
insert into Matches values('MT005','IPL','Chennai','T002','T001','T002','10 Nov 2022','M002');
```

```
insert into Matches values('MT006','Football Cup','Mumbai','T003','T003','T004','10 Dec 2022','M004');
```

```
insert into Matches values('MT007','Hockey Cup','Delhi','T005','T005','T006','01 Oct 2023','M005');
```

```
insert into Matches values('MT008','IPL','Mumbai','T001','T001','T002','05 Nov 2023','M001');
```

```
insert into Matches values('MT009','Football Cup','Ahemdabad','T004','T003','T004','05 Dec 2023','M003');
```

Selecting all the Values from MatchesTable

```
select * from Matches;
```

MAT_ID	MAT_NAME	MAT_VENUE	WIN_T	T_1	T_2	MAT_DATE	MANAGER_ID
MT001	Hockey Cup	Haryana	T006	T005	T006	10-OCT-21	M005
MT002	IPL	Lucknow	T002	T001	T002	22-NOV-21	M001
MT003	Football Cup	Kochi	T003	T003	T004	01-DEC-21	M003
MT004	Hockey Cup	Kolkata	T006	T005	T006	11-OCT-22	M006
MT005	IPL	Chennai	T002	T001	T002	10-NOV-22	M002
MT006	Football Cup	Mumbai	T003	T003	T004	10-DEC-22	M004
MT007	Hockey Cup	Delhi	T005	T005	T006	01-OCT-23	M005
MT008	IPL	Mumbai	T001	T001	T002	05-NOV-23	M001
MT009	Football Cup	Ahemdabad	T004	T003	T004	05-DEC-23	M003

Creating marketingCampaign Table

```
create table marketingCampaign
(
    m_c_id varchar2(10) primary key,
    sponser varchar2(50) not null,
    advertisement varchar2(150),
    m_id varchar2(5) references Manager(m_id),
    t_id varchar(5) references Team(t_id)
);
```

Inserting values into marketingCampaign Table

```
insert into marketingCampaign values('M_C01','SBI Life','Television,News
paper,Internet,Radio,hoardings','M001','T001');
```

```
insert into marketingCampaign values('M_C02','Dream11','Television,News
paper,Internet,Radio,hoardings','M002','T002');
```

```
insert into marketingCampaign values('M_C03','Boat','Television,News
paper,Internet,Radio,hoardings','M003','T003');
```

```
insert into marketingCampaign values('M_C04','Adidas','Television,News
paper,Internet,Radio,hoardings','M004','T004');
```

```
insert into marketingCampaign values('M_C05','Sony','Television,News
paper,Internet,Radio,hoardings','M005','T005');
```

```
insert into marketingCampaign values('M_C06','Amul','Television,News
paper,Internet,Radio,hoardings','M006','T006');
```


Selecting all the Values from marketingCampaign Table

```
select * from marketingCampaign;
```

M_C_ID	SPONSER	ADVERTISEMENT	M_ID	T_ID
M_C01	SBI Life	Television,News paper,Internet,Radio,hoardings	M001	T001
M_C02	Dream11	Television,News paper,Internet,Radio,hoardings	M002	T002
M_C03	Boat	Television,News paper,Internet,Radio,hoardings	M003	T003
M_C04	Adidas	Television,News paper,Internet,Radio,hoardings	M004	T004
M_C05	Sony	Television,News paper,Internet,Radio,hoardings	M005	T005
M_C06	Amul	Television,News paper,Internet,Radio,hoardings	M006	T006

Creating Players Table

```
create table Players(  
p_id varchar(5) primary key,  
p_name varchar(40) not null,  
p_addr varchar(35) not null,  
p_phoneno char(10) not null unique,  
p_postition varchar(40) not null,  
p_dob date not null,  
p_age number(3) not null,  
t_id varchar(5) references Team(t_id)  
);
```

Inserting values into Players Table

```
insert into Players values('P0001','Ram Sharma','Mumbai','8014579812','Captain','20 Jan 2004',19,'T001');
```

```
insert into Players values('P0002','Rohit Kumar','Mumbai','7052492186','WicketKeeper','13 Feb 2003',20,'T001');
```

```
insert into Players values('P0003','Bipin Pal','Mumbai','9035648721','Batsman','06 Apr 2002',21,'T001');
```

```
insert into Players values('P0004','Chandra Shah','Mumbai','9867235402','Bowler','17 Jul 2000',23,'T001');
```

```
insert into Players values('P0005','Chetan Gade','Mumbai','9467328132','Bowler','22 Sep 1999',24,'T001');
```

```
insert into Players values('P0006','Saurav Mehta','Mumbai','9689453210','Batsman','08 Oct 1998',25,'T001');
```

```
insert into Players values('P0007','Ajit Pawar','Mumbai','7890451239','Batsman','12 Nov 1997',26,'T001');
```

```
insert into Players values('P0008','Satish Shah','Mumbai','8754021321','Bowler','15 Dec 1996',27,'T001');
```

```
insert into Players values('P0009','Chiraj Gada','Mumbai','9731249067','Batsman','19 Mar 1995',28,'T001');
```

```
insert into Players values('P0010','Sukhvinder Singh','Mumbai','8093276481','All rounder','23 May 1994',29,'T001');
```

```
insert into Players values('P0011','Jayesh Lamhe','Mumbai','9079435128','All rounder','25 Jun 1993',30,'T001');
```

```
insert into Players values('P0012','Ajay Kumar','Delhi','7542136092','Captain','23 Feb 2004',19,'T002');
```

```
insert into Players values('P0013','Mohsin Khan','Delhi','8205492186','WicketKeeper','15 Jan 2003',20,'T002');
```

insert into Players values('P0014','Suresh Oberoi','Delhi','9035643801','Batsman','09 May 2002',21,'T002');

insert into Players values('P0015','Jatin Shah','Delhi','9867865402','Bowler','21 Jun 2000',23,'T002');

insert into Players values('P0016','Sanjay Kapoor','Delhi','7034328132','Bowler','24 Aug 1999',24,'T002');

insert into Players values('P0017','Tofil Shaikh','Delhi','9056453210','Batsman','10 Nov 1998',25,'T002');

insert into Players values('P0018','Karan Dehdia','Delhi','7890459123','Batsman','11 Sep 1997',26,'T002');

insert into Players values('P0019','Altat Millwala','Delhi','8027961321','Bowler','19 Jul 1996',27,'T002');

insert into Players values('P0020','Mohammed Gafar','Delhi','8731242067','Batsman','25 Jan 1995',28,'T002');

insert into Players values('P0021','Gurpal Singh','Delhi','9245276481','All rounder','29 Oct 1994',29,'T002');

insert into Players values('P0022','Kalpesh Shah','Delhi','9034797128','All rounder','15 Apr 1993',30,'T002');

insert into Players values('P0023','Suresh Arya','Chennai','8065136092','Captain','21 Feb 2004',19,'T003');

insert into Players values('P0024','Babu Prasad','Chennai','8205499712','GoalKeeper','17 Jan 2003',20,'T003');

insert into Players values('P0025','Irfan Azad','Chennai','9079343801','Forward','10 May 2002',21,'T003');

insert into Players values('P0026','Unni Balakrishnan','Chennai','8043865402','Forward','21 Jun 2000',23,'T003');

insert into Players values('P0027','Tushaar Kapoor','Chennai','7034323802','Forward','27 Aug 1999',24,'T003');

insert into Players values('P0028','Imtiyaz Shaikh','Chennai','8743453210','Midfielder','29 Nov 1998',25,T003');

insert into Players values('P0029','Kalpesh Goel','Chennai','7899042123','Midfielder','19 Sep 1997',26,T003');

insert into Players values('P0030','Shankar Mishra','Chennai','8027962905','Midfielder','30 Jul 1996',27,T003');

insert into Players values('P0031','Rohan Anand','Chennai','9870242067','Defender','01 Jan 1995',28,T003');

insert into Players values('P0032','Sanjay Suri','Chennai','9245272687','Defender','25 Oct 1994',29,T003');

insert into Players values('P0033','Sunil Balan','Chennai','9032064128','Defender','12 Apr 1993',30,T003');

insert into Players values('P0034','Arjun Mokashi','Kolkata','7896136092','Captain','19 Mar 2004',19,T004');

insert into Players values('P0035','Ishan Sharma','Kolkata','8205490213','GoalKeeper','21 Feb 2003',20,T004');

insert into Players values('P0036','Aftab Khan','Kolkata','9098323801','Forward','11 Jan 2002',21,T004');

insert into Players values('P0037','Krish Nayak','Kolkata','9754865402','Forward','13 Jun 2000',23,T004');

insert into Players values('P0038','Nitin Kapoor','Kolkata','7034323567','Forward','25 Sep 1999',24,T004');

insert into Players values('P0039','Rishi Khanna','Kolkata','9346453210','Midfielder','30 Nov 1998',25,T004');

insert into Players values('P0040','Kalpesh Goel','Kolkata','7899048965','Midfielder','15 Aug 1997',26,T004');

insert into Players values('P0041','Veer Kumar','Kolkata','8024980905','Midfielder','10 Jul 1996',27,T004');

insert into Players values('P0042','Ranbir Kapoor','Kolkata','7942242067','Defender','08 May 1995',28,'T004');

insert into Players values('P0043','Sajan Kher','Kolkata','9245278102','Defender','20 Oct 1994',29,'T004');

insert into Players values('P0044','Anupam Lakhota','Kolkata','9856064128','Defender','15 Nov 1993',30,'T004');

insert into Players values('P0045','Deepak Ranka','Haryana','8905136092','Captain','20 Mar 2004',19,'T005');

insert into Players values('P0046','Dev Anand','Haryana','8205494762','GoalKeeper','25 Feb 2003',20,'T005');

insert into Players values('P0047','Jaydeep Shah','Haryana','9095643801','Attacker','18 Jan 2002',21,'T005');

insert into Players values('P0048','Kalpen Mehta','Haryana','7854865402','Attacker','19 Jun 2000',23,'T005');

insert into Players values('P0049','Ravi Sharma','Haryana','7034320753','Attacker','27 Sep 1999',24,'T005');

insert into Players values('P0050','Manoj Goel','Haryana','9340476210','Midfielder','05 Nov 1998',25,'T005');

insert into Players values('P0051','Aaditya Kapoor','Haryana','9534048965','Midfielder','21 Aug 1997',26,'T005');

insert into Players values('P0052','Anil Dravid','Haryana','8795389465','Midfielder','09 Jul 1996',27,'T005');

insert into Players values('P0053','Junaid Khan','Haryana','7213242067','Defender','22 May 1995',28,'T005');

insert into Players values('P0054','Ashok Kumar','Haryana','9245279531','Defender','26 Oct 1994',29,'T005');

insert into Players values('P0055','Davesh Dhariwal','Haryana','9803764128','Defender','12 Nov 1993',30,'T005');

insert into Players values('P0056','Divit Roy','Ahmedabad','7945136092','Captain','01 Mar 2004',19,'T006');

insert into Players values('P0057','Hari Narayan','Ahmedabad','8205498321','GoalKeeper','10 Feb 2003',20,'T006');

insert into Players values('P0058','Harsh Shah','Ahmedabad','9904423801','Attacker','15 Jan 2002',21,'T006');

insert into Players values('P0059','Jairaj Kapoor','Ahmedabad','7632865402','Attacker','20 Jun 2000',23,'T006');

insert into Players values('P0060','Kailash Sharma','Ahmedabad','7034329065','Attacker','25 Sep 1999',24,'T006');

insert into Players values('P0061','Mahavir Radhe','Ahmedabad','9805376210','Midfielder','10 Nov 1998',25,'T006');

insert into Players values('P0062','Omkar Das','Ahmedabad','7312048965','Midfielder','30 Aug 1997',26,'T006');

insert into Players values('P0063','Sachin Tambe','Ahmedabad','8795382130','Midfielder','22 Jul 1996',27,'T006');

insert into Players values('P0064','Aarif Khan','Ahmedabad','7219780206','Defender','21 May 1995',28,'T006');

insert into Players values('P0065','Samarth Patel','Ahmedabad','9064279531','Defender','12 Oct 1994',29,'T006');

insert into Players values('P0066','Tejas Toshniwal','Ahmedabad','9803767412','Defender','19 Nov 1993',30,'T006');

Selecting all the Values from Players Table

select * from Players;

P_ID	P_NAME	P_ADDR	P_PHONENO	P_POSTITION	P_DOB	P_AGE	T_ID
P0001	Ram Sharma	Mumbai	8014579812	Captain	20-JAN-04	19	T001
P0002	Rohit Kumar	Mumbai	7052492186	Wicket-Keeper	13-FEB-03	20	T001
P0003	Bipin Pal	Mumbai	9035648721	Batsman	06-APR-02	21	T001
P0004	Chandra Shah	Mumbai	9867235402	Bowler	17-JUL-00	23	T001
P0005	Chetan Gade	Mumbai	9467328132	Bowler	22-SEP-99	24	T001
P0006	Saurav Mehta	Mumbai	9689453210	Batsman	08-OCT-98	25	T001
P0007	Ajit Pawar	Mumbai	7890451239	Batsman	12-NOV-97	26	T001
P0008	Satish Shah	Mumbai	8754021321	Bowler	15-DEC-96	27	T001
P0009	Chiraj Gada	Mumbai	9731249067	Batsman	19-MAR-95	28	T001
P0010	Sukhvinder Singh	Mumbai	8093276481	All rounder	23-MAY-94	29	T001
P0011	Jayesh Lamhe	Mumbai	9079435128	All rounder	25-JUN-93	30	T001
P0012	Ajay Kumar	Delhi	7542136092	Captain	23-FEB-04	19	T002
P0013	Mohsin Khan	Delhi	8205492186	Wicket-Keeper	15-JAN-03	20	T002
P0014	Suresh Oberoi	Delhi	9035643801	Batsman	09-MAY-02	21	T002
P0015	Jatin Shah	Delhi	8067865402	Bowler	21-JUN-00	23	T002

P0035	Ishan Sharma	Kolkata	8205490213	Goal-Keeper	21-FEB-03	20	T004
P0036	Aftab Khan	Kolkata	9098323801	Forward	11-JAN-02	21	T004
P0037	Krish Nayak	Kolkata	9754865402	Forward	13-JUN-00	23	T004
P0038	Nitin Kapoor	Kolkata	7034323567	Forward	25-SEP-99	24	T004
P0039	Rishi Khanna	Kolkata	9346453210	Midfielder	30-NOV-98	25	T004
P0040	Kalpesh Goel	Kolkata	7899048905	Midfielder	15-AUG-97	26	T004
P0041	Veer Kumar	Kolkata	8024980905	Midfielder	10-JUL-96	27	T004
P0042	Ranbir Kapoor	Kolkata	7942242067	Defender	08-MAY-95	28	T004
P0043	Sajan Kher	Kolkata	9245278102	Defender	20-OCT-94	29	T004
P0044	Anupam Lakhotia	Kolkata	9856064128	Defender	15-NOV-93	30	T004
P0045	Deepak Ranka	Haryana	8905136092	Captain	20-MAR-04	19	T005
P0046	Dev Anand	Haryana	8205494762	Goal-Keeper	25-FEB-03	20	T005
P0047	Jaydeep Shah	Haryana	9095643801	Attacker	18-JAN-02	21	T005
P0048	Kalpen Mehta	Haryana	7854865402	Attacker	19-JUN-00	23	T005
P0049	Ravi Sharma	Haryana	7034320753	Attacker	27-SEP-99	24	T005
P0050	Manoj Goel	Haryana	9340476210	Midfielder	05-NOV-98	25	T005

Creating Merchandise Table

```
create table Merchandise(  
mer_id varchar(5) not null,  
company_name varchar(40) not null,  
mer_phoneno char(10) not null unique,  
sports_kit varchar(300) not null,  
clothes_and_footwear varchar(300) not null,  
t_id varchar(5) references Team(t_id)  
);
```

Inserting values into merchandise Table

```
insert into merchandise  
values('MER01','Adidas','9078765432','bat,ball,stumps,bails,sight screen,abdominal  
guard,helmet,gloves,thigh guard,elbow guard,chest guard,wicketkeeper glove','collared  
shirt,long trouser,jumper,cricket cap,jockstrap,spiked shoes','T001');
```

```
insert into merchandise values('MER02','T10  
Sports','9456372139','bat,ball,stumps,bails,sight screen,abdominal  
guard,helmet,gloves,thigh guard,elbow guard,chest guard,wicketkeeper glove','collared  
shirt,long trouser,jumper,cricket cap,jockstrap,spiked shoes','T002');
```

```
insert into merchandise values('MER03','Performax','9153290011','football,Goalkeeper  
gloves,headgear,leg pads','jursey,shorts,socks,football boots,shin guard,Goalkeeper  
track pants','T003');
```

```
insert into merchandise values('MER04','Royal Sports','9908890011','football,Goalkeeper  
gloves,headgear,leg pads','jursey,shorts,socks,football boots,shin guard,Goalkeeper  
track pants','T004');
```

```
insert into merchandise values('MER05','Alfa','9230011832','hockey stick,ball,stick  
bag,electrical tape,hand grips,helmet,throat protector,chest pad,arm and elbow  
protector,leg guard','Tshirt,shorts,shoes,mouth guard,shin guard,pelvic protector','T005');
```


insert into merchandise values('MER06','R.K. Mahajan Exports','9934561231','hockey stick,ball,stick bag,electrical tape,hand grips,helmet,throat protector,chest pad,arm and elbow protector,leg guard','Tshirt,shorts,shoes,mouth guard,shin guard,pelvic protector','T006');

Selecting all the Values from Merchandise Table

select * from Merchandise;

MER_ID	COMPANY_NAME	MER_PHONENO	SPORTS_KIT	CLOTHES_AND_FOOTWEAR	T_ID
MER01	Adidas	9078765432	bat,ball,stumps,balls,sight screen,abdominal guard,helmet,gloves,thigh guard,elbow guard,chest guard,wicket-keeper glove	collared shirt,long trouser,jumper,cricket cap,jockstrap,spiked shoes	T001
MER02	T10 Sports	9456372139	bat,ball,stumps,balls,sight screen,abdominal guard,helmet,gloves,thigh guard,elbow guard,chest guard,wicket-keeper glove	collared shirt,long trouser,jumper,cricket cap,jockstrap,spiked shoes	T002
MER03	Performax	9153290011	football,Goal-keeper - gloves,headgear,leg pads	jursey,shorts,socks,football boots,shin guard,Goalkeeper -track pants	T003
MER04	Royal Sports	9908890011	football,Goal-keeper - gloves,headgear,leg pads	jursey,shorts,socks,football boots,shin guard,Goalkeeper -track pants	T004
MER05	Alfa	9230011032	hockey stick,ball,stick bag,electrical tape,hand grips,helmet,throat protector,chest pad,arm and elbow protector,leg guard	T-shirt,shorts,shoes,mouth guard,shin guard,pelvic protector	T005
MER06	R.K. Mahajan Exports	9934561231	hockey stick,ball,stick bag,electrical tape,hand grips,helmet,throat protector,chest pad,arm and elbow protector,leg guard	T-shirt,shorts,shoes,mouth guard,shin guard,pelvic protector	T006

commit;

1. Function

Question:

Write a PL/SQL code to display the Average Ages of Team T001 and Team T002

Function to get the average age of players in a specific team

```
CREATE OR REPLACE FUNCTION get_avg_age(team_id IN VARCHAR2)
RETURN NUMBER IS
    total_age NUMBER := 0;
    player_count NUMBER := 0;
BEGIN
    FOR i IN (SELECT p_age FROM Players WHERE t_id = team_id) LOOP
        total_age := total_age + player_rec.p_age;
        player_count := player_count + 1;
    END LOOP;

    IF player_count > 0 THEN
        RETURN total_age / player_count;
    ELSE
        RETURN 0; Default value if no players in the team
    END IF;
END;
/
```

Function created.

Executing the function

```
DECLARE
    avg_age_team1 NUMBER;
    avg_age_team2 NUMBER;
BEGIN
    Calculate average age for Team 'T001'
    avg_age_team1 := get_avg_age('T001');
```

```
DBMS_OUTPUT.PUT_LINE('Average Age for Team T001: ' || avg_age_team1);
```

```
Calculate average age for Team 'T002'
```

```
avg_age_team2 := get_avg_age('T002');
```

```
DBMS_OUTPUT.PUT_LINE('Average Age for Team T002: ' || avg_age_team2);
```

```
END;
```

```
/
```

```
Statement processed.
```

```
Average Age for Team T001: 24.7272727272727272727272727272727273
```

```
Average Age for Team T002: 24.7272727272727272727272727272727273
```

2. Procedure

Question:

Write a PL/SQL code to create an Procedure to update the number of matches won for a team

Procedure to update the number of matches won for a team

```
CREATE OR REPLACE PROCEDURE update_matches_won(  
    team_id IN VARCHAR2,  
    matches_won IN NUMBER  
) AS  
    v_current_matches_won NUMBER;  
  
BEGIN  
    Retrieve the current number of matches won  
    SELECT no_of_matches_won INTO v_current_matches_won  
    FROM Team  
    WHERE t_id = team_id;  
  
    Check if the new value is greater than the current value  
    IF matches_won >= v_current_matches_won THEN
```

```

        Update the number of matches won
        UPDATE Team SET no_of_matches_won = matches_won WHERE t_id = team_id;
        COMMIT;
        DBMS_OUTPUT.PUT_LINE('Matches won for Team ' || team_id || ' updated
successfully.');
```

ELSE

```

        Raise an exception if the new value is less than the current value
        RAISE_APPLICATION_ERROR(20001, 'New matches won value must be greater
than or equal to the current value.');
```

END IF;

EXCEPTION

```

    WHEN NO_DATA_FOUND THEN
        Handle the case where the team ID is not found
        RAISE_APPLICATION_ERROR(20002, 'Team with ID ' || team_id || ' not found.');
```

WHEN OTHERS THEN

```

        Handle other exceptions
        RAISE_APPLICATION_ERROR(20003, 'An error occurred: ' || SQLERRM);
END update_matches_won;
/
```

Output:

```
Procedure created.
```

Executing the function

```

DECLARE
    team_id_to_update VARCHAR2(5) := 'T001';   Replace with the actual team ID
    new_matches_won NUMBER := 15;   Replace with the desired new value

BEGIN
    update_matches_won(team_id_to_update, new_matches_won);

EXCEPTION
    WHEN OTHERS THEN
        Handle other exceptions
        DBMS_OUTPUT.PUT_LINE('An error occurred: ' || SQLERRM);
```

END;

```
Statement processed.  
Matches won for Team T001 updated successfully.
```

3. Cursor (implicit and explicit)

IMPLICIT

PL/SQL block with an implicit cursor

DECLARE

 v_manager_name Manager.m_name%TYPE;

 v_manager_id Manager.m_id%TYPE := 'M001';

BEGIN

 Using an implicit cursor to fetch the manager name based on the given manager_id

 SELECT m_name INTO v_manager_name FROM Manager WHERE m_id =
v_manager_id;

 Display the result

 DBMS_OUTPUT.PUT_LINE('Manager Name: ' || v_manager_name);

END;

```
Statement processed.  
Manager Name: Anil Patil
```

PL/SQL block with an implicit cursor

DECLARE

 v_team_name Team.t_name%TYPE;

 v_team_id VARCHAR2(5) := 'T001'; Replace with the actual team ID

BEGIN

 Selecting team name using an implicit cursor

 SELECT t_name INTO v_team_name

```
FROM Team
WHERE t_id = v_team_id;
```

Printing the result

```
DBMS_OUTPUT.PUT_LINE('Team Name for ' || v_team_id || ': ' || v_team_name);
```

EXCEPTION

WHEN NO_DATA_FOUND THEN

```
    DBMS_OUTPUT.PUT_LINE('Team with ID ' || v_team_id || ' not found.');
```

WHEN OTHERS THEN

```
    DBMS_OUTPUT.PUT_LINE('An error occurred: ' || SQLERRM);
```

END;

/

```
Statement processed.
Team Name for T001: Mighty Lions
```

EXPLICIT

PL/SQL block with an explicit cursor

DECLARE

Declare a cursor

CURSOR manager_cursor IS

```
    SELECT m_id, m_name FROM Manager;
```

Variables to store cursor values

v_manager_id Manager.m_id%TYPE;

v_manager_name Manager.m_name%TYPE;

BEGIN

Open the cursor

```
OPEN manager_cursor;
```

Fetch and process each row

LOOP

```
    FETCH manager_cursor INTO v_manager_id, v_manager_name;
```

```
    EXIT WHEN manager_cursor%NOTFOUND;
```

```

        Display the result for each row
        DBMS_OUTPUT.PUT_LINE('Manager ID: ' || v_manager_id || ', Manager Name: ' ||
v_manager_name);
    END LOOP;

    Close the cursor
    CLOSE manager_cursor;

END;
/

```

```

Statement processed.
Manager ID: M001, Manager Name: Anil Patil
Manager ID: M002, Manager Name: Vikram Rathwad
Manager ID: M003, Manager Name: Nitin Patel
Manager ID: M004, Manager Name: T Dilip
Manager ID: M005, Manager Name: Soham Desai
Manager ID: M006, Manager Name: Ankit Singh

```

PL/SQL block with an explicit cursor

```

DECLARE
    v_team_name Team.t_name%TYPE;
    v_team_id VARCHAR2(5) := 'T001';

```

Replace with the actual team ID

```

    Declare the explicit cursor
    CURSOR team_cursor IS
        SELECT t_name
        FROM Team
        WHERE t_id = v_team_id;

```

```

BEGIN
    Open the explicit cursor
    OPEN team_cursor;

    Fetch data from the explicit cursor into variables
    FETCH team_cursor INTO v_team_name;

    Process the fetched data

```

```

IF team_cursor%FOUND THEN
    DBMS_OUTPUT.PUT_LINE('Team Name for ' || v_team_id || ':' || v_team_name);
ELSE
    DBMS_OUTPUT.PUT_LINE('Team with ID ' || v_team_id || ' not found!');
END IF;

Close the explicit cursor
CLOSE team_cursor;

EXCEPTION
    WHEN OTHERS THEN
        DBMS_OUTPUT.PUT_LINE('An error occurred: ' || SQLERRM);
END;
/

```

```

Statement processed.
Team Name for T001: Mighty Lions

```

PL/SQL block with an explicit cursor for a different table

```

DECLARE
    v_player_name Players.p_name%TYPE;
    v_team_id VARCHAR2(5) := 'T001'; Replace with the actual team ID

    Declare the explicit cursor for the Players table
    CURSOR player_cursor IS
        SELECT p_name
        FROM Players
        WHERE t_id = v_team_id;

BEGIN
    Open the explicit cursor
    OPEN player_cursor;

    Fetch and process data from the explicit cursor
    LOOP
        FETCH player_cursor INTO v_player_name;

        EXIT WHEN player_cursor%NOTFOUND;

        Process the fetched data
        DBMS_OUTPUT.PUT_LINE('Player Name for Team ' || v_team_id || ':' || v_player_name);
    
```



```

END LOOP;

Close the explicit cursor
CLOSE player_cursor;

EXCEPTION
WHEN OTHERS THEN
    DBMS_OUTPUT.PUT_LINE('An error occurred: ' || SQLERRM);
END;
/

```

```

Statement processed.
Player Name for Team T001: Ram
Sharma
Player Name for Team T001: Rohit Kumar
Player Name for Team T001: Bipin Pal
Player Name for Team T001: Chandra
Shah
Player Name for Team T001: Chetan
Gade
Player Name for Team T001: Saurav
Mehta
Player Name for Team T001: Ajit Pawar
Player Name for Team T001: Satish Shah
Player Name for Team T001: Chiraj
Gada
Player Name for Team T001: Sukhvinder Singh
Player Name for Team T001: Jayesh Lamhe

```

4. Package

Package for managing managers
CREATE OR REPLACE PACKAGE ManagerPackage AS

Procedure to insert a new manager

```

PROCEDURE InsertManager (
    p_id IN VARCHAR2,
    p_name IN VARCHAR2,

```

```
p_phoneno IN NUMBER,  
p_addr IN VARCHAR2  
);
```

Procedure to retrieve manager information

```
PROCEDURE GetManagerInfo (  
  p_id IN VARCHAR2  
);
```

```
END ManagerPackage;
```

```
/
```



Package created.

CREATE OR REPLACE PACKAGE BODY ManagerPackage AS

Procedure implementation for inserting a new manager

```
PROCEDURE InsertManager (  
  p_id IN VARCHAR2,  
  p_name IN VARCHAR2,  
  p_phoneno IN NUMBER,  
  p_addr IN VARCHAR2  
) AS  
BEGIN  
  INSERT INTO Manager (m_id, m_name, m_phoneno, m_addr)  
  VALUES (p_id, p_name, p_phoneno, p_addr);  
  COMMIT;  
END InsertManager;
```

Procedure implementation for retrieving manager information

```
PROCEDURE GetManagerInfo (  
  p_id IN VARCHAR2  
) AS  
  v_manager Manager%ROWTYPE;  
BEGIN  
  SELECT * INTO v_manager  
  FROM Manager  
  WHERE m_id = p_id;
```

```
Output the manager information
DBMS_OUTPUT.PUT_LINE('Manager ID: ' || v_manager.m_id);
DBMS_OUTPUT.PUT_LINE('Manager Name: ' || v_manager.m_name);
DBMS_OUTPUT.PUT_LINE('Phone Number: ' || v_manager.m_phoneno);
DBMS_OUTPUT.PUT_LINE('Address: ' || v_manager.m_addr);
END GetManagerInfo;
```

```
END ManagerPackage;
```

```
/
```

```
Package Body created.
```

```
DECLARE
  v_manager_id VARCHAR2(5) := 'M001';
BEGIN
  ManagerPackage.GetManagerInfo(v_manager_id);
END;
/
```

```
Statement processed.
Manager ID: M001
Manager Name: Anil Patil
Phone Number: 7885365848
Address: Mumbai
```

```
DECLARE
  v_manager_id VARCHAR2(5) := 'M004';
BEGIN
  ManagerPackage.GetManagerInfo(v_manager_id);
END;
/
```

```
Statement processed.
Manager ID: M004
Manager Name: T Dilip
Phone Number: 8945365848
Address: Kolkata
```

5. Trigger

create table audit12

(

audit_id number generated by default as identity primary key,

table_name varchar2(20),

team_name varchar2(20),

by_user varchar2(20),

team_date date);

—Creating a trigger—

create or replace trigger Team_audit_trg

after

update or delete

on Team

for each row

declare

i_transaction varchar2(20);

begin

i_transaction:=case

when updating then 'Update'

when deleting then 'Delete'

end;

```
Trigger created.
```

```
insert into  
audit12(table_name,team_name,by_user,team_date)values('Team',i_transaction,user,sy  
sdate);
```

```
End;
```

```
select * from Team;
```

```
update Team
```

```
set t_name='Mighty Lions'
```

```
where t_id='T001';
```

```
select * from audit12;
```

AUDIT_ID	TABLE_NAME	TEAM_NAME	BY_USER	TEAM_DATE
1	Team	Update	APEX_PUBLIC_USER	09-MAR-24

– Triggers for Inserting , Updating and Deleting the Players name and Address –

```
create or replace trigger players_tiggers
```

```
before
```

```
insert or
```

```
update of p_name,p_addr or
```

delete

on Players

BEGIN

CASE

WHEN INSERTING THEN

dbms_output.put_line('Inserting');

WHEN UPDATING('p_name')THEN

dbms_output.put_line('updating name');

WHEN UPDATING ('p_addr')then

dbms_output.put_line('Updating players_address');

WHEN DELETING THEN

dbms_output.put_line('Deleting');

END CASE;

END;

Trigger created.

–INSERT TRIGGER–

```
insert into Players values('P0099','Kunal Sharma','Mumbai','9014379812','Captain','20 Jan 2004',19,'T001');
```

```
1 row(s) inserted.  
Inserting Players
```

–UPDATE PLAYERS NAME –

```
UPDATE Players
```

```
set p_name='Virat Kohli'
```

```
where p_id='P0004';
```

```
select * from Players;
```

```
1 row(s) updated.  
updating name
```

–UPDATE PLAYERS ADDRESS–

```
UPDATE Players
```

```
set p_addr='Chennai'
```

```
where p_id='P0001';
```

```
1 row(s) updated.  
Updating players_address
```

–DELETE PLAYERS –

delete from Players

where p_name='Virat Kohli';

```
1 row(s) deleted.  
Deleting
```

6. Exception handling

CREATE OR REPLACE PACKAGE BODY ManagerPackage AS

Procedure implementation for inserting a new manager

```
PROCEDURE InsertManager (  
  p_id IN VARCHAR2,  
  p_name IN VARCHAR2,  
  p_phoneno IN NUMBER,  
  p_addr IN VARCHAR2  
) AS  
BEGIN  
  INSERT INTO Manager (m_id, m_name, m_phoneno, m_addr)  
  VALUES (p_id, p_name, p_phoneno, p_addr);  
  COMMIT;  
END InsertManager;
```

Procedure implementation for retrieving manager information

```
PROCEDURE GetManagerInfo (  
  p_id IN VARCHAR2  
) AS
```



```
v_manager Manager%ROWTYPE;  
BEGIN  
  SELECT * INTO v_manager  
  FROM Manager  
  WHERE m_id = p_id;
```

To get the output of the manager information

```
DBMS_OUTPUT.PUT_LINE('Manager ID: ' || v_manager.m_id);  
DBMS_OUTPUT.PUT_LINE('Manager Name: ' || v_manager.m_name);  
DBMS_OUTPUT.PUT_LINE('Phone Number: ' || v_manager.m_phoneno);  
DBMS_OUTPUT.PUT_LINE('Address: ' || v_manager.m_addr);
```

```
EXCEPTION  
  WHEN NO_DATA_FOUND THEN  
    RAISE_APPLICATION_ERROR(20001, 'No manager found with ID: ' || p_id);  
  WHEN OTHERS THEN  
    DBMS_OUTPUT.PUT_LINE('An error occurred: ' || SQLERRM);  
END GetManagerInfo;
```

```
END ManagerPackage;
```

```
/
```

Package Body created.

```
DECLARE  
  v_manager_id Manager.m_id%TYPE := 'M003';  
BEGIN  
  ManagerPackage.GetManagerInfo(v_manager_id);  
END;
```

Statement processed.
Manager ID: M003
Manager Name: Nitin Patel
Phone Number: 9985365848
Address: Chennai

```
DECLARE
  v_manager_id Manager.m_id%TYPE := 'M0003';
BEGIN
  ManagerPackage.GetManagerInfo(v_manager_id);
END;
```

```
ORA-20001: No manager found with ID: M0003 ORA-06512: at "SQL_YJUBRSSZUDWYLSOTAONHTENRS.MANAGERPACKAGE", line 34
ORA-06512: at line 4
ORA-06512: at "SYS.DBMS_SQL", line 1721
```

More Details: <https://docs.oracle.com/error-help/db/ora-20001>