

Ahsanullah University of Science & Technology

Department of Computer Science & Engineering

Final Project Report

Course No: CSE3104

Course Title: Database Lab

Project Name: Gamers' Logbook

Submitted To: Mr. Mir Tafseer Nayeem

Mr. Nazmus Sakib

Submitted By-

Syed Sanzam

16.01.04.042

&

Nusrat Hossain Anika

16.01.04.045

Section: A2

Project Objective:

Gamers' Logbook is a Database System for Gamers with Game Server Statistics. The sole purpose of this system is to help Gamers arrange their data in an orderly fashion where they can retrieve the necessary information in no time when required.

Features of the Project:

This system will hold different types of information related to Gamers, like different types of Videogames, Leaderboards, Upcoming Leagues, Alias and so on. The system comes with an easy to use user-interface. The information within the system will be coherent and free of repetition.

Types of Users:

In this platform all the queries are divided mainly for two types of users, they are,

- General Users
- Admin

User Queries are for General Users. These queries do not change the state of database. These are only used to retrieve data from the database.

Admin Queries on the other hand are performed to make significant changes to the database structure.

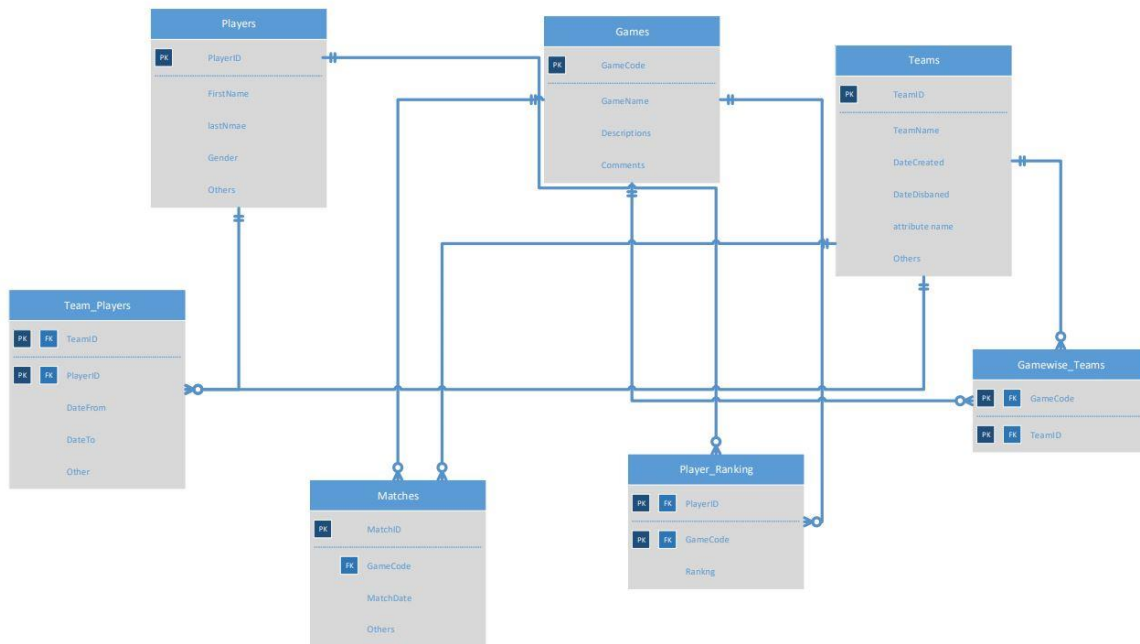
Feature Grouping According to the Users:

- Queries(1-30) : General User Queries
- Queries(31-45): Admin Queries

Names of Entity with Primary Key:

- 1.Games(GameCode)
- 2.Players(PlayerID)
- 3.Teams(TeamID)
- 4.Team_Players(TeamID,PlayerID)
- 5.Matches(MatchID)
- 6.Player_Ranking(PlayerID,GameCode)
- 7.Gamewise_Teams(GameCode,TeamID)

E-R Diagram:



Relational Model:

```
create table Games
(
    GameCode char(10) not null,
    GameName varchar(100),
    Descriptions varchar(800),
    Comments varchar(200),

    primary key (GameCode)
);

create table Players
(
    PlayerID int not null,
    FirstName varchar(50),
    LastName varchar(50),
    Gender varchar(10),
    Others varchar(50),

    primary key (PlayerID)
);
```

```

create table Teams
(
    TeamID int not null,
    TeamName varchar(20),
    DateCreated datetime not null,
    DateDisbanded datetime,
    Others varchar(50),

    primary key (TeamID)
);

create table Team_Players
(
    TeamID int not null,
    PlayerID int not null,
    DateFrom datetime not null,
    DateTo datetime,
    Other varchar(50),

    primary key (TeamID, PlayerID),
    foreign key (TeamID) references Teams (TeamID),
    foreign key (PlayerID) references Players (PlayerID)
);

create table Matches
(
    MatchID int not null,
    GameCode char(10) not null,
    MatchDate datetime not null,
    Others varchar(50),

    primary key (MatchID),
    foreign key (GameCode) references Games (GameCode)
);

```

```
create table Player_Ranking
(
    PlayerID int not null,
    GameCode char(10) not null,
    Ranking int,

    primary key (PlayerID,GameCode),
    foreign key (PlayerID) references Players (PlayerID),
    foreign key (GameCode) references Games (GameCode)

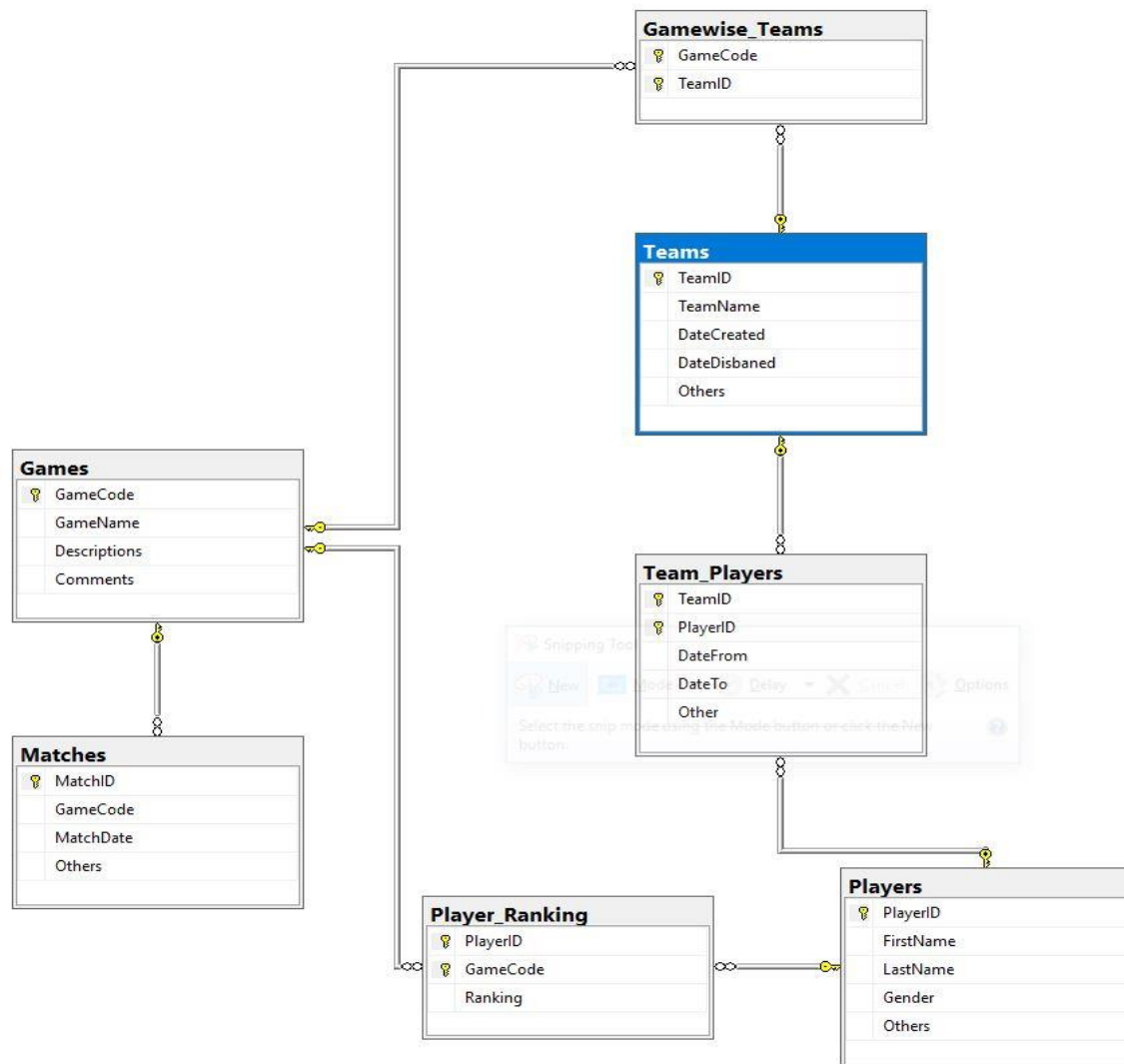
);
```

```
create table Gamewise_Teams
(
    GameCode char(10) not null,
    TeamID int not null,

    primary key (GameCode,TeamID),
    foreign key (GameCode) references Games (GameCode),
    foreign key (TeamID) references Teams (TeamID)

);
```

Database Diagram:



SQL Queries grouped under different Users:

General User Queries:

```
-->1 All Games
select * from Games;

-->2 All Players
select * from Players;

-->3 All Teams
select * from Teams;

-->4 All Team_Players
select * from Team_Players;

-->5 All Gamewise_Teams
select * from Gamewise_Teams;

-->6 All Matches
select * from Matches;

-->7 All Player_Ranking
select * from Player_Ranking;

-->8 Ordered by an Attribute
select * from Games
order by GameName ;

select * from Games
order by GameCode desc;

-->9 Types of game
-->i)
    select distinct Descriptions from Games;
-->ii)
    select distinct GameCode from Player_Ranking;

-->10 Top 3 ranked players of 'Fortnite'
select * from Players p, Player_Ranking pr
where pr.PlayerID = p.PlayerID and pr.Ranking <= 3 and
GameCode = (Select GameCode from Games where GameName = 'Fortnite');

-->11 Basic Searching
-->i)
    select * from Games
    where Descriptions like 'Sh%';
-->ii)
    select * from Games
    where GameCode like 'B%';
```

```

-->12 joining Players and Player_Ranking
-->i)
    select * from Players p,Player_Ranking pr
    where p.PlayerID = pr.PlayerID and pr.Ranking in (1,3);
-->ii)
    select * from Players p,Player_Ranking pr
    where p.PlayerID = pr.PlayerID and pr.Ranking between
        1 and 3 ;

-->13 Partial Information
-->i)
    select top 3 * from Players;
-->ii)
    select top 60 percent * from Players;

-->14 Players of each Gender
select Gender,COUNT(PlayerID) as 'PlayerNumber'
from Players group by Gender;

-->15 Number of Games under each category
select Descriptions,COUNT(GameCode) as 'NumberOfgames'
from Games group by Descriptions;

-->16 Number of Players who play Fortnite
select GameCode,COUNT(PlayerID) as 'Number of Players'
from Player_Ranking group by GameCode having
GameCode = (Select GameCode from Games where GameName ='Fortnite') ;

-->17 Fortnite Player Ranking
select p.PlayerID,p.FirstName + ' ' + p.LastName as
'PlayerName',p.Gender,pr.GameCode,pr.Ranking
from Players p inner join Player_Ranking pr
on p.PlayerID = pr.PlayerID and pr.GameCode = (Select GameCode from
Games where GameName ='Fortnite') ;

-->18 Overall Player Ranking
select p.playerID,p.firstname + ' ' + p.lastname as 'Player Name',
p.gender as'Gender',pr.GameCode,pr.Ranking
from Players p,Player_Ranking pr
where p.playerID = pr.playerID ;

```



```

-->19 Players information of each Gender
-->i)
    select * from Players
    where Gender in
        (select Gender from Players where Gender = 'Female');

-->ii)

    select * from Players
    where Gender in
        (select Gender from Players where Gender = 'Male');

-->20 Top 3 players of Fortnite
select * from Players p inner join Player_Ranking pr
on p.PlayerID = pr.PlayerID and pr.GameCode = (Select GameCode from
Games where GameName = 'Fortnite') and Ranking in
(select Top 3 Ranking from Player_Ranking
where GameCode = (Select GameCode from Games where GameName
= 'Fortnite') order by ranking )
order by pr.Ranking ;

-->21 All Gamewise Teams information
select
t.TeamID,gt.GameCode,t.TeamName,t.DateCreated,t.DateDisbanded,t.Others
from Teams t,Gamewise_Teams gt
where t.TeamID = gt.TeamID order by gt.GameCode;

-->22 Which Team plays which Game
select g.GameCode,g.GameName,gt.TeamID,t.TeamName from Games
g,Gamewise_Teams gt,Teams t
where g.GameCode = gt.GameCode and gt.TeamID = t.TeamID order by
g.GameCode;

-->23 Number of Teams per Game
select g.GameName,COUNT(Distinct gt.TeamID)as 'Number of Teams'
from Games g,Gamewise_Teams gt
where g.GameCode = gt.GameCode
group by g.GameName;

-->24 'Fortnite' Match Dates
select * from Matches
where GameCode = 'A001';

-->25 Future Match Dates
select * from Matches
where MatchDate > GETDATE() ;

-->26 Finished Matches
select * from Matches
where MatchDate < GETDATE() ;

```

```

-->27 Today's Match (If there is any)
select * from Matches
where MatchDate = GETDATE() ;

-->28 Team Matches
-->i)
    select m.MatchId,m.GameCode,t.TeamName,m.Matchdate from
    Matches m,Teams t,Gamewise_Teams gt
    where t.TeamID = gt.TeamID and gt.GameCode = m.GameCode
    order by m.GameCode;
-->ii)
    select m.MatchId,m.GameCode,t.TeamName,m.Matchdate from
    Matches m,Teams t,Gamewise_Teams gt
    where t.TeamID = gt.TeamID and gt.GameCode = m.GameCode and
    t.TeamID = 01
    order by m.GameCode;

-->29 Basic Union
select GameName from Games
where Descriptions = 'strategy'
UNION
select GameName from Games
where Comments = 'No Comments';

-->30 Gamewise Player Ranking
select Top 3 pr.Ranking,pr.PlayerID,p.FirstName from Player_Ranking
pr,Players p
where pr.PlayerID = p.PlayerID and pr.GameCode = 'A001' and pr.Ranking
in
(select Top 4 Ranking from Player_Ranking
order by Ranking) order by Ranking;

```

Admin Queries:

```

-->31 Basic Update
update Players
set FirstName = 'Bruce',LastName = 'Wayne'
where PlayerID = 08;

-->32 Basic Delete
delete from Players
where PlayerID = 08;

-->33 Updating Team Players
update Team_Players
set DateTo = GETDATE()
where TeamID = 01 and PlayerID = 03;

```

```

-->34 Disbanding Teams
update Teams
set DateDisbanded = GETDATE()
where TeamID = 04 ;

-->35 Updating Team Players from Disbanding Teams
update Team_Players
set DateTo = GETDATE()
where TeamID in
(select TeamID from Teams
where TeamName = 'Nihilist');

-->36 All Disbanded Teams
select * from Teams
where DateDisbanded != ' ' ;

-->37 Changing Game-wise Teams
Update Gamewise_Teams
set TeamID = 04
where TeamID = 02 and GameCode = 'A002';

-->38 Deleting Teams from Teams_Players
delete from Teams
where TeamID in
(select TeamID from Team_Players
where DateTo != '');

-->39 Deleting Team Players
delete from Team_Players
where TeamID in
(select TeamID from Teams
where DateDisbanded != '');

-->40 Disbanding Player
update Players
set Others = 'Disbanded'
where PlayerID = 04

-->41 Removing disbanded player from Player_Ranking
delete from Player_Ranking
where PlayerID in
(select PlayerID from Players
where PlayerID = 04);

-->42 Removing disbanded player from Team_players
delete from Team_Players
where PlayerID in
(select PlayerID from Players
where PlayerID = 04 ) ;

```

```

-->43 Assemble Team Players of Disbanded Teams
update Team_Players
set DateTo = ''
where TeamID in
( select TeamID from Teams
where DateDisbanded != '' );

-->44 Adding comments in Games table
update Games
set Comments = 'First person Shooting game'
where GameCode = 'A002' ;

-->45 Dropping/Truncating Tables
DROP table Players;
DROP table teams;
DROP table Matches;
TRUNCATE table Players;

```

Project Limitations:

This system is not for everyone to use. It is designed specifically for those who are enthusiastic about Video Games and indulge in gaming on a daily basis and want to keep track of all their records.

Conclusion and Future Work:

Gaming is and always has been a great source of entertainment for everyone. Nowadays some people are even considering it as a career option. **E-Sports** has become a phenomenon among many young adults. A system like this can be introduced to many websites or even tournaments. Some slight modifications such as storing more information and building even stronger relations can make this project shine the brightest.