Monopoly Board Game-Shizhi Chen-10307389

	Ronson Hall £30	CHANCE ?	Sugden Spots £30	GO TO JAIL
Opal Hall £20				Sackville £40
CHANCE ?				CHANCE ?
Roscoe £20				Alan Turing £40
JAIL	Waterloo £10	CHANCE ?	Kilburn £10	GO!

In order to be able to implement this game, we first need to create some tables. Assuming that we have those value in the tables at the beginning:

PLAYER

ID	Name	Token	C_Location	Balance	No_Properties	Age
1	Mary	Battleship	Free Parking	90	2	23
2	Bill	Dog	Sackville	110	3	31
3	Jane	Car	Waterloo	50	0	17
4	Norman	Tophat	GO!	130	1	25

CORNERS

ID	Name	Description
1	GO!	Collect 20
2	Jail	Nothing happens unless in Jain then must roll 6
3	Free Parking	Nothing happens
4	Go To Jail	Go To Jail

CHANCE

ID	Name	Description	Times_Used
1	Dance Competition	You win a dance competition, collect 20	0
2	Council Tax	You must pay your taxes, loose 30	0
3	Free Move	Move forwardss 3 spaces	0

STREETS

Name	Cost	Owner	Colour
Alan Turing	40	NULL	Blue
Kilburn	10	1	Yellow
Opal Hall	20	2	Green
Ronson Hall	30	2	Red
Roscoe	20	1	Green
Sackville	40	4	Blue
Sudgen Sports	30	NULL	Red
Waterloo	10	2	Yellow

TOKEN

Name	Selected	PlayerID
Battleship	1	1
Car	1	3
Dog	1	2
Iron	0	NULL
Tophat	1	4
NULL	NULL	NULL

SQL statements for create tables:

```
create database Monopoly_Board_game;
use Monopoly_Board_game;

create table CHANCE
(ID int PRIMARY KEY,
 Name varchar(50),
 Description varchar(255),
 Times_Used int
);

create table CORNERS
(ID int PRIMARY KEY,
 Name varchar(50),
 Description varchar(255)
);

create table PLAYER
(ID int PRIMARY KEY,
 Name varchar(50),
 Token varchar(50),
 C_Location varchar(50),
 Balance int,
 No_Properties int,
 Age int
);
```

```sql
create table TOKEN
(Name varchar(50) PRIMARY KEY,
 Selected bit,
 PlayerID int
);

create table STREETS
(
 Name varchar(50) PRIMARY KEY,
 Cost int,
 Owner int,
 Colour varchar(50),
 foreign key(Owner) references PLAYER(ID)
);

insert into CHANCE values(1,'Dance Competition','You win a dance competition, collect 20',0);
insert into CHANCE values(2,'Council Tax','You must pay your taxes, loose 30',0);
insert into CHANCE values(3,'Free Move','Move forwardss 3 spaces',0);

insert into CORNERS values(1,'GO!','Collect 20');
insert into CORNERS values(2,'Jail','Nothing happens unless in Jain then must roll 6');
insert into CORNERS values(3,'Free Parking','Nothing happens');
insert into CORNERS values(4,'Go To Jail','Go To Jail');

insert into PLAYER values(1,'Mary','Battleship','Free Parking',90,2,23);
insert into PLAYER values(2,'Bill','Dog','Sackville',110,3,31);
insert into PLAYER values(3,'Jane','Car','Waterloo',50,0,17);
insert into PLAYER values(4,'Norman','Tophat','GO!',130,1,25);

insert into TOKEN values('Dog',1,2);
insert into TOKEN values('Tophat',1,4);
insert into TOKEN values('Battleship',1,1);
insert into TOKEN(Name,Selected) values('Iron',0);
insert into TOKEN values('Car',1,3);

insert into STREETS values('Kilburn',10,1,'Yellow');
insert into STREETS values('Waterloo',10,2,'Yellow');
insert into STREETS values('Roscoe',20,1,'Green');
insert into STREETS values('Opal Hall',20,2,'Green');
insert into STREETS values('Ronson Hall',30,2,'Red');
insert into STREETS(Name,Cost,Colour) values('Sudgen Sports',30,'Red');
insert into STREETS values('Sackville',40,4,'Blue');
insert into STREETS(Name,Cost,Colour) values('Alan Turing',40,'Blue');
```

Create a table to record the round number (as a PK).

Because Jane is the first player to roll, so we assume that whenever Jane
(ID=3) rolls once, the round number+1.

SQL statements:

```sql
create table TURN_AUDIT_TRAIL
(RoundNum int ,
 P_ID int,
 primary key(RoundNum,P_ID),
 foreign key(P_ID) references PLAYER(ID)
);
insert into TURN_AUDIT_TRAIL values(0,3);
```

SQL statements R1-R15:

```sql
# R1 CREATE VIEW
CREATE VIEW view_Players(Round_Num,Player_ID,Current_Balance,No_Properties,Space)
AS
SELECT TURN_AUDIT_TRAIL.RoundNum, Player.ID,PLAYER.Balance, PLAYER.No_Properties, PLAYER.C_Location
FROM PLAYER,TURN_AUDIT_TRAIL
ORDER BY Balance DESC;

SELECT * FROM monopoly_board_game.view_players;
```

```sql
#----------ROUND 1---------
# R2 - Jane rolls a 3 (lands on chance and win a dance competition)
UPDATE TURN_AUDIT_TRAIL
SET RoundNum=1
where P_ID=3;
UPDATE PLAYER
SET Balance= Balance+20,C_Location='Chance'
WHERE ID=3;
UPDATE CHANCE
SET Times_Used=Times_Used+1
WHERE ID=1;

# R3 - Norman rolls a 1 (lands on Kilurn which is owned by Mary)
UPDATE PLAYER
SET Balance= Balance-10,C_Location='Kilurn'
WHERE ID=4;
UPDATE PLAYER
SET Balance= Balance+10
WHERE ID=1;

# R4 - Mary rolls a 4 (Go to Jail)
UPDATE PLAYER
SET C_Location='JAIL'
WHERE ID=1;

# R5 - Bill rolls a 2 (lands on Alan Turing and buy it)
UPDATE PLAYER
SET Balance= Balance-40 ,C_Location='Alan Turing',No_Properties=No_Properties+1
WHERE ID=2;
UPDATE STREETS
SET OWNER='2'
WHERE Name='Alan Turing';
```

```sql
#------ROUND 2----------
UPDATE TURN_AUDIT_TRAIL
SET RoundNum=RoundNum+1
where P_ID=3;
# R6 - Jane rolls a 4 (lands on chance win a free move forwards 3 spaces
# and then lands on Sackville which is owned by Norman)
UPDATE CHANCE
SET Times_Used=Times_Used+1
WHERE ID=3;
UPDATE PLAYER
SET Balance= Balance-40 ,C_Location='Sackville'
Where ID=3;
UPDATE PLAYER
SET Balance= Balance+40
Where ID=4;

#R7 - Norman rolls a 4 (lands on Roscoe which is owned by Mary)
UPDATE PLAYER
SET Balance= Balance-20 ,C_Location='Roscoe'
Where ID=4;
UPDATE PLAYER
SET Balance= Balance+20
Where ID=1;

#R8 - Mary rolls a 5 (Mary is in Jail, so nothing happened)

# R9 - Bill rolls a 6, he then rolls a 1
#(lands on Roscoe first,and then go to chance win a dance competition)
UPDATE PLAYER
SET C_Location='Chance'
Where ID=2;
UPDATE PLAYER
SET Balance= Balance+20
Where ID=1;
UPDATE CHANCE
SET Times_Used=Times_Used+1
WHERE ID=1;

#R10 - An updated screen shot of the view created in R1
SELECT * FROM monopoly_board_game.view_players;
```

```sql
#-------ROUND 3----------
UPDATE TURN_AUDIT_TRAIL
SET RoundNum=3
where P_ID=3;

#R11 - Jane rolls a 4 (lands on Kilburn which is owned by Mary)
UPDATE PLAYER
SET Balance= Balance-10 ,C_Location='Kilburn'
Where ID=3;

UPDATE PLAYER
SET Balance= Balance+10
Where ID=1;

#R12 - Norman rolls a 5 (lands on Chance and pay taxes 30)
UPDATE PLAYER
SET Balance= Balance-30 ,C_Location='Chance'
Where ID=4;

#R13 - Mary rolls a 6, she then rolls a 1(able to move out of Jail and lands on Roscoe)
UPDATE PLAYER
SET C_Location='Roscoe'
Where ID=1;

#R14 - Bill rolls a 6, he then rolls a 1 (lands on Go to Jail)
UPDATE PLAYER
SET C_Location='Jail'
Where ID=2;

#R15 - Display the player id, current balance, no_properties and the space then finish on.
#They should be in order of greatest balance at the top
SELECT * FROM monopoly_board_game.view_players;
```

Screen shot of initial view:

Round_Num	Player_ID	Current_Balance	No_Properties	Space
0	4	130	1	GO!
0	2	110	3	Sackville
0	1	90	2	Free Parking
0	3	50	0	Waterloo

Second Screen shot:

Round_Num	Player_ID	Current_Balance	No_Properties	Space
2	1	140	2	JAIL
2	4	140	1	Roscoe
2	2	70	4	Chance
2	3	30	0	Sackville

Final screen shot:

Round_Num	Player_ID	Current_Balance	No_Properties	Space
3	1	150	2	Roscoe
3	4	110	1	Chance
3	2	70	4	Jail
3	3	20	0	Kilburn