CPCS241-Database I-Spring2019-Project

Erwaa Projects System

DB Design

Group No: 12

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PART I: Analysis

1 Problem Definition and Data Requirements

1.1 Problem Description

Water shortage is a life-threatening risk people face in certain parts of the world, it directly affects economic, social, political and environmental aspects of their lives.

The solution to this type of problem is complicated and could take years in research and implementation, one of the best solutions is Charitable organizations, for example, the charity Erwaa Association. Erwaa aims to on increasing the quality of life for areas in need by offering many types of water services in Saudi Arabia.

They also work on raising awareness in society by hosting events and encouraging donations to their projects, because of how many projects they work on concurrently and the amount of donations, donors, sponsors and other charities they deal with on a daily basis, a database system for their association is a must that will help increase their productivity and organize their work.

1.2 Data Requirements

1. The association can work on multiple projects, each project has the following data: id, name, location (region, province and city) , project budget (estimated cost) , expected start and finish dates , implementation stages, bank account, the employee who worked on this project and number of its working hours , the funder (supporting entity) and state of the project (finished or in progress).
2. Each Employee has a unique national ID number, name, date of birth , salary ,and the notes.
3. There are 3 departments, each department has id, name, manager, employees, No. of employees.
4. Project shareholders are individuals (donors) , or the funder.
5. The funder is another charity , ministry or charitable waqf ,each funder has the following data: id , name, representative to them and funded money.

6. Eeach representative has : id , name and contact number.
7. Erwaa's bank account has the : id , IBAN and name.
8. Each Implementation stage of the project has : id , name , cost , start and finish date and it's executive company.
9. Executive company has : id , name and contact number.

1.3 Business Rules

1. Each employee must work for only one department.
2. Each department must have unique name.
3. A single bank account can be used for more than one project.
4. The funder can have more one representative (such as, representative for each project).
5. In a singhe project , the funder must have one representative.
6. The contact number of the Representative must be not null.
7. Each Funder can sport more one project at a time.
8. The executive company can implement more than one stage, but the one stage implemented by one company only.
9. The cost of the one stage must be <=50000000.

1.4 Intended Output of the system

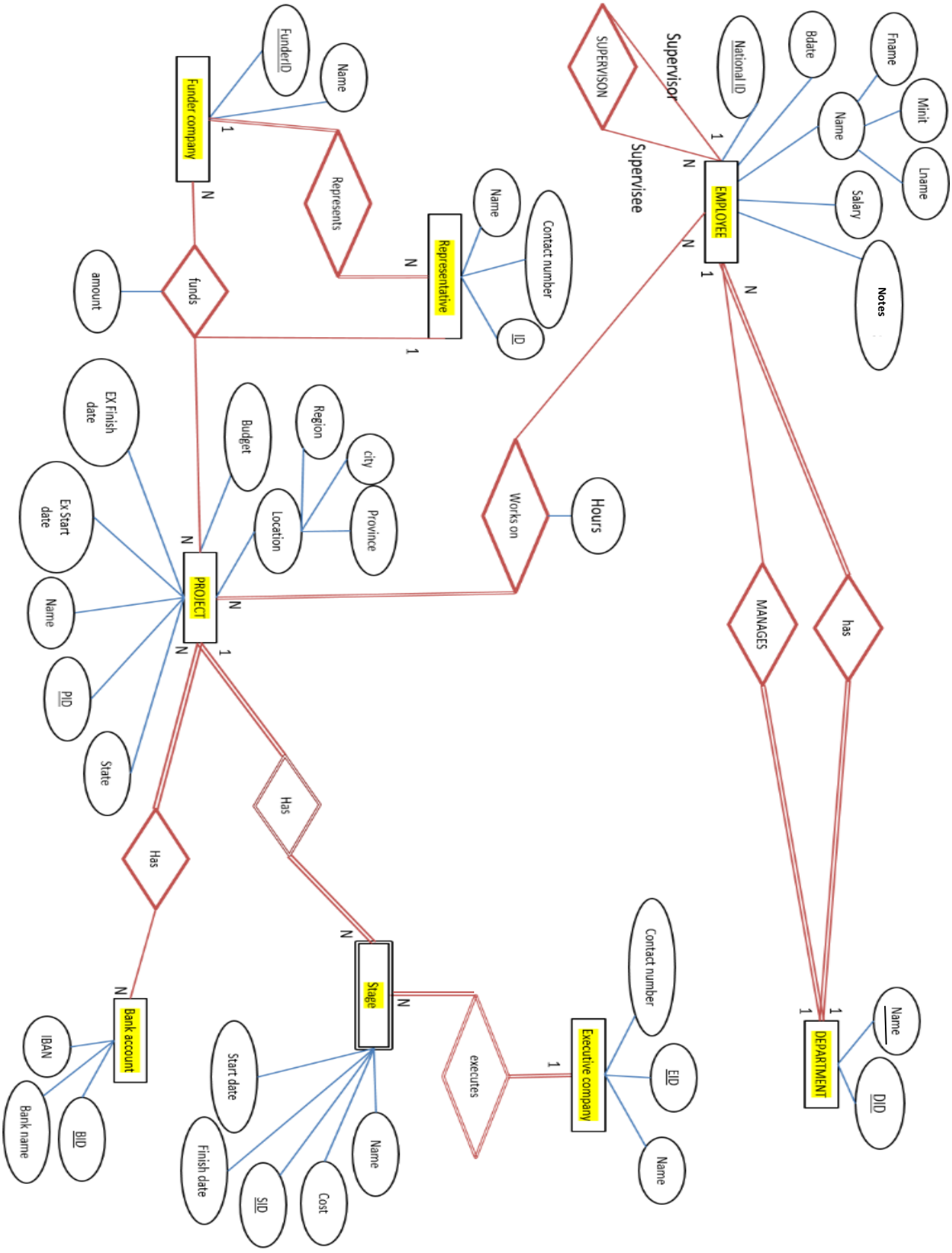
The system should be designed such that the database should produce reports such as:

1. Print representative name, representative contact number, and the name of Funder company which he works for it (if he represents two or more project).
2. For each project print project names ,project expected finish date and project actual finish date.
3. For each project print project names ,project expected cost and project actual cost.
4. For each finished project print Funder company*/companies* Name and its total funds.
5. Print the ID and Name of each Funder Company that Funds a project not in 'Makkah' city .
6. For each employee, print the NationalID, employees' firstName and LastNames, and the total number of its work hours, (include even employees who did works on project).

PART II: DB DEISGN

2 ER Diagram Design

2.1 ER diagram

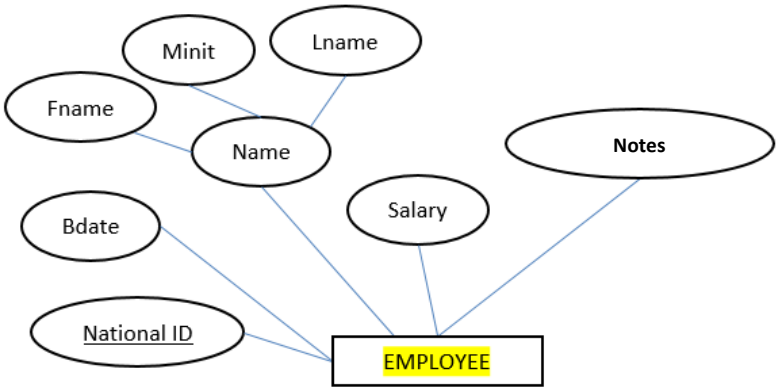


2.2 Design of Business Rules

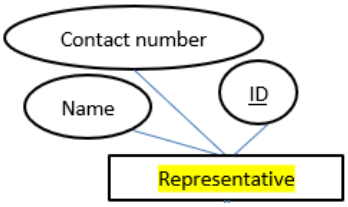
Business rule	Design decisions	Justification (if any)
Each employee must work for only one department	A 1-N, full-participation relation between employee and department	
The Funder can sport more one project at a time.	-	
The funder can have more one representative (such as, representative for each project).	A 1-N, full-participation relation between Funder and Representative	To add more flexibility to the system
Each department must have UNIQUE name.	-	We can do it in implementation time not here.
The cost of the one stage must be <=50000000.	-	We can do it in implementation time not here.
The contact number of the Representative must be not null.	-	We can do it in implementation time not here.

2 ER-to-logical schema mapping

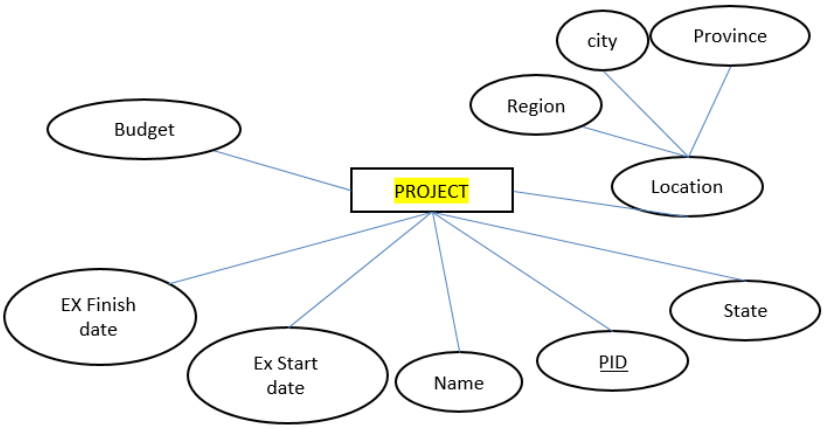
3.1 Mapping of Regular Entity Types



EMPLOYEE						
EP National ID	EP Fname	EP Mint	EP Lname	Salary	EP Bdate	**Notes**

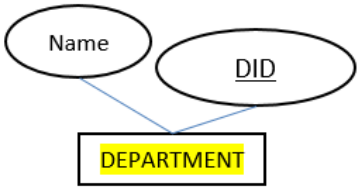


representative		
Rep ID	REP name	Cntact number



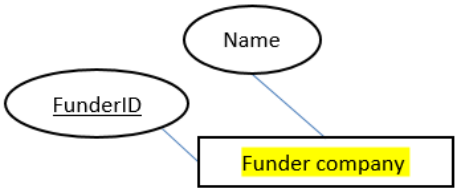
project

PJ ID	PJ Name	Ex Start date	EX Finish date	State	Budget	Region	City	Province



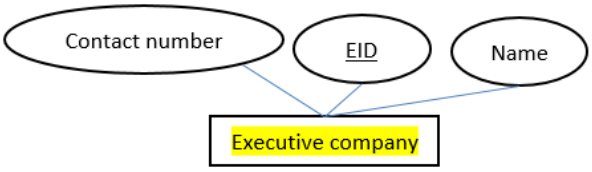
DEPARTMENT

DP ID	DP NAME

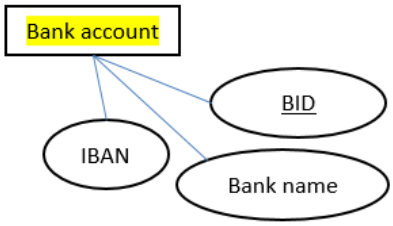


Funder company

F ID	F name

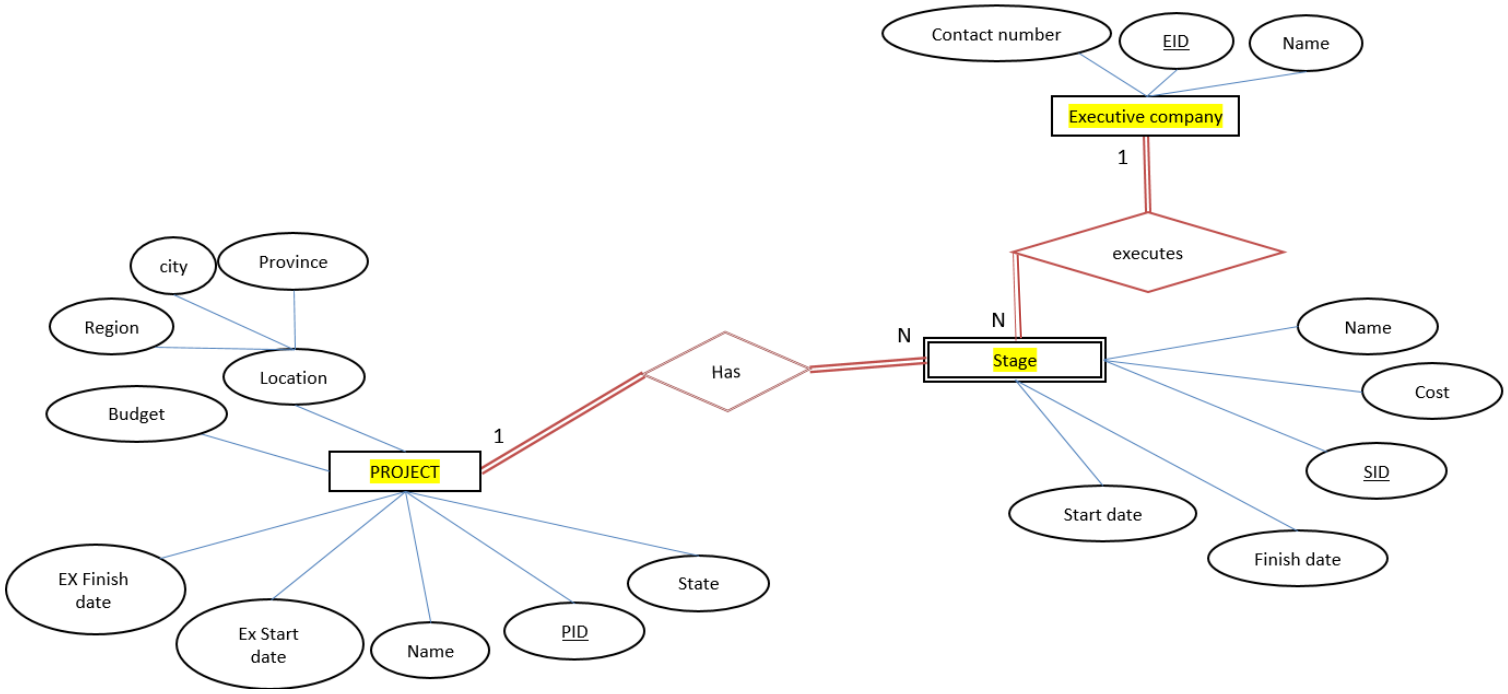


Executive company		
EC ID	EC name	EX Cntact number



Bank account		
B ID	IBAN	B name

3.2 Mapping of Weak Entity Types



project

PJ ID	PJ Name	Ex Start date	EX Finish date	State	Budget	Region	City	Province

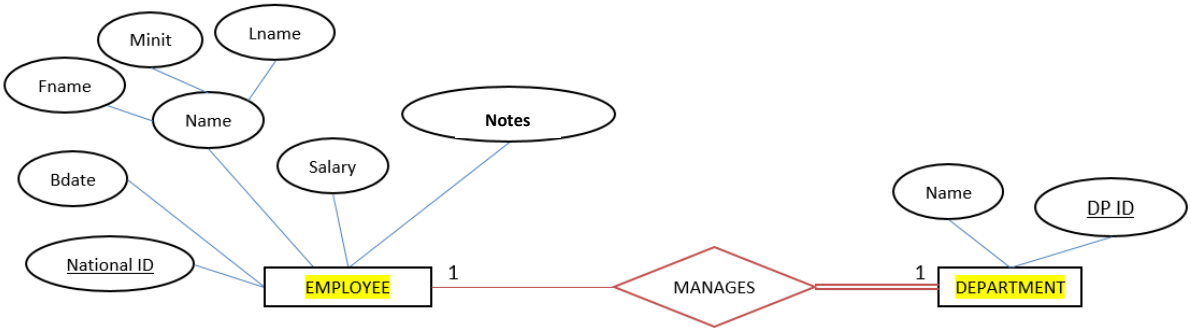
Stage

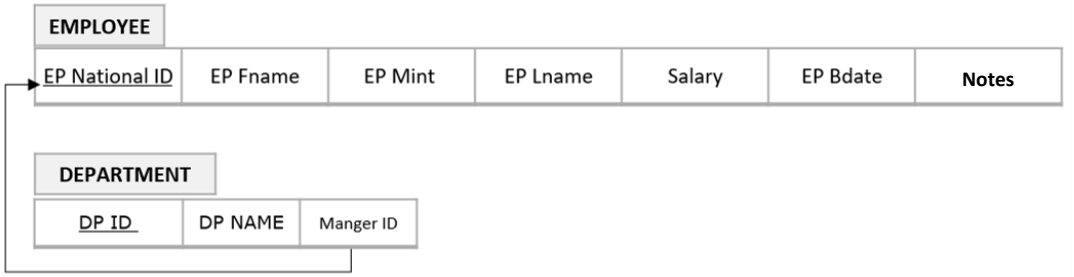
PJ ID	EC ID	S ID	S Name	S Start date	S Finish date	Cost

Executive company

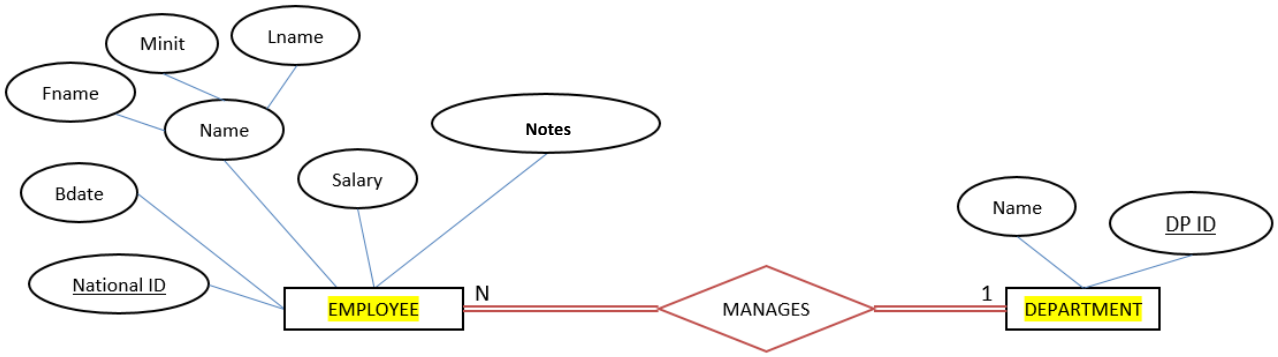
EC ID	EC name	EX Contact number

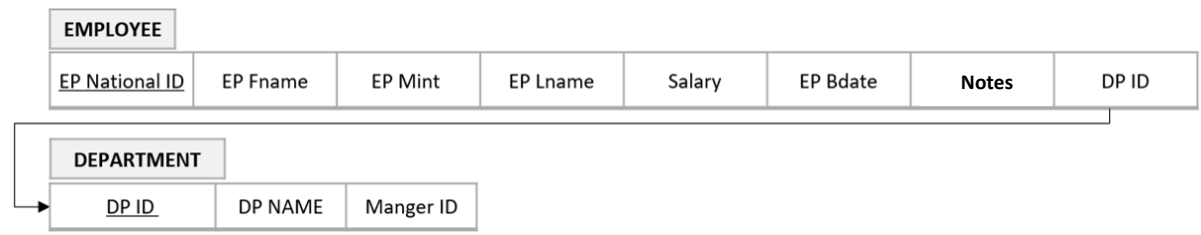
3.3 Mapping of binary 1-1 relationship types

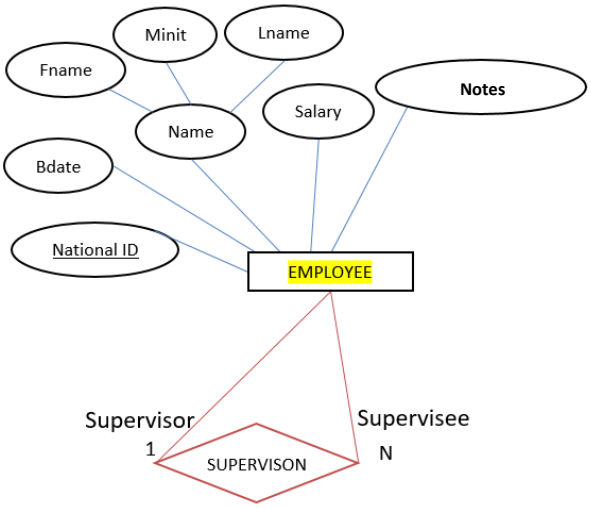




3.4 Mapping of binary 1-N relationship types

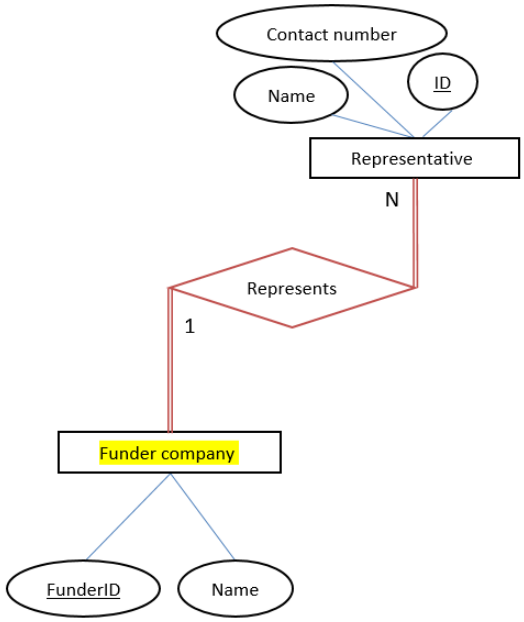






EMPLOYEE

EP National ID	EP Fname	EP Mint	EP Lname	Salary	EP Bdate	Notes	DP ID	Supervisor ID



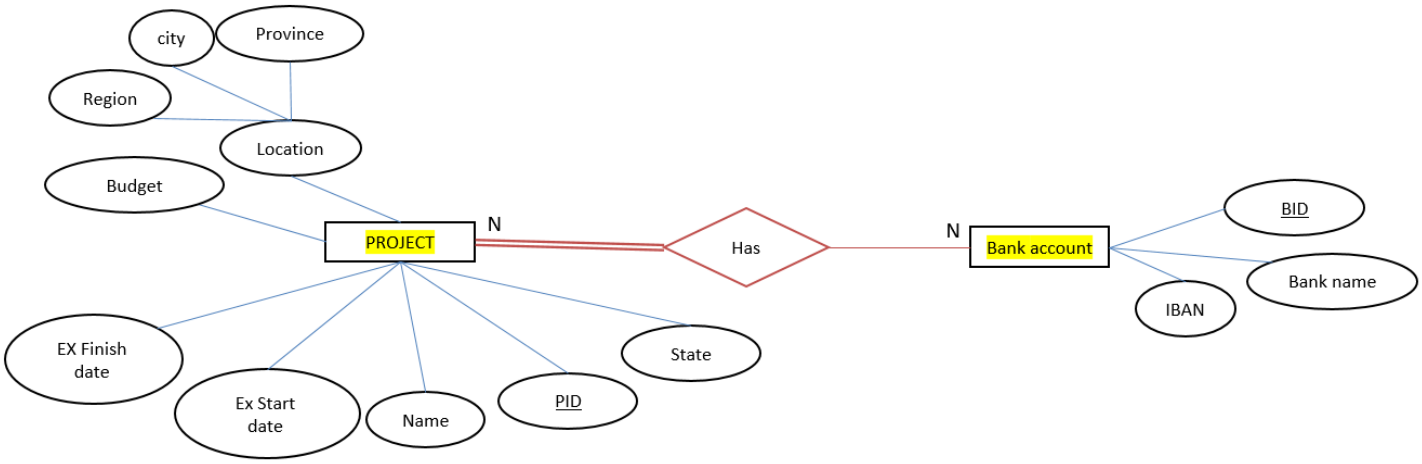
representative

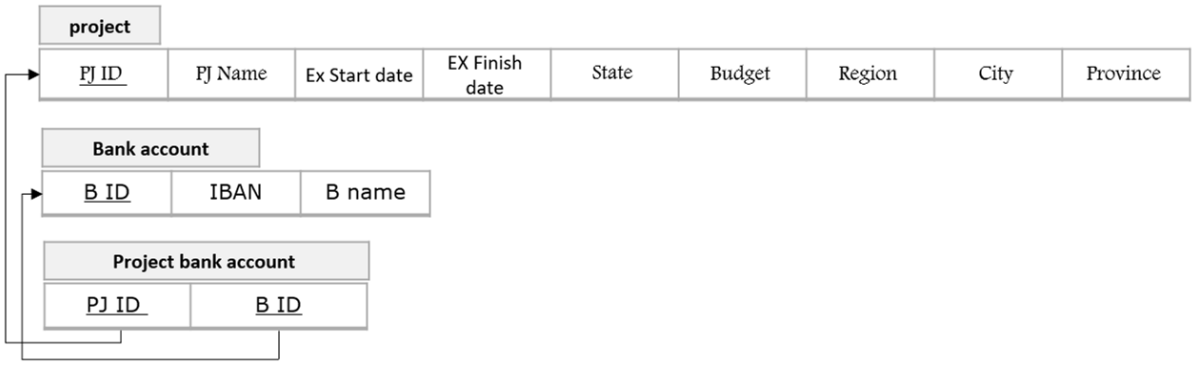
Rep ID	REP name	Contact number	F ID

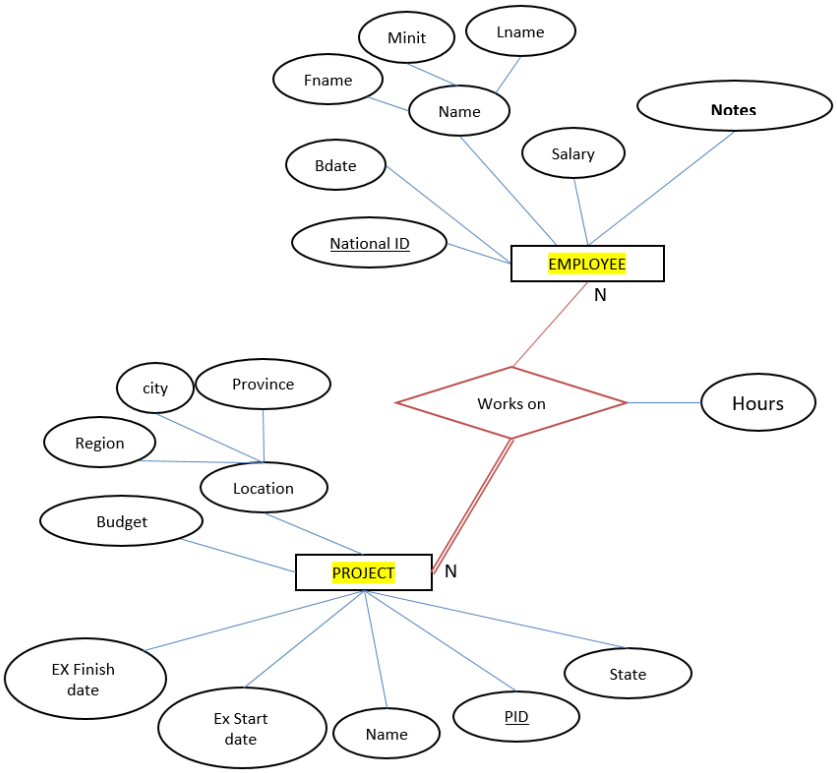
Funder company

F ID	F name

3.5 Mapping of binary M-N relationship types







EMPLOYEE

EP National ID	EP Fname	EP Mint	EP Lname	Salary	EP Bdate	Notes	DP ID	Supervisor ID

project

PJ ID	PJ Name	Ex Start date	EX Finish date	State	Budget	Region	City	Province

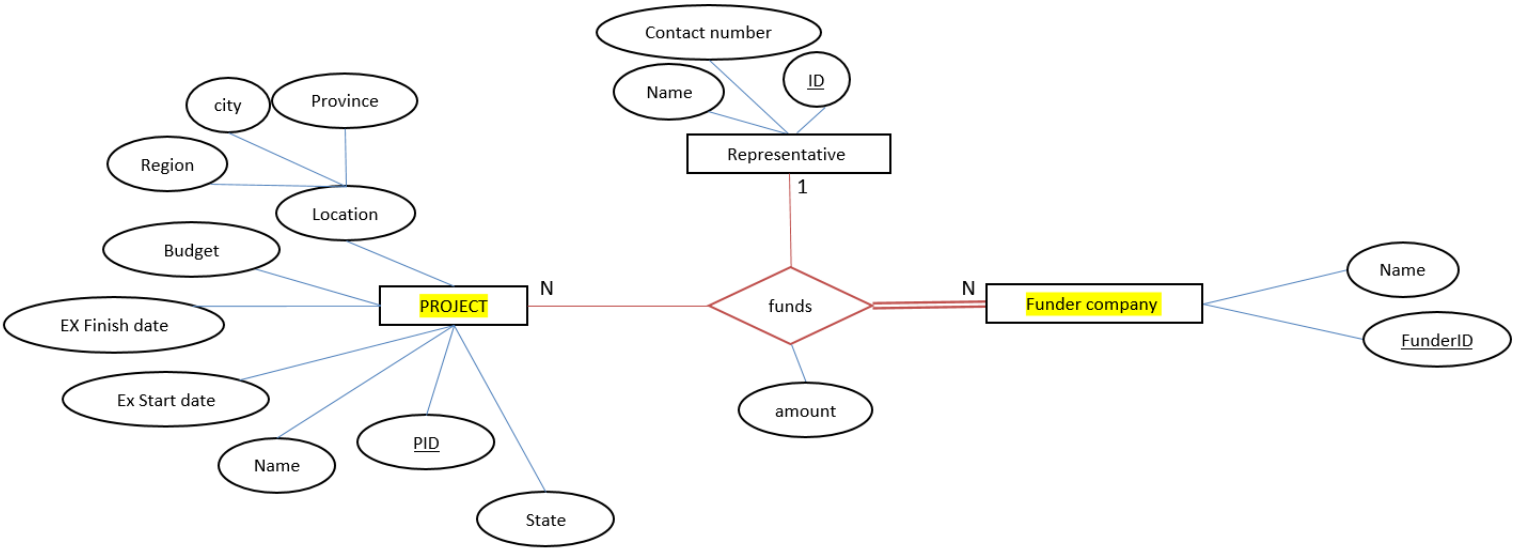
WORKS ON

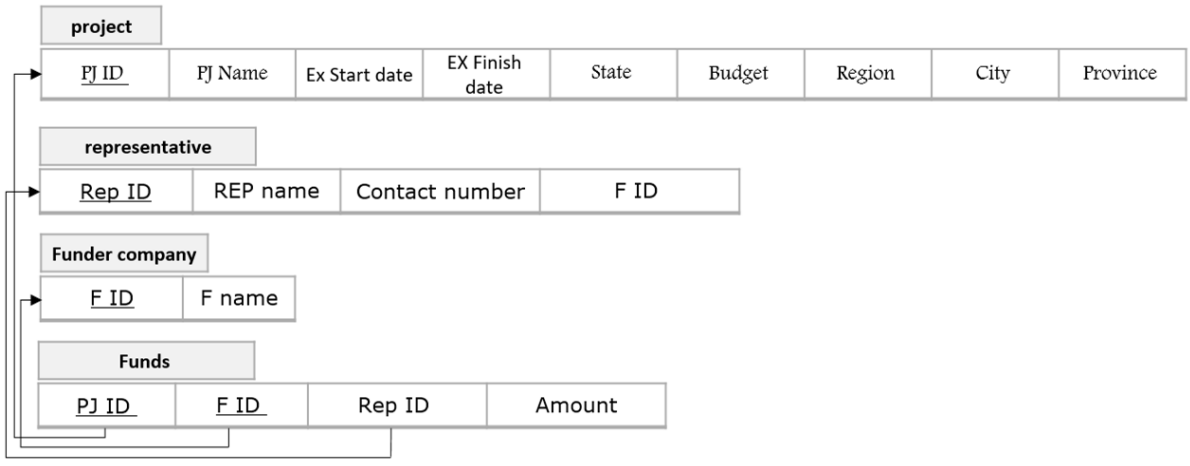
PJ ID	EP National ID	Work hours

3.6 Mapping of multivalued attributes

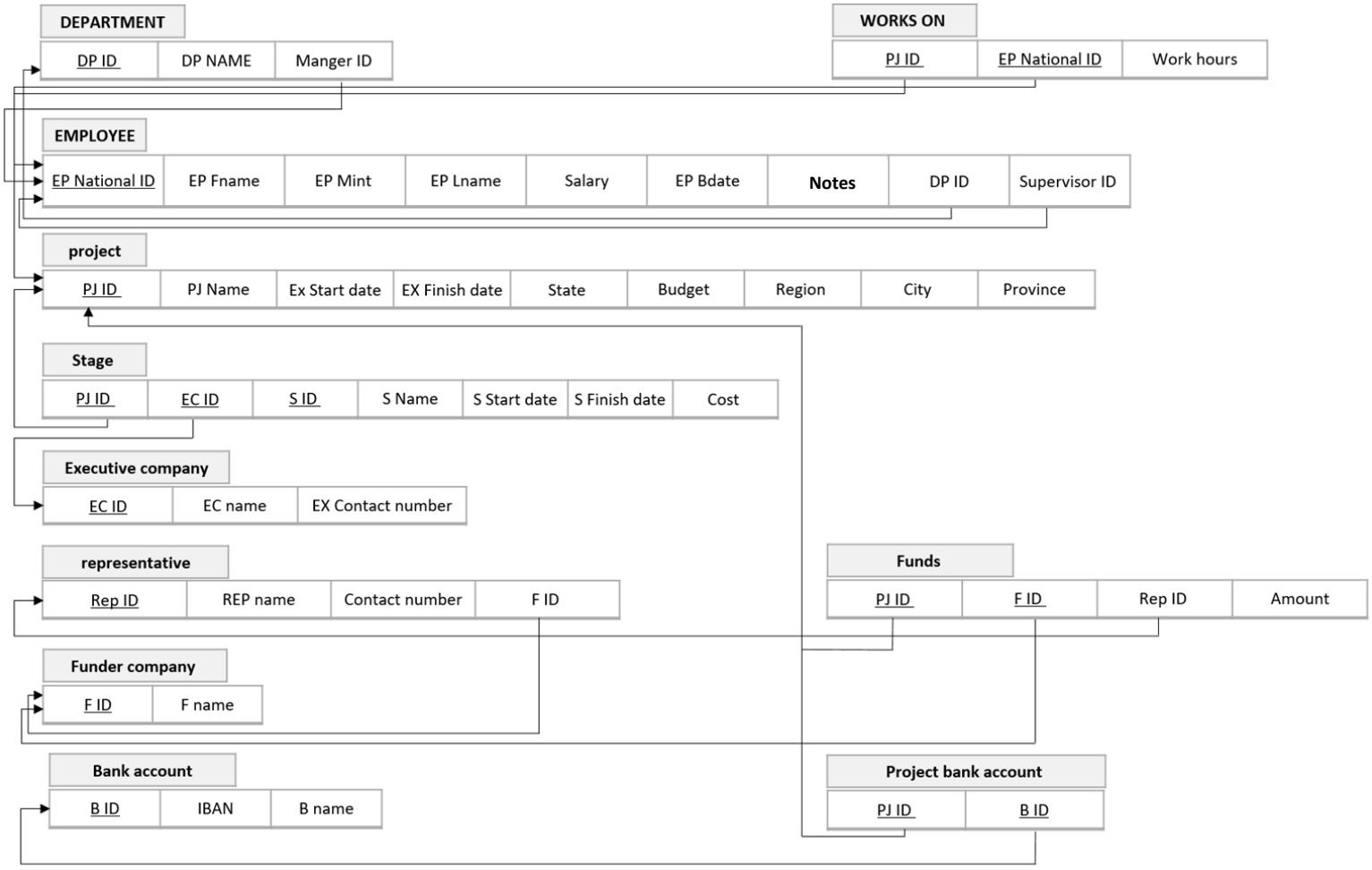
The ER does not have multivalued attributes.

3.7 Mapping of n-ary relationship types





3.8 Schema Diagram



3 Normalization

Functional dependencies

4.1 First Normal Form

All tables are in 1NF

Reason: there is no multivalued attributes or nested relation in our schema

(All the attributes are atomic).

4.2 Second Normal Form

All tables are in 2NF

Reason: all tables are in 1NF and there is no partial functional dependency

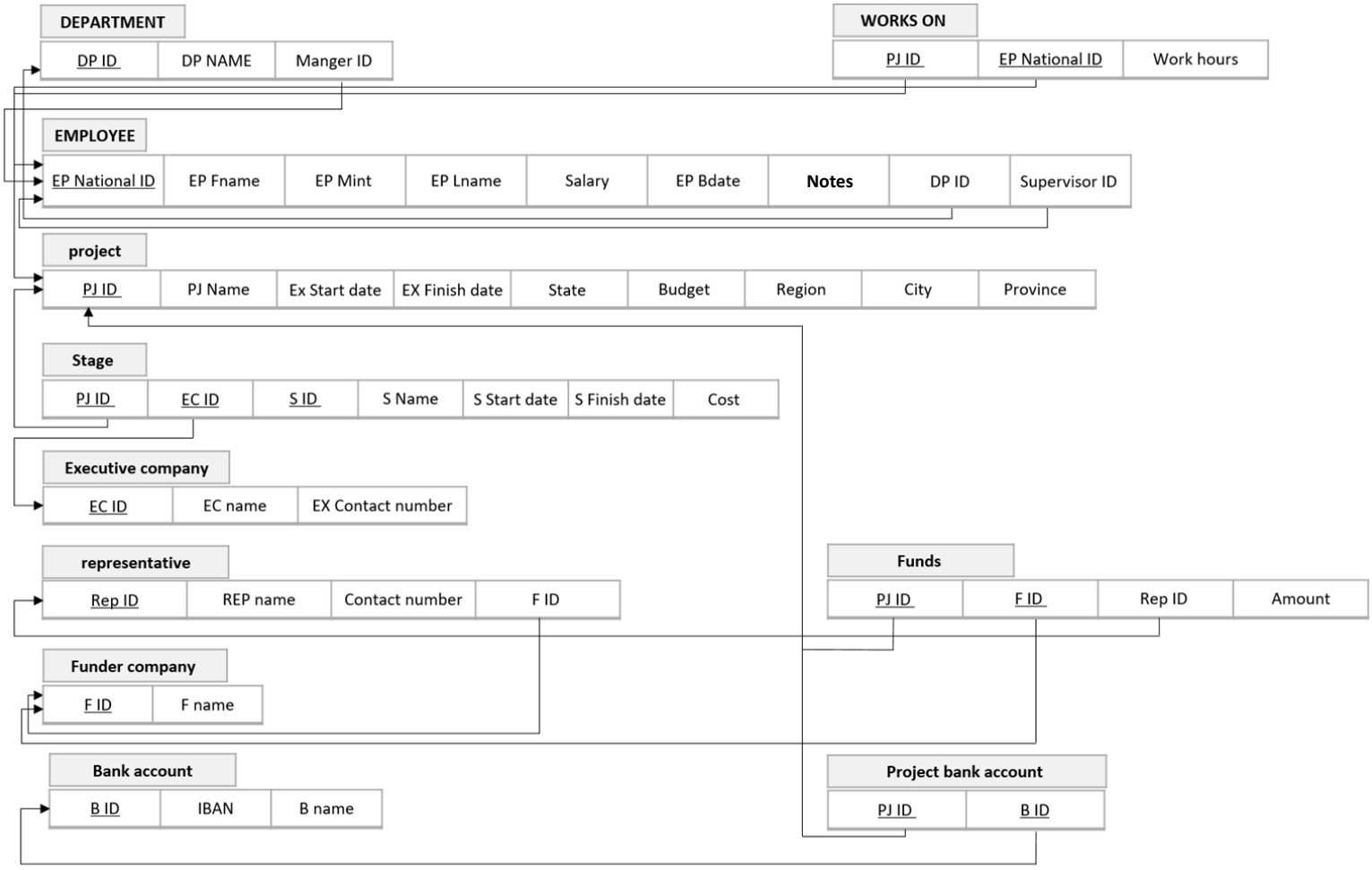
4.3 Third Normal Form

All tables are in 3NF

Reason: all tables are in 1NF & 2NF and there is no transitive functional dependency on PK PK

5 Final DB Schema Diagram

Same the Schema Diagram.



PART III: IMPLEMENTATION

6 Table Creation Script

6.1 < *EMPLOYEE* > TABLE

```
CREATE TABLE EMPLOYEE(
NationalID NUMBER(10) PRIMARY KEY ,
Fname VARCHAR2(20) NOT NULL ,
Mint VARCHAR2(20),
Lname VARCHAR2(20) ,
Salary NUMBER(10),
Bdate DATE ,
NOTE VARCHAR2(225),
DPID NUMBER(10),
SupervisorID NUMBER(10) );
alter table EMPLOYEE
add CONSTRAINT EMPSUPERFK FOREIGN KEY (SupervisorID) REFERENCES EMPLOYEE (NationalID)
add CONSTRAINT DP_ID FOREIGN KEY (DPID) REFERENCES department (DP_ID);
```

*Note: We added the CONSTRAINT after insertion commands so, we used the (alter).

9.2 < *PROJECT* > TABLE

```
CREATE TABLE PROJECT(
PJ_ID NUMBER(10) PRIMARY KEY ,
PJ_name VARCHAR2(20) NOT NULL ,
Ex_startDate DATE,
Ex_finishDate DATE,
state VARCHAR2(20),
Budget NUMBER(20) ,
```

```
Region VARCHAR2(20),
City VARCHAR2(20),
Province VARCHAR2(20));
```

9.3 < *WORKS_ON* > TABLE

```
CREATE TABLE WORKS_ON(
Works_hours NUMBER(10),
ProjectID NUMBER(10)  ,
NationalID NUMBER(10) ,
CONSTRAINT WORKONPK PRIMARY KEY(ProjectID,NationalID)  );
alter table WORKS_ON
add CONSTRAINT PROIDFK FOREIGN KEY (ProjectID) REFERENCES PROJECT(PJ_ID)
add CONSTRAINT EMPIDFK FOREIGN KEY (NationalID) REFERENCES EMPLOYEE(NationalID);
```

9.4 < *Department* > TABLE

```
CREATE TABLE Department(
DP_ID NUMBER(10) PRIMARY KEY ,
DP_name VARCHAR2(20) UNIQUE ,
Manger_ID  NUMBER(10) );
alter table Department
add CONSTRAINT MIDFK FOREIGN KEY (Manger_ID) REFERENCES EMPLOYEE(NationalID);
```

9.5 < *Funder_company* > TABLE

```
CREATE TABLE Funder_company (
F_ID number(10) PRIMARY KEY,
F_name varchar2(32) );
```

6.6 < *Representative* > TABLE

```
CREATE TABLE representative(
Rep_ID number(10)   PRIMARY KEY,
Rep_Name varchar2(50),
contactNum number(10)  NOT NULL ,
FunderID number(10) );
alter table representative
add CONSTRAINT FCIDFK FOREIGN KEY (FunderID) REFERENCES Funder_company (F_ID) ;
```

6.7 < Funds > TABLE

```
CREATE TABLE Funds (
Project_ID  number(10) ,
F_ID number(10) ,
amount number(10),
Rep_ID number(10),
CONSTRAINT FOUNDSPK PRIMARY KEY( Project_ID , F_ID ) );
alter table Funds
add CONSTRAINT REPIDFFK FOREIGN KEY (Rep_ID) REFERENCES representative(Rep_ID)
add CONSTRAINT FCIDFFK  FOREIGN KEY (F_ID) REFERENCES funder_company(f_id)
add CONSTRAINT PROIDFFK FOREIGN KEY (Project_ID) REFERENCES project (pj_id);
```

6.٨ < *Bank_Acount* > TABLE

```
CREATE TABLE Bank_Acount (
B_ID number(10)  PRIMARY KEY,
B_name varchar(32),
IPAN varchar2(35) UNIQUE );
```

6.9 < *Executive_company* > TABLE

```
CREATE TABLE Executive_company (
EC_ID  number(10)  PRIMARY KEY,
EC_name varchar2(32),
Ex_contactNum number(10) NOT NULL );
```

6.10 < *Project_bankAccount* > TABLE

```
CREATE TABLE Project_bankAccount (
B_ID number(10),
Pj_ID number(10),
CONSTRAINT PBAPK PRIMARY KEY( B_ID , Pj_ID ) );
alter table Project_bankAccount
add CONSTRAINT PIDFK  FOREIGN KEY (Pj_ID) REFERENCES project (PJ_ID )
ADD CONSTRAINT BIDFK  FOREIGN KEY (B_ID) REFERENCES bank_acount(B_ID);
```

6.11 < STAGES > TABLE

```
CREATE TABLE STAGES (
Project_ID NUMBER(10) ,
EC_ID  NUMBER (10) ,
S_id NUMBER (10),
S_name varchar2(50),
StartDate date,
FinishDate date,
cost number(10) CHECK (cost <=50000000),
CONSTRAINT STAGEPK  PRIMARY KEY ( Project_ID , EC_ID , S_id ) );
alter table STAGES
add CONSTRAINT ECIDSFK  FOREIGN KEY (EC_ID) REFERENCES  Executive_company  (EC_ID)
add CONSTRAINT PROIDSFK FOREIGN KEY (Project_ID) REFERENCES  project (pj_id);
```

7 Constraints Script

Business Rule	SQL Script	Table
Each department must have UNIQUE name.	CREATE TABLE Department(.. DP_name VARCHAR2(20) UNIQUE ..);	Department
Each employee must work for only one department	CREATE TABLE EMPLOYEE(… DPID NUMBER(10), …); Alter table Employee add CONSTRAINT DP_ID FOREIGN KEY (DPID) REFERENCES department (DP_ID);	Employee
The Funder can work on more one project at a time.	-	-
The funder can have more one representative (such as, representative for each project).	CREATE TABLE representative(… FunderID number(10)); Alter table representative add CONSTRAINT FCIDFK FOREIGN KEY (FunderID) REFERENCES Funder_company (F_ID) ;	Representative
The cost of the one stage must be <=50000000.	CREATE TABLE STAGES (… cost number(10) CHECK (cost <=50000000), ..);	STAGES
The contact number of the Representative must be not null.	CREATE TABLE representative(… contactNum number(10) NOT NULL , …);	Representative

8 Queries

8.1 *<A representative who represents more than one project>*

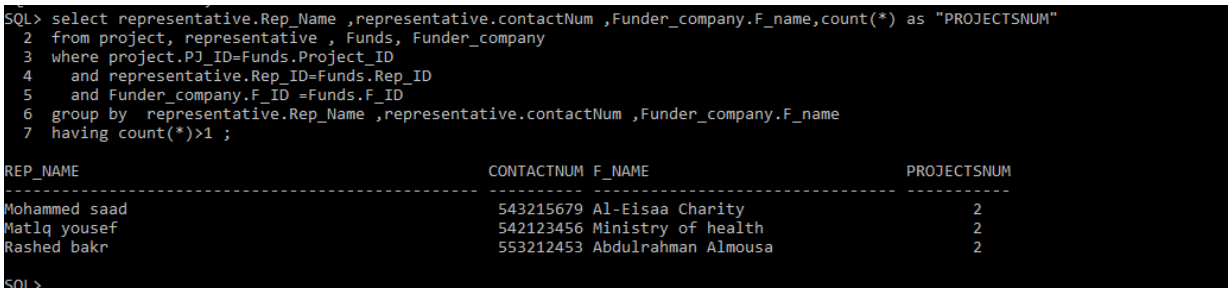
Query in natural language (ENGLISH)

Print representative name, representative contact number, and the name of Funder company which he works for it (if he represents two or more project)

SQL script

```
select representative.Rep_Name ,representative.contactNum ,Funder_company.F_name,count(*) as
"PROJECTSNUM"
from project, representative , Funds, Funder_company
where project.PJ_ID=Funds.Project_ID
  and representative.Rep_ID=Funds.Rep_ID
  and Funder_company.F_ID =Funds.F_ID
group by  representative.Rep_Name ,representative.contactNum ,Funder_company.F_name
having count(*)>1 ;
```

Caption of the first five rows of the output



```
SQL> select representative.Rep_Name ,representative.contactNum ,Funder_company.F_name,count(*) as "PROJECTSNUM"
  2  from project, representative , Funds, Funder_company
  3  where project.PJ_ID=Funds.Project_ID
  4    and representative.Rep_ID=Funds.Rep_ID
  5    and Funder_company.F_ID =Funds.F_ID
  6  group by  representative.Rep_Name ,representative.contactNum ,Funder_company.F_name
  7  having count(*)>1 ;

REP_NAME                                           CONTACTNUM F_NAME                          PROJECTSNUM
-------------------------------------------------- ---------- ------------------------------ -----------
Mohammed saad                                       543215679 Al-Eisaa Charity                         2
Matlq yousef                                        542123456 Ministry of health                       2
Rashed bakr                                         553212453 Abdulrahman Almousa                      2

SQL>
```

8.2 < *Expected and* actual finish date of projects >

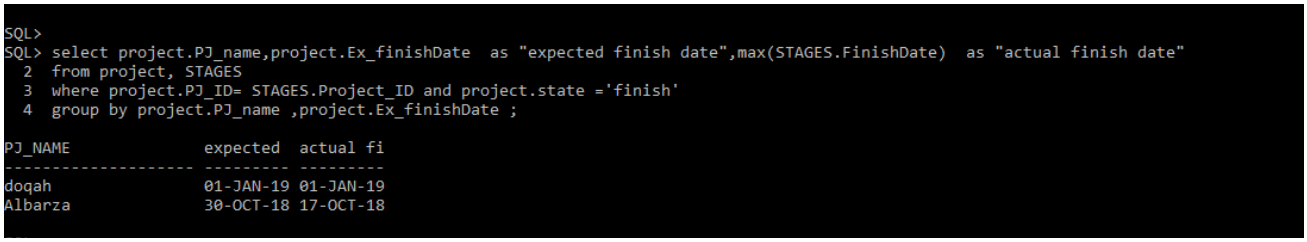
Query in natural language (ENGLISH)

For each project print project names ,project expected finish date and project actual finish date

SQL script

```
select project.PJ_name,project.Ex_finishDate  as "expected finish date",max(STAGES.FinishDate)  as
"actual finish date"
from project, STAGES
where project.PJ_ID= STAGES.Project_ID and project.state ='finish'
group by project.PJ_name ,project.Ex_finishDate ;
```

Caption of the first five rows of the output



```
SQL>
SQL> select project.PJ_name,project.Ex_finishDate  as "expected finish date",max(STAGES.FinishDate)  as "actual finish date"
  2  from project, STAGES
  3  where project.PJ_ID= STAGES.Project_ID and project.state ='finish'
  4  group by project.PJ_name ,project.Ex_finishDate ;

PJ_NAME              expected  actual fi
-------------------- --------- ---------
doqah                01-JAN-19 01-JAN-19
Albarza              30-OCT-18 17-OCT-18
```

8.3 < *Expected and* actual cost of projects >

Query in natural language (ENGLISH)

For each project print project names ,project expected cost and project actual cost

SQL script

```
select project.PJ_name, project.Budget as "expected cost",sum(STAGES.cost) as "actual cost"
from project,STAGES
where project.PJ_ID =STAGES.Project_ID
group by project.PJ_name,project.Budget;
```

Caption of the first five rows of the output

```
SQL>
SQL> select project.PJ_name, project.Budget as "expected cost",sum(STAGES.cost) as "actual cost"
  2  from project,STAGES
  3  where project.PJ_ID =STAGES.Project_ID
  4  group by project.PJ_name,project.Budget;

PJ_NAME              expected cost actual cost
-------------------- ------------- -----------
Shaqra                      650000      465000
umq                         800000      810000
seha                        700000       10000
soquya                   100000000    50500000
doqah                       700000      525000
```

8.4 *< Funder company/companies of* finished projects >

Query in natural language (ENGLISH)

For each finished project print Funder company*/companies* Name and its total funds.

SQL script

Select f_name, sum(amount) as "TOTAL AMOUNT"

From funder_company, funds, project

Where project.pj_id=funds.project_id
 and funds.f_id = funder_company.f_id
 and project.pj_id IN (select pj_id from project Where state='finish')
Group by f_name ;

Caption of the first five rows of the output

```
SQL>
SQL>
SQL> Select f_name, sum(amount)  as "TOTAL AMOUNT"
  2  From funder_company, funds, project
  3  Where project.pj_id=funds.project_id
  4    and funds.f_id = funder_company.f_id
  5    and project.pj_id IN (select pj_id From project Where state='finish')
  6  Group by f_name ;

F_NAME                         TOTAL AMOUNT
------------------------------ ------------
Awqaf Al-dehaian                     700000
Al-Eisaa Charity                     650000
```

8.5 *< Funder companies of projects except* 'Makkah' projects >

Query in natural language (ENGLISH)

Print the ID and Name of each Funder Company that Funds a project not in 'Makkah' city .

SQL script

```
Select Funder_company.F_ID , Funder_company.F_name

From Funder_company

Where Funder_company.F_ID  not In (select Funds.F_ID

                        from Funds,project

                        where project.City = 'Makkah'
 and project.PJ_ID=Funds.Project_ID);
```

Caption of the first five rows of the output

```
SQL>
SQL> Select Funder_company.F_ID , Funder_company.F_name
  2  From Funder_company
  3  Where Funder_company.F_ID  not In (select Funds.F_ID
  4                                    from Funds,project
  5                                    where project.City = 'Makkah'   and project.PJ_ID=Funds.Project_ID);

     F_ID F_NAME
---------- --------------------------------
     1000 Awqaf Al-dehaian
     1001 Ministry of health
     1002 Abdulrahman Almousa
     1003 Al-Eisaa Charity
     1004 Awqaf mohamed abdullh
```

8.6 < *Work hours of each* employee >

Query in natural language (ENGLISH)

For each employee, print the NationalID, employees' firstName and LastNames, and the total number of its work hours,
(include even employees who did works on project).

SQL script

```
select EMPLOYEE.NationalID, EMPLOYEE.Fname ,EMPLOYEE.Lname,
sum(NVL(WORKS_ON.Works_hours,0)) as "total of work hours"
from EMPLOYEE left join WORKS_ON on EMPLOYEE.NationalID = WORKS_ON.NationalID
group by EMPLOYEE.NationalID , EMPLOYEE.Fname ,EMPLOYEE.Lname ;
```

Caption of the first five rows of the output

```
SQL> select EMPLOYEE.NationalID, EMPLOYEE.Fname ,EMPLOYEE.Lname, sum(NVL(WORKS_ON.Works_hours,0)) as "total of work hours"
  2  from EMPLOYEE left join WORKS_ON on EMPLOYEE.NationalID = WORKS_ON.NationalID
  3  group by EMPLOYEE.NationalID , EMPLOYEE.Fname ,EMPLOYEE.Lname ;

NATIONALID FNAME               LNAME               total of work hours
---------- -------------------- -------------------- -------------------
 102854538 yousef               alsageer                              0
 102345245 abdullah             alsaleem                              0
 100078394 sultan               Aldwish                              34
 107364896 abdulaziz            alhamed                              50
 104673920 ibrahim              alhaidri                             26
```

APPENDIX

Employee

National ID	Fname	Mint	Lname	Salary	Bdate	Notes	DPID	SupervisorID
100023421	abdulrahman	saad	almosa	15,000	1972-07-31	'A businessman interested to support charity'	001	100023421
102345245	abdullah	yehia	alsaleem	10,000	1983-03-29	'Specializes in management , asset management'	001	102345245
100078394	sultan	mohamed	Aldwish	7,000	1990-05-31	'Specializes in management , asset management'	002	102345245
102735478	abdullah	saleh	alhussien	6.500	1976-08-23	'Specializes in management , asset management'	001	102345245
107364896	abdulaziz	abdullah	alhamed	6,000	1986-08-18	'An academic specializing in water resources engineering and hydraulics'	003	102345245
102364538	abdulellah	abdulaziz	almosa	6,000	1984-05-30	'A businessman interested to support charity'	001	102345245
109735473	ibrahim	saad	aljadee	9,000	1987-05-10	'An academic specializing in environmental engineering, water treatment and distribution.	001	109735473
104673920	yousef	saleh	alsageer	8,560	1972-03-31	An academic and inventor in chemical engineering and interested in charity work.	003	109735473
104673920	ibrahim	suliman	alhaidri	8,500	1989-07-05	An academic specializing in management and marketing, and interested in charity work	001	100023421
101275378	sharehk	ibrahim	alsharehk	9,000	1981-07-09	specializes in chemical engineering and interested in charity work	002	100023421

Works_ON

Works_hours	Project ID	National ID
34	1	100078394
32	2	102735478
30	1	109735473
26	2	104673920
30	3	109735473
10	4	107364896
40	6	107364896
22	2	109735473
22	2	100023421
22	5	100023421

Department

DP_ID	DP_name	Manger_ID
1	Administration	100023421
2	executive	102345245
3	Financial	109735473

representative

Rep_ID	Rep_Name	contactNum	FunderID
121234	Saeed saleh	0543212340	1000
135235	Mohammad ahmad	0542165951	1000
121289	Abdullah alshareef	0543217040	1000
121235	Matlq yousef	0542123456	1001
121236	Rashed bakr	0553212453	1002
121263	Ahmed salem	0553213201	1002
121238	Mohammed saad	0543215679	1003
121898	Yaser selyman	0543211239	1004
121210	yheya asead	0543213219	1001
121321	soltan hamdan	0543217859	1004

Project

PJ_ID	PJ_name	Ex_startDate	Ex_finishDate	state	Budget	Region	City	Province
1	soquya	2018-07-31	2019-05-23	In-progress	100,000,000	Makkah	Jeddah	Jeddah
2	A'thb	2018-05-01	2019-09-31	In-progress	800,000	Sabt al-alayah	aseer	Sabt al-alayah
3	doqah	2018-08-13	2019-01-01	finish	700,000	doqah	alqunfothah	makkah
4	Albarza	2017-12-31	2018-10-30	finish	650,000	Makkah	Makkah	Makkah
5	Shaqra	2018-02-26	2019-12-16	In-progress	650,000	Riyadh	Shaqra	Riyadh
6	Alja’aeza	2018-01-01	2020-01-01	In-progress	1,200,000	Makkah	Addam	Alja’aeza
7	Bashoot	2018-02-20	2021-10-15	In-progress	900,000	Sabt al-alayah	aseer	bashoot
8	umq	2018-02-19	2020-10-03	In-progress	800,000	tabook	umlj	umq
9	Ela'tanh	2018-05-10	2026-10-16	In-progress	800,000	Makkah	Alleth	alrahuah
10	seha	2018-01-22	2024-10-27	In-progress	700,000	Riyadh	Riyadh	Riyadh

Funder_company

F_ID	F_name
1000	Awqaf Al-dehaian
1001	Ministry of health
1002	Abdulrahman Almousa
1003	Al-Eisaa Charity
1004	A wqaf mohamed abdullh

Funds

Project_ID	F_ID	amount	Rep_ID
1	1000	100,000,000	121234
2	1002	800,000	121236
3	1000	700,000	121234
4	1003	650,000	121238
5	1001	650,000	121235
6	1001	1,200,000	121235
7	1002	900,000	121236
8	1002	800,000	121236
9	1000	800,000	121234
10	1003	700,000	121238

Bank_Acount

B_ID	B_name	IPAN
12983322	Alahli bank	3704 0044 0532 0130 00
12983324	Alrajhi bank	4567 0076 0274 0430 00

Project_bankAccount

B_ID	Pj_ID
12983322	1
12983324	2
12983324	3
12983324	4
12983322	5
12983322	6
12983324	7
12983322	8
12983322	9
12983324	10

Stages

Project_ID	S_id	S_name	StartDate	FinishDate	cost
1	1	planning	2018-07-31	2018-08-31	500,000
1	2	construction	2018-09-01	null	50000000
2	1	planning	2018-05-14	2018-08-28	10000
2	2	construction	2018-08-29	2019-04-21	650000
3	1	planning	2018-08-13	2018-08-28	10000
3	2	construction	2018-09-02	2018-12-12	500000
3	3	tests	2018-12-29	2019-01-01	15000
4	1	planning	2017-12-31	2018-01-29	100000
4	2	construction	2018-02-02	2018-10-01	450000
4	3	tests	2018-10-02	2018-10-17	10000
5	1	planning	2018-02-20	2018-03-03	15000
5	2	construction	2018-04-21	null	450000
6	1	planning	2018-01-01	2018-02-01	100000
6	2	construction	2018-03-01	null	1000000
7	1	planning	2018-02-20	2018-03-21	15000
7	2	construction	2018-04-21	null	750000
8	1	planning	2018-02-19	2018-02-29	20000
8	2	construction	2018-03-03	null	790000
9	1	planning	2018-05-10	2018-05-25	25000
9	2	construction	2019-02-22	null	500000
10	1	planning	2018-01-22	2018-02-09	10000

Executive_company

EC_ID	EC_name	Ex_contactNum
1	Saudi Amana Contracting	0128735444
2	Al-rajhi constructing company	01266574737
3	SACODE CO	0555566678
4	MAPA constructing company	0118743322
5	AL-wadi for design and planning	0598777777
6	Medina united comapny	0117654567
7	Alfadel company construction	0123456789
8	Bena usakan constructing company	9009007678
9	Al-Dar constructions	9000070000
10	KOOB water solution	0113333344

```
INSERT INTO EMPLOYEE VALUES (100023421,'abdulrahman', 'saad','almosa',15000 ,to_date('1972-07-31','yyyy-mm-dd') ,'A businessman interested to support charity',001, 109735473);

INSERT INTO EMPLOYEE VALUES (102345245,'abdullah' ,'yehia','alsaleem',10000, to_date('1983-03-29','yyyy-mm-dd') ,'Specializes in management, asset management',001, 109735473);

INSERT INTO EMPLOYEE VALUES (100078394,'sultan' ,'mohamed' ,'Aldwish' ,7000 ,to_date('1990-05-31','yyyy-mm-dd') ,'A specialist in management and marketing, interested in charity work',002, 102345245);

INSERT INTO EMPLOYEE VALUES (102735478,'abdullah', 'saleh' , 'alhussien' ,6500 ,to_date('1976-08-23','yyyy-mm-dd'),'An academic in architecture, interested in charity work', 001,102345245);

INSERT INTO EMPLOYEE VALUES (107364896,'abdulaziz' , 'abdullah', 'alhamed',6000,to_date('1986-08-18','yyyy-mm-dd'),'An academic specializing in water resources engineering and hydraulics', 003,102345245);

INSERT INTO EMPLOYEE VALUES (102364538,'abdulellah' , 'abdulaziz', 'almosa' ,6000 ,to_date('1984-05-30','yyyy-mm-dd'),'A businessman interested to support charity',001,102345245);

INSERT INTO EMPLOYEE VALUES (109735473,'ibrahim','saad','aljadee' ,9000,to_date('1987-05-10','yyyy-mm-dd') , 'An academic specializing in environmental engineering, water treatment and distribution.',001 ,100023421);

INSERT INTO EMPLOYEE VALUES (102854538,'yousef','saleh','alsageer', 8560 ,to_date('1972-03-31','yyyy-mm-dd'),'An academic and inventor in chemical engineering, and interested in charity work.',003,109735473);

INSERT INTO EMPLOYEE VALUES (104673920,'ibrahim' ,'suliman','alhaidri' ,8500 ,to_date('1989-07-05','yyyy-mm-dd'),'An academic specializing in management and marketing, and interested in charity work',001,100023421);

INSERT INTO EMPLOYEE VALUES (101275378,'sharehk' ,'ibrahim' , 'alsharehk' ,9000 ,to_date('1981-07-09','yyyy-mm-dd'),'a specializes in chemical engineering and  interested in charity  work', 002,100023421);



INSERT INTO Department VALUES (001 ,'Administration', 100023421);

INSERT INTO Department VALUES (002 ,'executive', 102345245);

INSERT INTO Department VALUES (003 ,'Financial', 109735473);



CREATE SEQUENCE seq_PJ START WITH 0 INCREMENT BY 1 minvalue 0 ;

INSERT INTO Project VALUES (seq_PJ.Nextval,'soquya',to_date('2018-07-31','yyyy-mm-dd'),to_date('2019-05-23','yyyy-mm-dd'),'In-progress', 100000000,'Makkah','Jeddah','Jeddah');

INSERT INTO Project VALUES (seq_PJ.Nextval, 'A thb',to_date('2018-05-01','yyyy-mm-dd'),to_date('2019-09-29','yyyy-mm-dd') , 'In-progress', 800000 ,'aseer','Sabt al-alayah', 'Sabt al-alayah');
```

```
INSERT INTO Project VALUES (seq_PJ.Nextval, 'doqah', to_date('2018-08-13','yyyy-mm-dd') , to_date('2019-01-01','yyyy-mm-dd') ,'finish', 700000, 'makkah' ,'doqah' ,'alqunfothah');

INSERT INTO Project VALUES (seq_PJ.Nextval, 'Albarza' , to_date('2017-12-31','yyyy-mm-dd'),to_date('2018-10-30','yyyy-mm-dd') ,'finish' , 650000 , 'Makkah' ,'Albarza','helas' );

INSERT INTO Project VALUES (seq_PJ.Nextval, 'Shaqra', to_date('2018-02-26','yyyy-mm-dd'),to_date('2019-12-16','yyyy-mm-dd'), 'In-progress', 650000, 'Riyadh','Shaqra','Riyadh' );

INSERT INTO Project VALUES (seq_PJ.Nextval, 'Aljaaeza' , to_date('2018-01-01','yyyy-mm-dd'),to_date('2020-01-01','yyyy-mm-dd'),'In-progress', 1200000,'Makkah', 'Aljaaeza' ,'Addam' );

INSERT INTO Project VALUES (seq_PJ.Nextval, 'Bashoot' ,to_date('2018-02-20','yyyy-mm-dd') ,to_date('2021-10-15','yyyy-mm-dd'), 'In-progress' ,900000,'aseer', 'bashoot' ,'Sabt al-alayah');

INSERT INTO Project VALUES (seq_PJ.Nextval, 'umq' , to_date('2018-02-19','yyyy-mm-dd'), to_date('2020-10-03','yyyy-mm-dd') ,'In-progress' ,800000,'tabook',  'umq','umlj' );

INSERT INTO Project VALUES (seq_PJ.Nextval, 'Elatanh' ,to_date('2018-05-10','yyyy-mm-dd') ,to_date('2026-10-16','yyyy-mm-dd'),'In-progress' ,800000 ,'Makkah' ,'alrahuah' ,'Alleth');

INSERT INTO Project VALUES (seq_PJ.Nextval,'seha',to_date('2018-01-22','yyyy-mm-dd'),to_date('2024-10-27','yyyy-mm-dd'),'In-progress', 700000,'Riyadh','Riyadh','Riyadh');




INSERT INTO Works_ON VALUES (34,1, 100078394);

INSERT INTO Works_ON VALUES (32,2, 102735478);

INSERT INTO Works_ON VALUES (30,1, 109735473);

INSERT INTO Works_ON VALUES (26,2, 104673920);

INSERT INTO Works_ON VALUES (30,3, 109735473);

INSERT INTO Works_ON VALUES (10,4, 107364896);

INSERT INTO Works_ON VALUES (40,6, 107364896);

INSERT INTO Works_ON VALUES (22,2, 109735473);

INSERT INTO Works_ON VALUES (22,2, 100023421);

INSERT INTO Works_ON VALUES (22,5, 100023421);




CREATE SEQUENCE seq_FC
 START WITH 999
 INCREMENT BY 1;

INSERT INTO Funder_company VALUES (seq_FC.Nextval ,'Awqaf Al-dehaian');

INSERT INTO Funder_company VALUES (seq_FC.Nextval ,'Ministry of health');
```

```
INSERT INTO Funder_company VALUES (seq_FC.Nextval ,'Abdulrahman Almousa');
INSERT INTO Funder_company VALUES (seq_FC.Nextval ,'Al-Eisaa Charity');
INSERT INTO Funder_company VALUES (seq_FC.Nextval ,'Awqaf mohamed abdullh');

INSERT INTO representative VALUES (121234,'Saeed saleh', 0543212340,1000);
INSERT INTO representative VALUES (135235,'mohammed ahmed', 0542165951,1000);
INSERT INTO representative VALUES (121289,'abdullah alshareef', 0543217040,1000);
INSERT INTO representative VALUES (121235,'Matlq yousef', 0542123456,1001);
INSERT INTO representative VALUES (121236,'Rashed bakr', 0553212453, 1002);
INSERT INTO representative VALUES (121263,'ahmed salem', 0553213201, 1002);
INSERT INTO representative VALUES (121238,'Mohammed saad', 0543215679, 1003);
INSERT INTO representative VALUES (121898,'yaser selyman', 0543211239, 1004);
INSERT INTO representative VALUES (121210,'yheya asead', 0543213219, 1001);
INSERT INTO representative VALUES (121321,'soltan hamdan', 0543217859, 1004);

INSERT INTO Funds VALUES( 1,1000, 100000000,121234);
INSERT INTO Funds VALUES( 2,1002, 800000,121263);
INSERT INTO Funds VALUES( 3,1000, 700000,135235);
INSERT INTO Funds VALUES( 4,1003, 650000,121238);
INSERT INTO Funds VALUES( 5,1001, 650000,121235);
INSERT INTO Funds VALUES( 6,1001, 1200000,121235);
INSERT INTO Funds VALUES( 7,1002, 900000,121236);
INSERT INTO Funds VALUES( 8,1002, 800000,121236);
INSERT INTO Funds VALUES( 9,1000, 800000,121289);
INSERT INTO Funds VALUES( 10,1003, 700000,121238);

INSERT INTO Bank_Acount VALUES (12983322,'Alahli bank', '3704 0044 0532 0130 00');
INSERT INTO Bank_Acount VALUES (12983324,'Alrajhi bank', '4567 0076 0274 0430 00');
```

```
INSERT INTO Project_bankAccount VALUES (12983322,1);

INSERT INTO Project_bankAccount VALUES (12983324,2);

INSERT INTO Project_bankAccount VALUES (12983324,3);

INSERT INTO Project_bankAccount VALUES (12983324,4);

INSERT INTO Project_bankAccount VALUES (12983322,5);

INSERT INTO Project_bankAccount VALUES (12983322,6);

INSERT INTO Project_bankAccount VALUES (12983324,7);

INSERT INTO Project_bankAccount VALUES (12983322,8);

INSERT INTO Project_bankAccount VALUES (12983322,9);

INSERT INTO Project_bankAccount VALUES (12983324,10);



CREATE SEQUENCE ec_seq
 START WITH 0
 INCREMENT BY 1 minvalue 0;

INSERT INTO Executive_company VALUES( ec_seq.nextval ,'Saudi Amana Contracting', '0128735444' );

INSERT INTO Executive_company VALUES( ec_seq.nextval , 'Al-rajhi constructing company', '01266574737' );

INSERT INTO Executive_company VALUES( ec_seq.nextval , 'SACODE CO', '0555566678' );

INSERT INTO Executive_company VALUES( ec_seq.nextval , 'MAPA constructing company', '0118743322');

INSERT INTO Executive_company VALUES( ec_seq.nextval , 'AL-wadi for design and planning' , '0598777777' );

INSERT INTO Executive_company VALUES( ec_seq.nextval , 'Medina united comapny' , '0117654567' );

INSERT INTO Executive_company VALUES( ec_seq.nextval , 'Alfadel company construction ', '0123456789'  );

INSERT INTO Executive_company VALUES( ec_seq.nextval , 'Bena usakan constructing company', '9009007678'
);

INSERT INTO Executive_company VALUES( ec_seq.nextval , 'Al-Dar constructions', '9000070000' );

INSERT INTO Executive_company VALUES( ec_seq.nextval , 'KOOB water solutions', '0113333344' );



INSERT INTO Stages VALUES(1, 5, 1, 'planning',to_date('2018-07-31','yyyy-mm-dd'),to_date('2018-08-31','yyyy-
mm-dd') ,500000);

INSERT INTO Stages VALUES(1, 2, 2,'construction', to_date('2018-09-01','yyyy-mm-dd'),null , 50000000);

INSERT INTO Stages VALUES(2, 5, 1, 'planning' ,to_date('2018-05-14','yyyy-mm-dd'),to_date('2018-08-
28','yyyy-mm-dd') , 10000);
```

```
INSERT INTO Stages VALUES(2, 2, 2, 'construction' , to_date('2018-08-29','yyyy-mm-dd'),to_date('2019-04-21','yyyy-mm-dd') , 650000);

INSERT INTO Stages VALUES(3, 5, 1, 'planning' ,to_date('2018-08-13','yyyy-mm-dd'),to_date('2018-08-28','yyyy-mm-dd') , 10000);

INSERT INTO Stages VALUES(3, 8, 2, 'construction' , to_date('2018-09-02','yyyy-mm-dd'),to_date('2018-12-12','yyyy-mm-dd') , 500000);

INSERT INTO Stages VALUES(3, 10, 3, 'tests' , to_date('2018-12-29','yyyy-mm-dd'),to_date('2019-01-01','yyyy-mm-dd'), 15000);

INSERT INTO Stages VALUES(4, 5, 1, 'planning' ,to_date('2017-12-31','yyyy-mm-dd'),to_date('2018-01-29','yyyy-mm-dd') , 100000);

INSERT INTO Stages VALUES(4, 9, 2, 'construction' , to_date('2018-02-02','yyyy-mm-dd'),to_date('2018-10-01','yyyy-mm-dd') , 450000);

INSERT INTO Stages VALUES(4, 10, 3, 'tests' , to_date('2018-10-02','yyyy-mm-dd'),to_date('2018-10-17','yyyy-mm-dd'), 10000);

INSERT INTO Stages VALUES(5, 5, 1, 'planning' ,to_date('2018-02-20','yyyy-mm-dd'),to_date('2018-03-03','yyyy-mm-dd') , 15000);

INSERT INTO Stages VALUES(5, 6, 2, 'construction' , to_date('2018-04-21','yyyy-mm-dd'),null , 450000);

INSERT INTO Stages VALUES(6, 5, 1, 'planning' ,to_date('2018-01-01','yyyy-mm-dd'),to_date('2018-02-01','yyyy-mm-dd') , 100000);

INSERT INTO Stages VALUES(6, 7, 2, 'construction' , to_date('2018-03-01','yyyy-mm-dd'),null , 1000000);

INSERT INTO Stages VALUES(7, 5, 1, 'planning' ,to_date('2018-02-20','yyyy-mm-dd'),to_date('2018-03-21','yyyy-mm-dd') , 15000);

INSERT INTO Stages VALUES(7, 7, 2, 'construction' , to_date('2018-04-21','yyyy-mm-dd'), null , 750000);

INSERT INTO Stages VALUES(8, 5, 1, 'planning' ,to_date('2018-02-19','yyyy-mm-dd'),to_date('2018-02-28','yyyy-mm-dd') , 20000);

INSERT INTO Stages VALUES(8, 2, 2, 'construction' , to_date('2018-03-03','yyyy-mm-dd'),null , 790000);


INSERT INTO Stages VALUES(9, 5, 1, 'planning' ,to_date('2018-05-10','yyyy-mm-dd'),to_date('2018-05-25','yyyy-mm-dd') , 25000);

INSERT INTO Stages VALUES(9, 4, 2, 'construction' , to_date('2019-02-22','yyyy-mm-dd'),null , 500000);

INSERT INTO Stages VALUES(10, 5, 1, 'planning' ,to_date('2018-01-22','yyyy-mm-dd'),to_date('2018-02-09','yyyy-mm-dd') , 10000);
```