A small IT firm designing business software for its clients wants to store and manage its data.
It has identified following entities for which, it will maintain data.
Clients
Employees
Departments
Projects
EmpProjectTasks *
* This will hold data of employees working on projects.
You are required to create the tables using the information provided below. Once tables are ready, fill in the given data in each table.
NOTE: Submit the CREATE TABLE, INSERT and SELECT commands as answer to this assignment.
The tables below describe attributes for each entity.

Clients

Attribute Name	Attribute Type	Constraint	Remarks
Client_ID	NUMBER(4)	Primary Key	
Cname	VARCHAR2(40)	Not Null	
Address	VARCHAR2(30)		
Email	VARCHAR2(30)	Unique	
Phone	NUMBER(10)		
Business	VARCHAR2(20)	Not Null	Business type of client like Manufacturer, Reseller, Consultant, Professional etc.

```
create table Clients(
 Client_id int primary key,
 Cname VARCHAR(40) not null,
 Address VARCHAR(30),
 Email VARCHAR(30) unique,
 Phone int,
 Business VARCHAR(20)
 )
```

Employees

Attribute Name	Attribute Type	Constraint	Remarks
Empno	NUMBER(4)	Primary Key	
Ename	VARCHAR2(20)	Not Null	
Job	VARCHAR2(15)		
Salary	NUMBER(7)	Must be positive	Use CHECK constraint to ensure salary is > 0
Deptno	NUMBER(2)	Foreign Key	Deptno as per Departments table

```
create table Employee(
 Empno int primary key,
 Ename VARCHAR(20) not null,
 Job VARCHAR(15),
 Salary int constraint CK_Employee_Salary check(Salary>0),
 Deptno int references Departments(Deptno),
 )
```

Departments

Attribute Name	Attribute Type	Constraint	Remarks
Deptno	NUMBER(2)	Primary Key	
Dname	VARCHAR2(15)	Not Null	
Loc	VARCHAR2(20)		

```
create table Departments(
 Deptno int primary key,
 Dname VARCHAR(15) not null,
 Loc VARCHAR(20)
 )
```

Projects

Attribute Name	Attribute Type	Constraint	Remarks
Project_ID	NUMBER(3)	Primary Key	
Descr	VARCHAR2(30)	Not Null	Description of project like 'Accounting' , 'Inventory', 'Payroll' etc.
Start_Date	DATE		Start date of project
Planned_End_Date	DATE		Planned End date of project
Actual_End_date	DATE	Must be later than Planned_End_Date	Actual End date of project (Use CHECK constraint)
Budget	NUMBER(10)	Must be positive	Use CHECK constraint to ensure budget is > 0
Client_ID	NUMBER(4)	Foreign Key	Client ID from Clients table

```
create table Projects(
 Project_ID int primary key,
 Descr VARCHAR(30) not null,
 Start_Date DATE,
 Planned_End_Date DATE,
 Actual_End_Date DATE check(Actual_End_Date > Planned_End_Date),
 Budget int check(Budget > 0),
 Client_ID int references Clients(Client_ID),
 )
```

EmpProjectTasks

Attribute Name	Attribute Type	Constraint	Remarks
Project_ID	NUMBER(3)	Primary Key, Foreign Key	Composite primary key and foreign keys referring Projects and Employees table
Empno	NUMBER(4)	Primary Key, Foreign Key	
Start_Date	DATE		Start date when employee begins task on this project
End_Date	DATE		End date when employee finishes task on this project
Task	VARCHAR2(25)	Not Null	Task performed by employee like designing, coding, review, testing etc.
Status	VARCHAR2(15)	Not Null	Status of task like 'in progress', 'complete','cancelled'

```
create table EmpProjectTasks(
 Project_id int primary key references Projects(Project_id),
 Empno int primary key references Employees(Empno),
 Start_Date date,
 End_Date date,
 Task varchar(25) not null,
 Status varchar(15) not null
 )
```

Clients

Client ID	Cname	Address	Email	Phone	Business
1001	ACME Utilities	Noida	contact@acmeutil.com	9567880032	Manufacturing
1002	Trackon Consultants	Mumbai	consult@trackon.com	8734210090	Consultant
1003	MoneySaver Distributors	Kolkata	save@moneysaver.com	7799886655	Reseller
1004	Lawful Corp	Chennai	justice@lawful.com	9210342219	Professional

insert into Clients values
(1001,'ACME Utilities','Noida','contact@acmeutil.com','9567880032','Manufacturing'),
(1002,'Trackon Consultants','Mumbai','consult@trackon.com','8734210090','Consultant'),
(1003,'MoneySaver Distributors','Kolkata','save@moneysaver.com','7799886655','Reseller'),
(1004,'Lawful Corp','Chennai','justice@lawful.com','9210342219','Professional')

select * from clients

Employees

Empno	Ename	Job	Salary	Deptno
7001	Sandeep	Analyst	25000	10
7002	Rajesh	Designer	30000	10
7003	Madhav	Developer	40000	20
7004	Manoj	Developer	40000	20
7005	Abhay	Designer	35000	10
7006	Uma	Tester	30000	30
7007	Gita	Tech. Writer	30000	40
7008	Priya	Tester	35000	30
7009	Nutan	Developer	45000	20
7010	Smita	Analyst	20000	10
7011	Anand	Project Mgr	65000	10

insert into Employees values
(7001,'Sandeep','Analyst',25000,10),
(7002,'Rajesh','Designer',30000,10),
(7003,'Madhav','Developer',40000,20),
(7004,'Manoj','Developer',40000,20),
(7005,'Abhay','Designer',35000,10),
(7006,'Uma','Tester',30000,30),
(7007,'Gita','Tech. Writer',30000,40),
(7008,'Priya','Tester',35000,30),
(7009,'Nutan','Developer',45000,20),
(7010,'Smita','Analyst',20000,10),
(7011,'Anand','Project Mgr',65000,10)

select * from Employees

Departments

Deptno	Dname	Loc
10	Design	Pune
20	Development	Pune
30	Testing	Mumbai
40	Document	Mumbai

insert into Departments values
(10,'Design','Pune'),
(20,'Development','Pune'),
(30,'Testing','Mumbai'),
(40,'Document','Mumbai')
select * from Departments

Projects

Project_ID	Descr	Start_Date	Planned_End_Date	Actual_End_date	Budget	Client_ID
401	Inventory	01-Apr-11	01-Oct-11	31-Oct-11	150000	1001
402	Accounting	01-Aug-11	01-Jan-12		500000	1002
403	Payroll	01-Oct-11	31-Dec-11		75000	1003
404	Contact Mgmt	01-Nov-11	31-Dec-11		50000	1004

insert into Projects values
(401,'Inventory','2011/04/01','2011/10/01','2011/10/31',150000,1001)
(402,'Accounting','2011/08/01','2012/01/01',NULL,500000,1002),
(403,'Payroll','2011/10/01','2011/12/31',NULL,75000,1003),
(404,'Contact Mgmt','2011/11/01','2011/12/31',NULL,50000,1004)

select * from Projects

EmpProjectTasks

Project_ID	Empno	Start_Date	End_Date	Task	Status
401	7001	01-Apr-11	20-Apr-11	System Analysis	Completed
401	7002	21-Apr-11	30-May-11	System Design	Completed
401	7003	01-Jun-11	15-Jul-11	Coding	Completed
401	7004	18-Jul-11	01-Sep-11	Coding	Completed
401	7006	03-Sep-11	15-Sep-11	Testing	Completed
401	7009	18-Sep-11	05-Oct-11	Code Change	Completed
401	7008	06-Oct-11	16-Oct-11	Testing	Completed
401	7007	06-Oct-11	22-Oct-11	Documentation	Completed
401	7011	22-Oct-11	31-Oct-11	Sign off	Completed
402	7010	01-Aug-11	20-Aug-11	System Analysis	Completed
402	7002	22-Aug-11	30-Sep-11	System Design	Completed
402	7004	01-Oct-11		Coding	In Progress

insert into EmpProjectTasks values
(401,7001,'2011/04/01','2011/04/20','System Analysis','Completed'),
(401,7002,'2011/04/21','2011/05/30','System Design','Completed'),
(401,7003,'2011/06/01','2011/07/15','Coding','Completed'),
(401,7004,'2011/07/18','2011/09/01','Coding','Completed'),
(401,7006,'2011/09/03','2011/09/15','Testing','Completed'),
(401,7009,'2011/09/18','2011/10/05','Code Change','Completed'),
(401,7008,'2011/10/06','2011/10/16','Testing','Completed'),
(401,7007,'2011/10/06','2011/10/22','Documentation','Completed'),
(401,7011,'2011/10/22','2011/10/31','Sign off','Completed'),
(402,7010,'2011/08/01','2011/08/20','System Analysis','Completed'),
(402,7002,'2011/08/22','2011/09/30','System Design','Completed'),
(402,7004,'2011/10/01',NULL,'Coding','In Progress')

select * from EmpProjectTasks

SUBMITTED BY: HASNAIN ABBAS TINWALA