Assignment #2

```
Create table Team_Table (
        TeamNum int primary key,
        TeamName varchar(25) unique,
        City varchar(25)
        Manager varchar(25)
)
```

```
create table Coach Table(
        TeamNum int unique not null foreign key references
                TeamTable(TeamNum) on update cascade,
        CoachName varchar(25) unique not null,
        Telephone big int,
        Primary key (TeamNum, CoachName
)
```

```
Create table Work_Experience_table(
        TeamNum int unique not null foreign key
                references TeamTable(TeamNum),
        CoachName varchar(25) foreign key references
                CoachTable (CoachName),
        ExperienceTable int,
        Primary key (TeamName, Coach Name)
)
```

```
Create table Player Table (
        PlayerNum int primary key,
        PlayerName varchar(25),
        Age int,
)
```

```
create table AffiliationTable (
        PlayerNum int foreign key references PlayerTable
                (PlayerNum),
        TeamNum int foreign key references TeamTable
                (TeamNum),
        Years int,
        Batting Avg int,
)

create table bats_table(
        TeamNum int foreign key references TeamTable (TeamNum)
        SerialNum int,
        Manufacturer nvarchar 25
)
```

Q#1

SQL: Select TeamName, City from TeamTable where TeamNum > 15 order by TeamName

RA: $\pi_{TeamNames, city}(TeamNum > 15(TeamTable)) \bowtie (TeamNum)\ TeamTable$

Q#2

SQL: Select playerName from Player_Table where Age < 18

RA: $\pi(PlayerName)(\sigma\ Age < 18\ (PlayerTable))$.

Q#3

SQL: Select c.CoachName from CoachTable as (inner join Work_Exprience Table as Won c.coachName = W.CoachName and C.TeamNum = W.TeamNum where W.Experience Type = "college coaches" and (W.Years of Experience = 5 or W. years of Experience = 10)

RA: π c.CoachName (σ w.ExperienceType = 'college' coach!
$\wedge$ (w.years of experience = 5 $\vee$ w.years of experience = 10)
(CoachTable ρ c CoachName = w.CoachName $\wedge$
c.TeamNum = w.TeamNum).

Q#4

SQL: Select sum (Years of Experience) as WagarExperience from WorkExperience Table where CoachName = 'Wagar' and TeamNum = 25 group by CoachName.

RA: π sum (WorkExperience Table.Years of Experience)
(σ CoachName = 'wagar' $\wedge$ TeamNum = 25 (Work_Exp_Table))

Q#5

SQL: Select count (Experience Type) from Work_Experience_Table where CoachName = "Wagar" and TeamNum = 3

RA: π count (Distinct)(ExperienceType) (σ CoachNam = 'Wagar' $\wedge$ TeamNum = 3 (Work_Experience_Table))

Q#6

SQL: Select Distinct count (ExperinceType) from Work Experience Table group by CoachName

RA: π CoachName, sum (Years of Experience)(Work Experience Table) $\bowtie$ {CoachName}.

Q#7

SQL: Select distinct manufacture as manufactures from Bat Table inner join Team_Table on Bats Table. TeamNum = team_table. Team Num where TeamNum = "leagues"

RA:

π manufacture (Bats Table $\bowtie$ Bats_Table. TeamNum = Team_Table .TeamNum $\bowtie$ Team table) / Team Name = 'leagues'

Q#8-

SQL: select playerName from PlayerTable as A innerjoin AffiliationTable as B on A.playerNum = B.playerNum. inner join TeamTable as C on B.TeamNum = C.TeamNum where TeamName = 'Yankees' and B.Years >= 8

RA: π playerName (Player_Table $\bowtie$ Affiliation Table) $\bowtie$ TeamTable) | (TeamName = 'Yankees' $\wedge$ years > 8)

Q#9

SQL: select A.CoachName, sum(Years of Experience) his totalyo from work Experience Table as A. inner join CoachTable as B on A.CoachName = B.CoachName innerjoin TeamTable as C on B.TeamNum = TeamNum where C.TeamName = 'Royals' and A.years of Experience > 8 group by A.CoachName.

RA:

π A.CoachName, sum(Years of Experience)(Work Experience Table $\bowtie$ Coach Table $\bowtie$ Team Table) | (Team Name = 'Royal' $\wedge$ Year of Experience > 8) $\bowtie$ {Coach Name}

Q#10

SQL: Select top (5) Player Name from Player Table order by Age Asc.

RA: take (5, π PlayerName (Player Table))

Q#11

SQL: select top (5). PlayerName from Player Table where Right PlayerName. CHARINDEX (' ', REVERSE(PlayerName)) - 1) like 'M% order by Asc.

RA: π playerName (σ RIGHT (PlayerName, CHARINDEX (' ', REVERSE(PlayerName)) - 1) = 'M' (Player_Table))).

Q#12

SQL: Select PlayerName from PlayerTable as A join (
Select playerNum count (Distinct B.year) as total from
Affiliation Table as B group by B.PlayerNum having
count (Distinct B.Year) >2.) Asc on A.PlayerNum
= C.PlayerNum

RA: π PlayerName ((PlayerTable) $\bowtie$ (π playerNum, count(
Distinct Years) as total (Affiliation Table) $\rightarrow\!\!\!\!\bowtie$ {
PlayerNum} ! total > 2))

Q#13

SQL: select playerName from PlayerTable as A
inner join Affiliation Table as B on A.PlayerNum = B
PlayerNum except (select playerNum from AffiliationTable)

RA: π playerName (σ PlayerNum $\notin$ (π PlayerNum(AffiliationTable)))

Q#14

SQL: select A.PlayerName, count (B.TeamNum) as TeamPlayer from
PlayerTable as A.
inner join Affiliation Table as B.
on A.PlayerNum = B.PlayerNum group by A.PlayerName.

RA: π A.PlayerName, count (B.TeamNum)(PlayerTable $\bowtie$ AffiliationTable)
$\rightarrow\!\!\!\!\bowtie$ {A.PlayerName} $\rightarrow\!\!\!\!\bowtie$ {B.PlayerNum}.

Q#15 SQL: Select A.TeamName, AVG(B.BattingAvg from TeamTable
as A inner join Affiliation Table as B on A.TeamNumB = B, TeamNum
group by A.TeamName

RA: π A.TeamName, Avg (B.BattingAvg)((TeamTable $\bowtie$ Affiliation Table) $\bowtie$
Affiliation_Table.BattingAvg) $\rightarrow\!\!\!\!\bowtie$ {B.TeamNum) $\rightarrow\!\!\!\!\bowtie$ {B.BattingAvg}
group by A.TeamName.