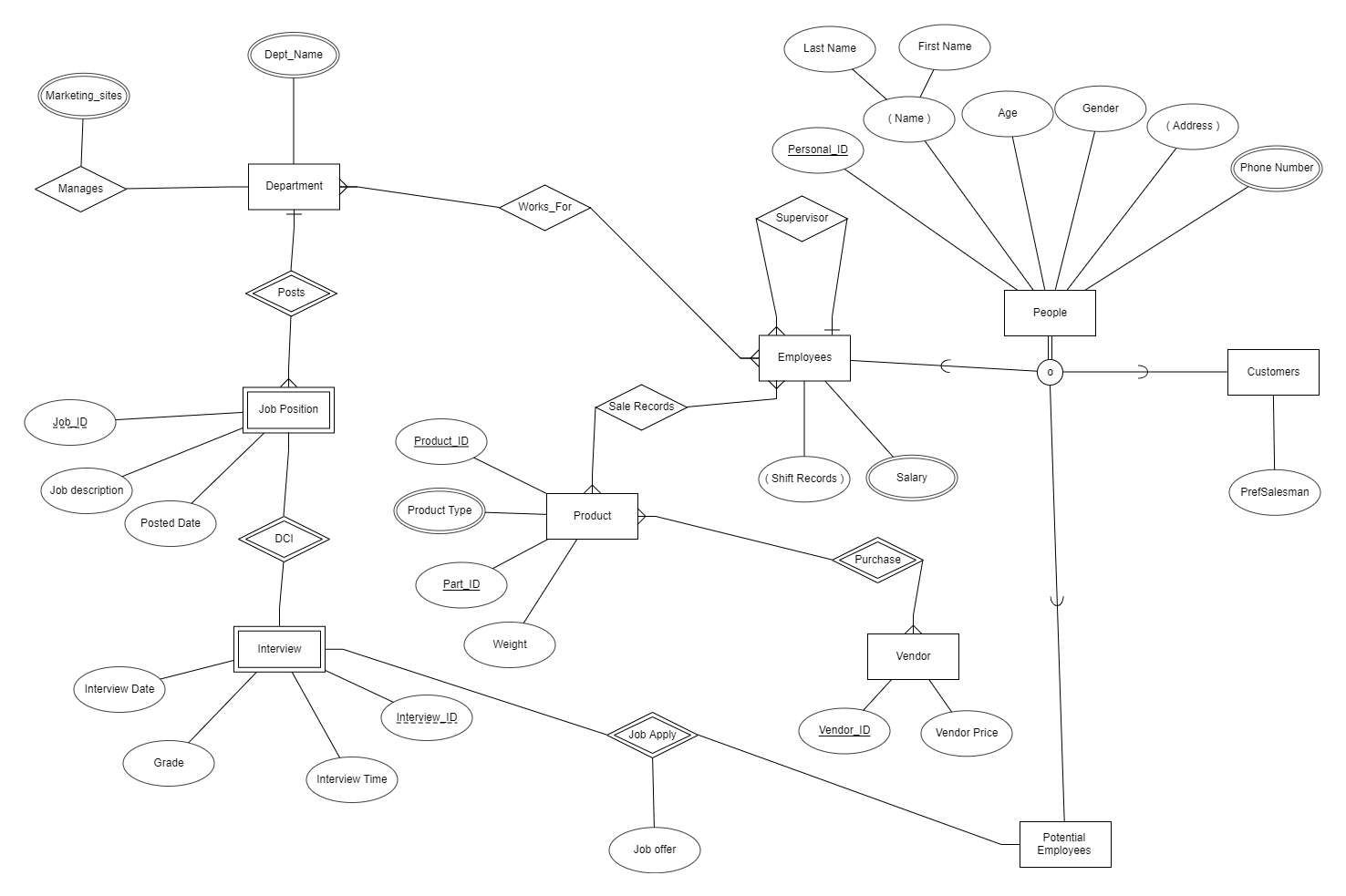
| **Semester Project** | **Database Design - Mehedi Toufiqe** |
| --- | --- |
|  |  |

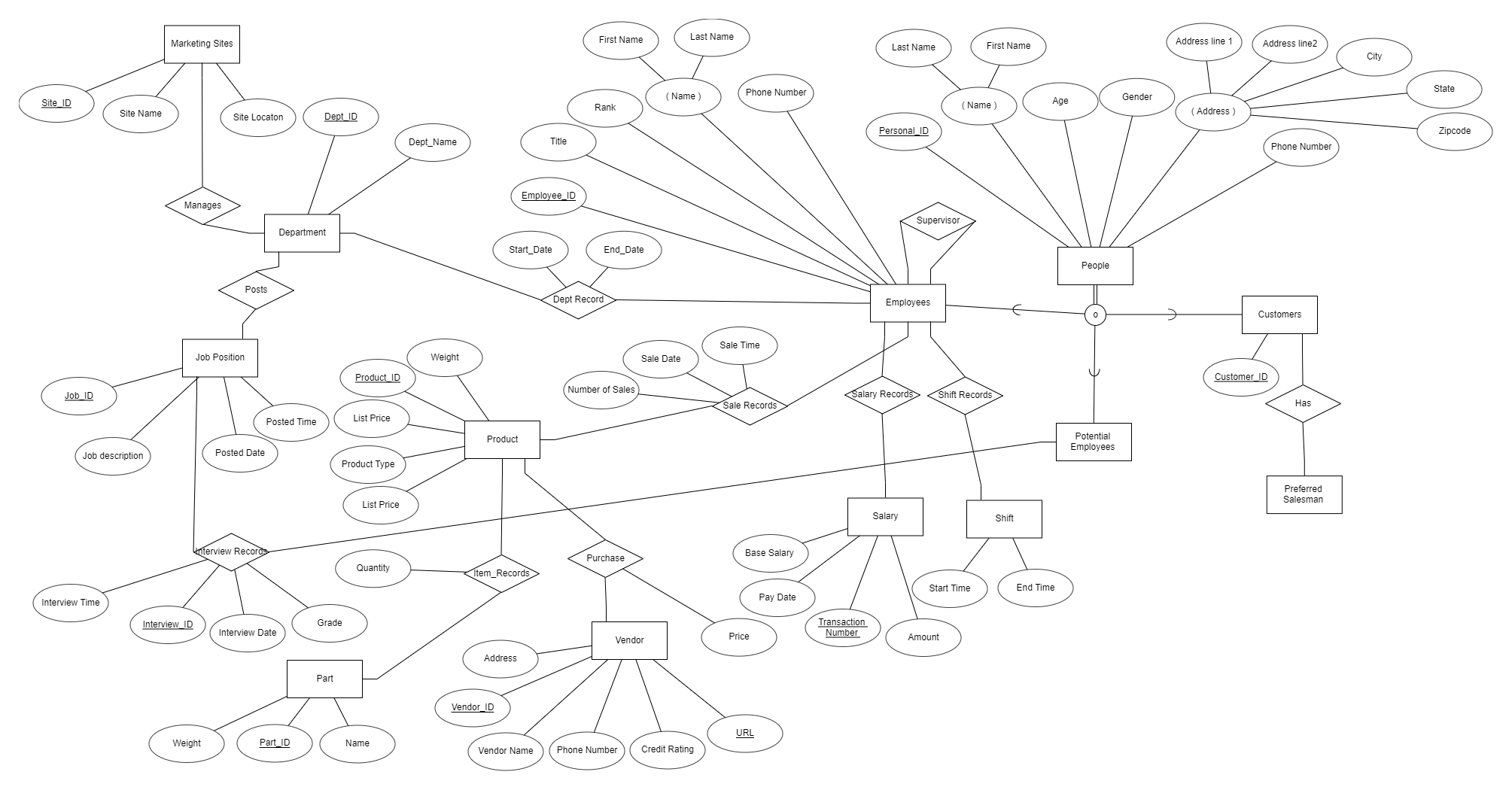
**Project Exercises**

**I.** Draw an EER to accurately represent this set of requirements. This will be your Conceptual Design. Clearly specify any assumption that you are making. You can use any tools (software) to draw the EER. You don’t need describe the value constraints of the attributions in the EER diagram. (25%)

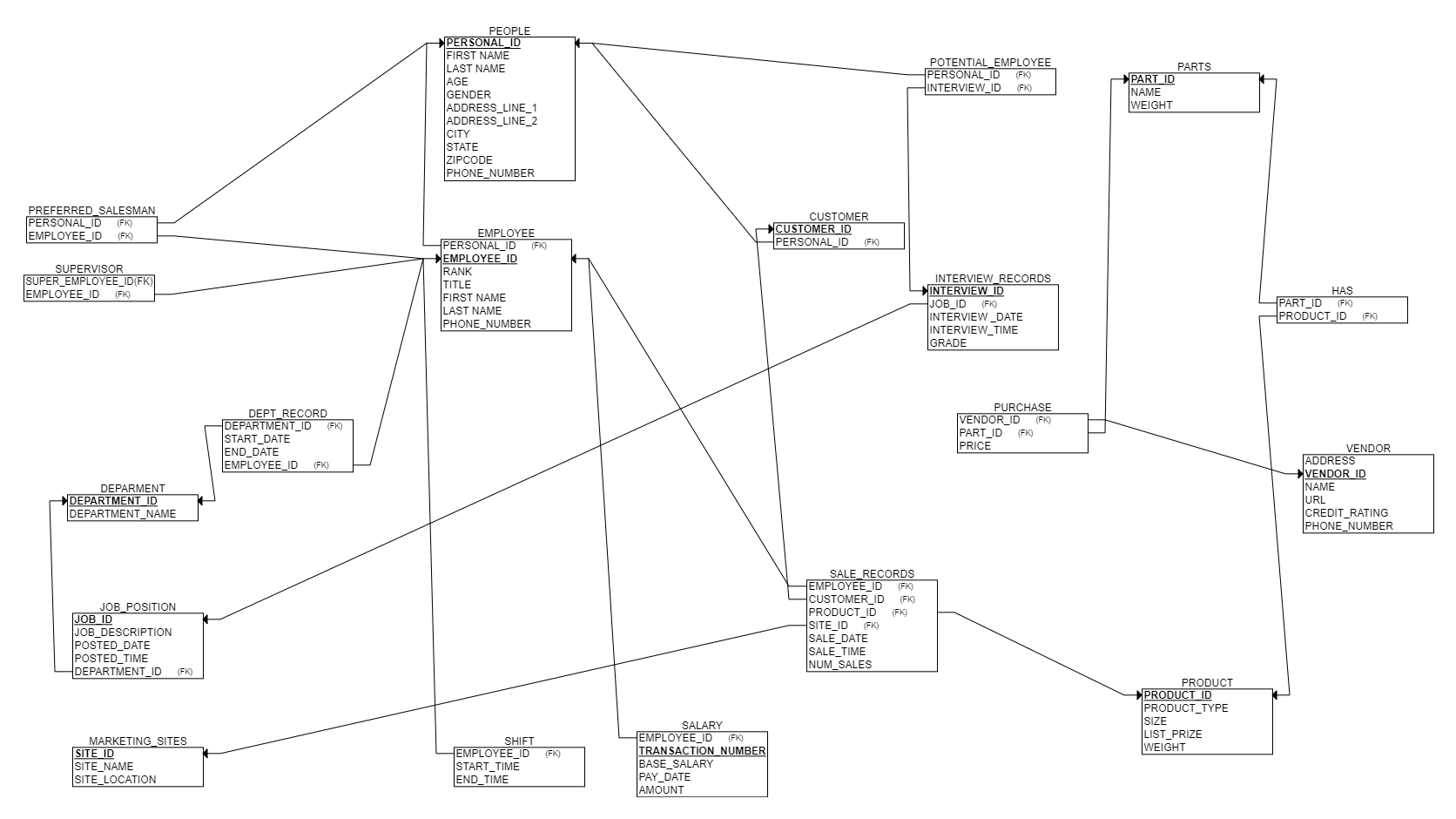


**II.** Use a relational DBMS to implement the database. Perform the following steps. (20%)

**a)** Convert your Conceptual model to a Logical model that can be implemented in a relational DBMS like Oracle. During this process you replace M-N relationships and multi-valued attributes with constructs that can be implemented in the relational DBMS. Draw EER for the logical model after your modifications. Feel free to change your conceptual model (first delivery) if needed.



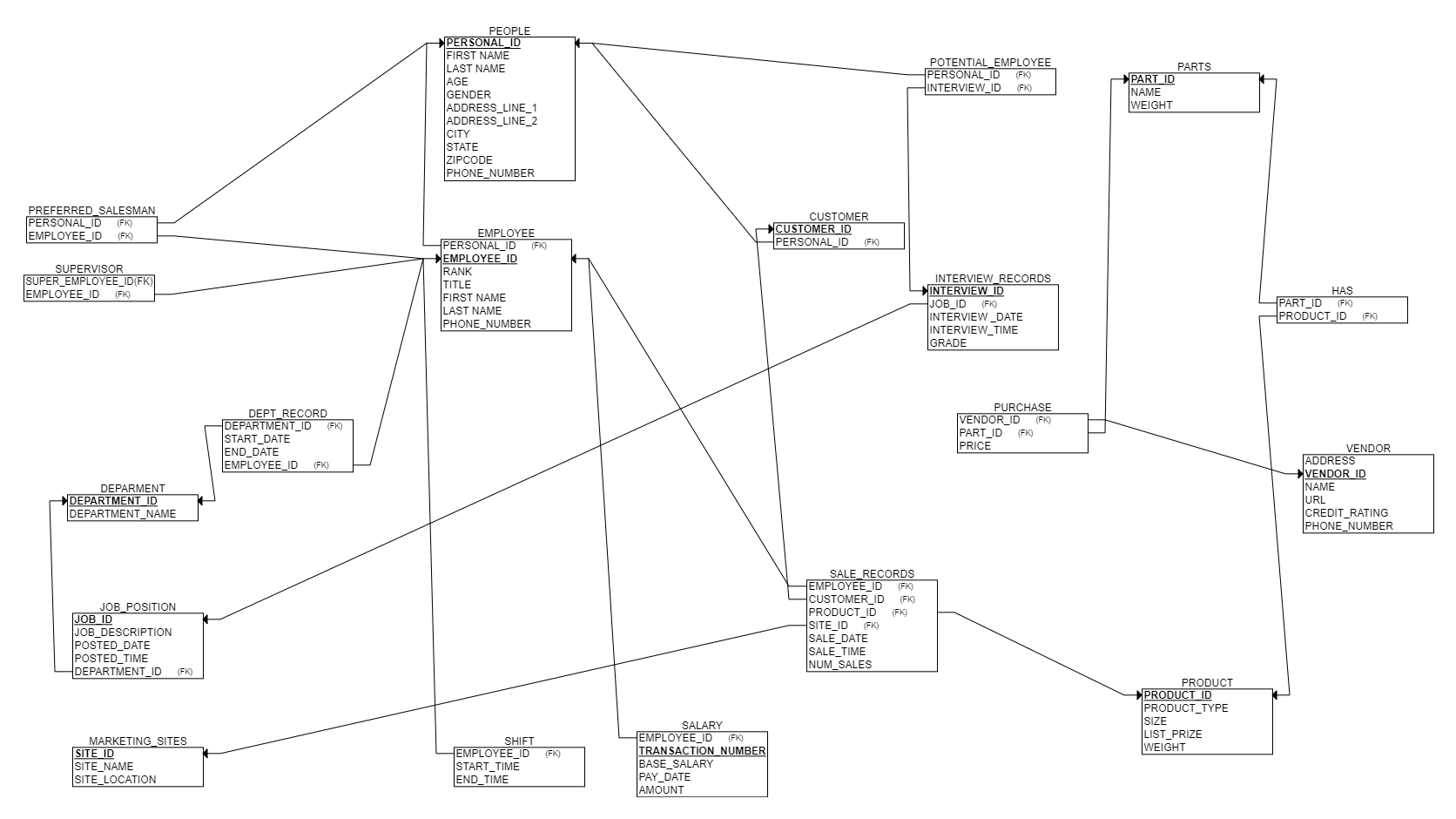
**b)** Convert the EER to a database design. Document your design in Database Schema format like the one we discussed in the class.

****

**III.** Use appropriate naming conventions for all your tables and attributes. (40%)

**a)** Normalize all your tables to third normal form. Make any necessary changes to the EER. Explain why these changes needed to be made.

**b)** Draw a dependency diagram for each table



**c)** Write SQL statements to create database, tables, and all other structures. Primary keys and foreign keys must be defined appropriately. The quantity constraints of the relation between the entities, which should be described in EER diagram, are not required.

CREATE TABLE PEOPLE

(PERSONAL\_ID INT NOT NULL,

FIRST\_NAME VARCHAR2(45) NOT NULL,

LAST\_NAME VARCHAR2(45) NOT NULL,

AGE INT NOT NULL,

GENDER VARCHAR2(1) NOT NULL,

ADDRESS\_LINE\_1 VARCHAR2(45) NOT NULL,

ADDRESS\_LINE\_2 VARCHAR2(45) NOT NULL,

CITY VARCHAR2(45) NOT NULL,

STATE VARCHAR2(45) NOT NULL,

ZIPCODE VARCHAR2(45) NOT NULL,

PHONE\_NUMBER VARCHAR2(45) NOT NULL,

PRIMARY KEY(PERSONAL\_ID));

CREATE TABLE CUSTOMER

(CUSTOMER\_ID INT NOT NULL,

PERSONAL\_ID INT NOT NULL,

FOREIGN KEY(PERSONAL\_ID) REFERENCES PEOPLE(PERSONAL\_ID),

CONSTRAINT UNIQUE\_CUSTOMER\_ID UNIQUE(CUSTOMER\_ID));

CREATE TABLE EMPLOYEE

(PERSONAL\_ID INT NOT NULL,

EMPLOYEE\_ID INT NOT NULL,

RANK VARCHAR2(45) NOT NULL,

TITLE VARCHAR2(45) NOT NULL,

PRIMARY KEY(PERSONAL\_ID),

FOREIGN KEY(PERSONAL\_ID) REFERENCES PEOPLE(PERSONAL\_ID),

CONSTRAINT UNIQUE\_EMPLOYEE\_ID UNIQUE(EMPLOYEE\_ID));

CREATE TABLE DEPARTMENT

(DEPARTMENT\_ID INT NOT NULL,

DEPARTMENT\_NAME VARCHAR2(20) NOT NULL,

PRIMARY KEY (DEPARTMENT\_ID));

CREATE TABLE DEPT\_RECORD

(DEPARTMENT\_ID INT NOT NULL,

START\_DATE DATE NOT NULL,

END\_DATE DATE NOT NULL,

EMPLOYEE\_ID INT NOT NULL,

FOREIGN KEY(DEPARTMENT\_ID) REFERENCES DEPARTMENT(DEPARTMENT\_ID),

FOREIGN KEY(EMPLOYEE\_ID) REFERENCES EMPLOYEE(EMPLOYEE\_ID));

CREATE TABLE JOB\_POSITION (

JOB\_ID INT NOT NULL,

JOB\_DESCRIPTION VARCHAR2(45) NOT NULL,

POSTED\_DATE DATE NOT NULL,

EXPIRE\_DATE VARCHAR2(45) NOT NULL,

DEPARTMENT\_ID INT NOT NULL,

PRIMARY KEY(JOB\_ID),

FOREIGN KEY(DEPARTMENT\_ID) REFERENCES DEPARTMENT(DEPARTMENT\_ID));

CREATE TABLE MARKETING\_SITES

(SITE\_ID INT NOT NULL,

SITE\_NAME VARCHAR2(45) NOT NULL,

SITE\_LOCATION VARCHAR(45) NOT NULL,

PRIMARY KEY(SITE\_ID) );

CREATE TABLE PREFERRED\_SALESMAN

(PERSONAL\_ID INT NOT NULL,

EMPLOYEE\_ID INT NOT NULL,

FOREIGN KEY(PERSONAL\_ID) REFERENCES PEOPLE(PERSONAL\_ID),

FOREIGN KEY (EMPLOYEE\_ID) REFERENCES EMPLOYEE (EMPLOYEE\_ID));

CREATE TABLE SUPERVISOR

(SUPER\_EMPLOYEE\_ID INT NOT NULL,

EMPLOYEE\_ID INT NOT NULL,

FOREIGN KEY(SUPER\_EMPLOYEE\_ID) REFERENCES EMPLOYEE(EMPLOYEE\_ID),

FOREIGN KEY(EMPLOYEE\_ID) REFERENCES EMPLOYEE(EMPLOYEE\_ID));

CREATE TABLE SHIFT

(EMPLOYEE\_ID INT NOT NULL,

START\_TIME VARCHAR2(45) NOT NULL,

END\_TIME VARCHAR2(45) NOT NULL,

FOREIGN KEY(EMPLOYEE\_ID) REFERENCES EMPLOYEE(EMPLOYEE\_ID));

CREATE TABLE SALARY

(EMPLOYEE\_ID INT NOT NULL,

TRANSACTION\_NUMBER INT NOT NULL,

BASE\_SALARY INT NOT NULL,

PAY\_DATE DATE NOT NULL,

AMOUNT INT NOT NULL,

FOREIGN KEY(EMPLOYEE\_ID) REFERENCES EMPLOYEE(EMPLOYEE\_ID),

CONSTRAINT UNIQUE\_TRANSACTION\_NUMBER UNIQUE (TRANSACTION\_NUMBER));

CREATE TABLE INTERVIEW\_RECORDS

(INTERVIEW\_ID INT NOT NULL,

JOB\_ID INT NOT NULL,

INTERVIEW\_DATE DATE NOT NULL,

INTERVIEW\_TIME VARCHAR2(45) NOT NULL,

GRADE INT NOT NULL,

FOREIGN KEY(JOB\_ID) REFERENCES JOB\_POSITION (JOB\_ID),

CONSTRAINT UNIQUE\_INTERVIEW\_ID UNIQUE (INTERVIEW\_ID));

CREATE TABLE POTENTIAL\_EMPLOYEE

(PERSONAL\_ID INT NOT NULL,

INTERVIEW\_ID INT NOT NULL,

FOREIGN KEY(INTERVIEW\_ID) REFERENCES INTERVIEW\_RECORDS(INTERVIEW\_ID),

FOREIGN KEY(PERSONAL\_ID) REFERENCES PEOPLE(PERSONAL\_ID));

CREATE TABLE VENDOR (

ADDRESS VARCHAR2(45) NOT NULL,

VENDOR\_ID INT NOT NULL,

VENDOR\_NAME VARCHAR2(45) NOT NULL,

VENDOR\_URL VARCHAR2(45) NOT NULL,

CREDIT\_RATING VARCHAR2(45) NOT NULL,

PHONE\_NUMBER VARCHAR2(45) NOT NULL,

PRIMARY KEY(VENDOR\_ID));

CREATE TABLE PRODUCT (

PRODUCT\_ID INT NOT NULL,

PRODUCT\_TYPE VARCHAR2(45) NOT NULL,

PRODUCT\_SIZE VARCHAR(45) NOT NULL,

LIST\_PRICE INT NOT NULL,

WEIGHT INT NOT NULL,

PRIMARY KEY(PRODUCT\_ID));

CREATE TABLE PART (

PART\_ID INT NOT NULL,

NAME VARCHAR2(45) NOT NULL,

WEIGHT INT NOT NULL,

PRIMARY KEY(PART\_ID));

CREATE TABLE PURCHASE (

VENDOR\_ID INT NOT NULL,

PART\_ID INT NOT NULL,

PRICE INT NOT NULL,

FOREIGN KEY(VENDOR\_ID) REFERENCES VENDOR(VENDOR\_ID),

FOREIGN KEY(PART\_ID) REFERENCES PART(PART\_ID));

CREATE TABLE ITEM\_RECORDS(

PART\_ID INT NOT NULL,

PRODUCT\_ID INT NOT NULL,

QTY INT NOT NULL,

PRIMARY KEY(PART\_ID,PRODUCT\_ID));

CREATE TABLE SALE\_RECORDS (

EMPLOYEE\_ID INT NOT NULL,

CUSTOMER\_ID INT NOT NULL,

PRODUCT\_ID INT NOT NULL,

SITE\_ID INT NOT NULL,

SALE\_DATE DATE NOT NULL,

SALE\_TIME VARCHAR2(45) NOT NULL,

FOREIGN KEY(PRODUCT\_ID) REFERENCES PRODUCT(PRODUCT\_ID),

FOREIGN KEY(SITE\_ID) REFERENCES MARKETING\_SITES(SITE\_ID),

FOREIGN KEY(EMPLOYEE\_ID) REFERENCES EMPLOYEE(EMPLOYEE\_ID),

FOREIGN KEY(CUSTOMER\_ID) REFERENCES CUSTOMER(CUSTOMER\_ID));

INSERT ALL

into PEOPLE (PERSONAL\_ID, FIRST\_NAME, LAST\_NAME, AGE, GENDER, ADDRESS\_LINE\_1, ADDRESS\_LINE\_2, CITY, STATE, ZIPCODE, PHONE\_NUMBER) values (1, 'Christine', 'Radclyffe', 48, 'F', '20789', '55468 Express Point', 'Cambridge', 'Massachusetts', '02142', '978 558 2970')

into PEOPLE (PERSONAL\_ID, FIRST\_NAME, LAST\_NAME, AGE, GENDER, ADDRESS\_LINE\_1, ADDRESS\_LINE\_2, CITY, STATE, ZIPCODE, PHONE\_NUMBER) values (2, 'Babita', 'Grioli', 32, 'F', '24', '61660 Fuller Trail', 'Buffalo', 'New York', '14210', '716 648 2090')

into PEOPLE (PERSONAL\_ID, FIRST\_NAME, LAST\_NAME, AGE, GENDER, ADDRESS\_LINE\_1, ADDRESS\_LINE\_2, CITY, STATE, ZIPCODE, PHONE\_NUMBER) values (3, 'Hellen', 'Cole', 26, 'F', '96055', '3 Kenwood Place', 'El Paso', 'Texas', '88553', '915 454 1065')

into PEOPLE (PERSONAL\_ID, FIRST\_NAME, LAST\_NAME, AGE, GENDER, ADDRESS\_LINE\_1, ADDRESS\_LINE\_2, CITY, STATE, ZIPCODE, PHONE\_NUMBER) values (4, 'Ashby', 'Esseby', 56, 'M', '71233', '80 Vermont Lane', 'Nashville', 'Tennessee', '37245', '615 598 6831')

into PEOPLE (PERSONAL\_ID, FIRST\_NAME, LAST\_NAME, AGE, GENDER, ADDRESS\_LINE\_1, ADDRESS\_LINE\_2, CITY, STATE, ZIPCODE, PHONE\_NUMBER) values (5, 'Reube', 'Minor', 49, 'M', '40', '2965 Maple Wood Alley', 'Houston', 'Texas', '77250', '713 522 1469')

into PEOPLE (PERSONAL\_ID, FIRST\_NAME, LAST\_NAME, AGE, GENDER, ADDRESS\_LINE\_1, ADDRESS\_LINE\_2, CITY, STATE, ZIPCODE, PHONE\_NUMBER) values (6, 'Winslow', 'Oxton', 42, 'M', '66163', '02 Merry Court', 'Johnson City', 'Tennessee', '37605', '423 621 4528')

into PEOPLE (PERSONAL\_ID, FIRST\_NAME, LAST\_NAME, AGE, GENDER, ADDRESS\_LINE\_1, ADDRESS\_LINE\_2, CITY, STATE, ZIPCODE, PHONE\_NUMBER) values (7, 'Heywood', 'Fassmann', 28, 'M', '2487', '56 Helena Point', 'Columbus', 'Georgia', '31914', '706 465 7000')

into PEOPLE (PERSONAL\_ID, FIRST\_NAME, LAST\_NAME, AGE, GENDER, ADDRESS\_LINE\_1, ADDRESS\_LINE\_2, CITY, STATE, ZIPCODE, PHONE\_NUMBER) values (8, 'Mimi', 'Roderighi', 63, 'F', '06', '7830 Colorado Park', 'Houston', 'Texas', '77005', '713 622 1079')

into PEOPLE (PERSONAL\_ID, FIRST\_NAME, LAST\_NAME, AGE, GENDER, ADDRESS\_LINE\_1, ADDRESS\_LINE\_2, CITY, STATE, ZIPCODE, PHONE\_NUMBER) values (9, 'Loella', 'Phelan', 28, 'F', '157', '4659 Cordelia Plaza', 'Springfield', 'Illinois', '62764', '217 721 2388')

into PEOPLE (PERSONAL\_ID, FIRST\_NAME, LAST\_NAME, AGE, GENDER, ADDRESS\_LINE\_1, ADDRESS\_LINE\_2, CITY, STATE, ZIPCODE, PHONE\_NUMBER) values (10, 'Huey', 'Budgett', 43, 'M', '3', '978 Mitchell Terrace', 'Hot Springs National Park', 'Arkansas', '71914', '501 578 5897')

into PEOPLE (PERSONAL\_ID, FIRST\_NAME, LAST\_NAME, AGE, GENDER, ADDRESS\_LINE\_1, ADDRESS\_LINE\_2, CITY, STATE, ZIPCODE, PHONE\_NUMBER) values (11, 'Ellsworth', 'Attrey', 56, 'M', '0', '457 Vernon Circle', 'Roanoke', 'Virginia', '24029', '540 858 2717')

into PEOPLE (PERSONAL\_ID, FIRST\_NAME, LAST\_NAME, AGE, GENDER, ADDRESS\_LINE\_1, ADDRESS\_LINE\_2, CITY, STATE, ZIPCODE, PHONE\_NUMBER) values (12, 'Zorine', 'D''Agostino', 42, 'F', '780', '46 Hansons Court', 'Houston', 'Texas', '77201', '832 402 9709')

into PEOPLE (PERSONAL\_ID, FIRST\_NAME, LAST\_NAME, AGE, GENDER, ADDRESS\_LINE\_1, ADDRESS\_LINE\_2, CITY, STATE, ZIPCODE, PHONE\_NUMBER) values (13, 'Sib', 'Piburn', 43, 'F', '62', '3 Walton Terrace', 'Carlsbad', 'California', '92013', '760 307 2109')

into PEOPLE (PERSONAL\_ID, FIRST\_NAME, LAST\_NAME, AGE, GENDER, ADDRESS\_LINE\_1, ADDRESS\_LINE\_2, CITY, STATE, ZIPCODE, PHONE\_NUMBER) values (14, 'Rafferty', 'Haighton', 35, 'M', '91', '066 Ramsey Place', 'Lakewood', 'Washington', '98498', '253 449 1602')

into PEOPLE (PERSONAL\_ID, FIRST\_NAME, LAST\_NAME, AGE, GENDER, ADDRESS\_LINE\_1, ADDRESS\_LINE\_2, CITY, STATE, ZIPCODE, PHONE\_NUMBER) values (15, 'Wat', 'Silby', 26, 'M', '7', '7321 Old Gate Crossing', 'Dayton', 'Ohio', '45419', '937 672 1956')

into PEOPLE (PERSONAL\_ID, FIRST\_NAME, LAST\_NAME, AGE, GENDER, ADDRESS\_LINE\_1, ADDRESS\_LINE\_2, CITY, STATE, ZIPCODE, PHONE\_NUMBER) values (16, 'Karoly', 'Kissick', 18, 'F', '915', '0 Twin Pines Lane', 'Norfolk', 'Virginia', '23509', '757 724 5575')

into PEOPLE (PERSONAL\_ID, FIRST\_NAME, LAST\_NAME, AGE, GENDER, ADDRESS\_LINE\_1, ADDRESS\_LINE\_2, CITY, STATE, ZIPCODE, PHONE\_NUMBER) values (17, 'Sumner', 'Pritty', 48, 'M', '365', '9327 Onsgard Park', 'Houston', 'Texas', '77212', '713 745 5541')

into PEOPLE (PERSONAL\_ID, FIRST\_NAME, LAST\_NAME, AGE, GENDER, ADDRESS\_LINE\_1, ADDRESS\_LINE\_2, CITY, STATE, ZIPCODE, PHONE\_NUMBER) values (18, 'Muhammad', 'Apps', 43, 'M', '93', '929 Elmside Crossing', 'Austin', 'Texas', '78783', '512 665 2346')

into PEOPLE (PERSONAL\_ID, FIRST\_NAME, LAST\_NAME, AGE, GENDER, ADDRESS\_LINE\_1, ADDRESS\_LINE\_2, CITY, STATE, ZIPCODE, PHONE\_NUMBER) values (19, 'Joye', 'Feifer', 56, 'F', '8', '988 Blaine Street', 'Jackson', 'Mississippi', '39210', '601 148 8409')

into PEOPLE (PERSONAL\_ID, FIRST\_NAME, LAST\_NAME, AGE, GENDER, ADDRESS\_LINE\_1, ADDRESS\_LINE\_2, CITY, STATE, ZIPCODE, PHONE\_NUMBER) values (20, 'Cullan', 'Victory', 29, 'M', '62', '4 Carioca Hill', 'Albany', 'New York', '12242', '518 637 6786')

select \* from dual;

INSERT ALL

into CUSTOMER (CUSTOMER\_ID, PERSONAL\_ID) values (411, 2)

into CUSTOMER (CUSTOMER\_ID, PERSONAL\_ID) values (421, 4)

into CUSTOMER (CUSTOMER\_ID, PERSONAL\_ID) values (481, 6)

into CUSTOMER (CUSTOMER\_ID, PERSONAL\_ID) values (444, 8)

select\* from dual;

INSERT ALL

into EMPLOYEE (PERSONAL\_ID, EMPLOYEE\_ID, RANK,TITLE) values (9, 811, 'SENIOR' , 'CEO')

into EMPLOYEE (PERSONAL\_ID, EMPLOYEE\_ID, RANK,TITLE) values (10, 854, 'INTERN', 'SALESMAN')

into EMPLOYEE (PERSONAL\_ID, EMPLOYEE\_ID, RANK,TITLE) values (11, 824, 'JUNIOR' , 'INTERVIWER')

into EMPLOYEE (PERSONAL\_ID, EMPLOYEE\_ID, RANK,TITLE) values (12, 836, 'INTERN', 'SALESMAN')

into EMPLOYEE (PERSONAL\_ID, EMPLOYEE\_ID, RANK,TITLE) values (13, 864, 'JUNIOR' , 'INTERVIWER')

into EMPLOYEE (PERSONAL\_ID, EMPLOYEE\_ID, RANK,TITLE) values (14, 878, 'ENTRY', 'DRIVER')

select\* from dual;

INSERT ALL

Into DEPARTMENT(DEPARTMENT\_ID,DEPARTMENT\_NAME) values ('1111', 'IT')

Into DEPARTMENT(DEPARTMENT\_ID,DEPARTMENT\_NAME) values ('2222', 'MANUFACTURING')

Into DEPARTMENT(DEPARTMENT\_ID,DEPARTMENT\_NAME) values ('3333', 'MARKETING')

Into DEPARTMENT(DEPARTMENT\_ID,DEPARTMENT\_NAME) values ('4444', 'SERVICE')

Into DEPARTMENT(DEPARTMENT\_ID,DEPARTMENT\_NAME) values ('5555', 'CUSTOMER CARE')

select\* from dual;

INSERT ALL

Into DEPT\_RECORD(DEPARTMENT\_ID,START\_DATE, END\_DATE, EMPLOYEE\_ID) values ('1111', '01-JAN-2000', '12-DEC-2021', 811)

Into DEPT\_RECORD(DEPARTMENT\_ID,START\_DATE, END\_DATE, EMPLOYEE\_ID) values ('2222', '01-JAN-2000', '12-DEC-2021', 854)

Into DEPT\_RECORD(DEPARTMENT\_ID,START\_DATE, END\_DATE, EMPLOYEE\_ID) values ('3333', '01-JAN-2000', '12-DEC-2021', 824)

select\* from dual;

INSERT ALL

Into JOB\_POSITION(JOB\_ID, JOB\_DESCRIPTION, POSTED\_DATE, EXPIRE\_DATE, DEPARTMENT\_ID) values ('11111', 'SALESMAN', '01-JAN-2021', '01-DEC-2021', '3333')

Into JOB\_POSITION(JOB\_ID, JOB\_DESCRIPTION, POSTED\_DATE, EXPIRE\_DATE, DEPARTMENT\_ID) values ('12345', 'SALESMAN', '01-JAN-2021', '01-DEC-2021', '3333')

Into JOB\_POSITION(JOB\_ID, JOB\_DESCRIPTION, POSTED\_DATE, EXPIRE\_DATE, DEPARTMENT\_ID) values ('154321', 'CUSTOMER CARE', '01-JAN-2021', '01-DEC-2021', '1111')

Into JOB\_POSITION(JOB\_ID, JOB\_DESCRIPTION, POSTED\_DATE, EXPIRE\_DATE, DEPARTMENT\_ID) values ('12121', 'SALESMAN', '01-JAN-2021', '01-DEC-2021', '3333')

Into JOB\_POSITION(JOB\_ID, JOB\_DESCRIPTION, POSTED\_DATE, EXPIRE\_DATE, DEPARTMENT\_ID) values ('13544', 'DRIVER', '01-JAN-2021', '01-DEC-2021', '4444')

select\* from dual;

INSERT ALL

Into MARKETING\_SITES(SITE\_ID, SITE\_NAME, SITE\_LOCATION ) values ('000111', 'GOOGLE', 'Newyork')

Into MARKETING\_SITES(SITE\_ID, SITE\_NAME, SITE\_LOCATION ) values ('000222', 'FACEBOOK', 'California')

Into MARKETING\_SITES(SITE\_ID, SITE\_NAME, SITE\_LOCATION ) values ('000333', 'AMAZON', 'Seattle')

select\* from dual;

INSERT ALL

Into PART(PART\_ID, NAME, WEIGHT ) values ('100', 'Cup', '2')

Into PART(PART\_ID, NAME, WEIGHT ) values ('200', 'Lid', '1')

Into PART(PART\_ID, NAME, WEIGHT ) values ('300', 'Glass', '6')

Into PART(PART\_ID, NAME, WEIGHT ) values ('400', 'Plate', '8')

Into PART(PART\_ID, NAME, WEIGHT ) values ('500', 'Bowl', '9')

select\* from dual;

INSERT INTO INTERVIEW\_RECORDS(INTERVIEW\_ID, JOB\_ID, INTERVIEW\_DATE, INTERVIEW\_TIME, GRADE) values (712, '11111', '01-MAR-2021', '9AM', 76);

INSERT INTO INTERVIEW\_RECORDS(INTERVIEW\_ID, JOB\_ID, INTERVIEW\_DATE, INTERVIEW\_TIME, GRADE) values (723, '13544', '01-MAY-2021', '10AM', 56);

INSERT INTO INTERVIEW\_RECORDS(INTERVIEW\_ID, JOB\_ID, INTERVIEW\_DATE, INTERVIEW\_TIME, GRADE) values (735, '12121', '01-JULY-2021', '10AM', 66);

INSERT ALL

Into preferred\_salesman (PERSONAL\_ID, EMPLOYEE\_ID) values (2,811)

Into preferred\_salesman (PERSONAL\_ID, EMPLOYEE\_ID) values (4,854)

Into preferred\_salesman (PERSONAL\_ID, EMPLOYEE\_ID) values (6,836)

Into preferred\_salesman (PERSONAL\_ID, EMPLOYEE\_ID) values (8,864)

select\* from dual;

INSERT ALL

Into SUPERVISOR (SUPER\_EMPLOYEE\_ID, EMPLOYEE\_ID) values (811,854)

Into SUPERVISOR (SUPER\_EMPLOYEE\_ID, EMPLOYEE\_ID) values (824,836)

select\* from dual;

INSERT ALL

Into SHIFT (EMPLOYEE\_ID,START\_TIME, END\_TIME) values (811, '10AM', '6PM')

Into SHIFT (EMPLOYEE\_ID,START\_TIME, END\_TIME) values (854, '9AM', '5PM')

Into SHIFT (EMPLOYEE\_ID,START\_TIME, END\_TIME) values (824, '8AM', '4PM')

select\* from dual;

INSERT ALL

Into SALARY (EMPLOYEE\_ID, TRANSACTION\_NUMBER, BASE\_SALARY, PAY\_DATE, AMOUNT) values (811, '999', 5000, '01-NOV-2021', 7500)

Into SALARY (EMPLOYEE\_ID, TRANSACTION\_NUMBER, BASE\_SALARY, PAY\_DATE, AMOUNT) values (854, '989', 6000, '01-NOV-2021', 8500)

Into SALARY (EMPLOYEE\_ID, TRANSACTION\_NUMBER, BASE\_SALARY, PAY\_DATE, AMOUNT) values (824, '979', 7000, '01-NOV-2021', 9500)

select\* from dual;

INSERT ALL

Into POTENTIAL\_EMPLOYEE (PERSONAL\_ID, INTERVIEW\_ID) values (2,712)

Into POTENTIAL\_EMPLOYEE (PERSONAL\_ID, INTERVIEW\_ID) values (2,723)

select\* from dual;

INSERT ALL

into VENDOR (ADDRESS, VENDOR\_ID, VENDOR\_NAME, VENDOR\_URL , CREDIT\_RATING, PHONE\_NUMBER ) values ('1201 PARK LN', '500', 'DAVID', 'davidllc.com', '780' , '1234567890' )

into VENDOR (ADDRESS, VENDOR\_ID, VENDOR\_NAME, VENDOR\_URL , CREDIT\_RATING, PHONE\_NUMBER ) values ('1301 PINE LN', '501', 'ROCKY', 'rockyllc.com', '740' , '0987654321' )

into VENDOR (ADDRESS, VENDOR\_ID, VENDOR\_NAME, VENDOR\_URL , CREDIT\_RATING, PHONE\_NUMBER ) values ('1551 TREE LN', '502', 'ADAM', 'adamllc.com', '680', '789555123' )

select\* from dual;

INSERT ALL

into PRODUCT (PRODUCT\_ID, PRODUCT\_TYPE, PRODUCT\_SIZE, LIST\_PRICE, WEIGHT) values (9999, 'LAPTOP', '16', 750, '3')

into PRODUCT (PRODUCT\_ID, PRODUCT\_TYPE, PRODUCT\_SIZE, LIST\_PRICE, WEIGHT) values (8888, 'PRINTER', '20', 200, '5')

into PRODUCT (PRODUCT\_ID, PRODUCT\_TYPE, PRODUCT\_SIZE, LIST\_PRICE, WEIGHT) values (7777, 'MONITOR', '30', 400, '7')

into PRODUCT (PRODUCT\_ID, PRODUCT\_TYPE, PRODUCT\_SIZE, LIST\_PRICE, WEIGHT) values (6666, 'BOX', '12', 75, '2')

select\* from dual;

INSERT ALL

into PURCHASE (VENDOR\_ID, PART\_ID, PRICE) values ('500', '100', '30')

into PURCHASE (VENDOR\_ID, PART\_ID, PRICE) values ('501', '200', '80')

into PURCHASE (VENDOR\_ID, PART\_ID, PRICE) values ('502', '300', '150')

select\* from dual;

INSERT ALL

into ITEM\_RECORDS (PART\_ID, PRODUCT\_ID, QTY) values ('100', '6666', '5')

into ITEM\_RECORDS (PART\_ID, PRODUCT\_ID, QTY) values ('200', '7777', '10')

into ITEM\_RECORDS (PART\_ID, PRODUCT\_ID, QTY) values ('300', '8888', '15')

select\* from dual;

**d) Use the Create View statement to create the following views:**

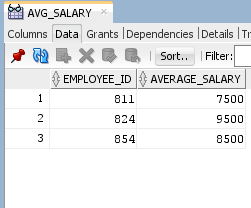
**1)** View1: This view returns the average salary each employee has earned from the company monthly after she/he becomes an employee in the company.

CREATE VIEW AVG\_SALARY(EMPLOYEE\_ID, AVERAGE\_SALARY)

AS SELECT EMPLOYEE\_ID, AVG(AMOUNT)

FROM SALARY

GROUP BY EMPLOYEE\_ID;



**2)** View2: This view returns the number of interviews rounds each interviewee pass for each job position.

CREATE VIEW INTERVIEW\_RESULTS

(INTERVIEW\_ID, NUMBER\_INTERVIEWS, PASSED\_INTERVIEWS)

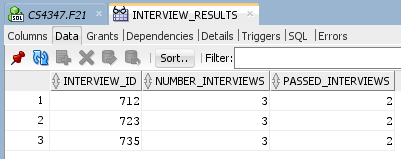
AS SELECT

INTERVIEW\_RECORDS.INTERVIEW\_ID,(SELECT COUNT(\*) FROM INTERVIEW\_RECORDS WHERE INTERVIEW\_ID = INTERVIEW\_RECORDS.INTERVIEW\_ID),

(SELECT COUNT(\*) FROM INTERVIEW\_RECORDS WHERE INTERVIEW\_ID = INTERVIEW\_RECORDS.INTERVIEW\_ID AND GRADE>60)

FROM INTERVIEW\_RECORDS

GROUP BY INTERVIEW\_ID;



**3)** View3: This view returns the number of items of each product type sold.

**4)** View4: This view returns the part purchase cost for each product.

**e)** Answer the following Queries. Feel free to use any of the views that you created in part (d).

1) Return the ID and Name of interviewers who participate in interviews where the interviewee’s name is “Hellen Cole” arranged for job “11111”.

2) Return the ID of all jobs which are posted by department “Marketing” in January 2011.

3) Return the ID and Name of the employees having no supervisees.

4) Return the Id and Location of the marketing sites which have no sale records during March, 2011.

5) Return the job’s id and description which does not hire a suitable person one month after it is posted.

6) Return the ID and Name of the salesmen who have sold all product type whose price is above $200.

7) Return the department’s id and name which has no job post during 1/1/2011 and 2/1/2011.

8) Return the ID, Name, and Department ID of the existing employees who apply job “12345”.

9) Return the best seller’s type in the company (sold the most items).

10) Return the product type whose net profit is highest in the company (money earned minus the part cost).

11) Return the name and id of the employees who has worked in all departments after hired by the company.

12) Return the name and email address of the interviewee who is selected.

13) Retrieve the name, phone number, email address of the interviewees selected for all the jobs they apply.

14) Return the employee’s name and id whose average monthly salary is highest in the company.

15) Return the ID and Name of the vendor who supply part whose name is “Cup” and weight is smaller than 4 pound and the price is lowest among all vendors.

**IV. Document the final term project report. (15%)**

**a) Problem description**

There is an MM Company, which purchases some parts from vendors to produce some products. It has several departments, marketing sites, and parts supply vendors in the company.

1. For each department, department id and department name will be recorded.
2. People in the company can be divided into three types -- employees, customers, and potential employees. Each person can belong to more than one type. Each person in the company has the following attributes: Personal\_ID, Name (Last Name, First Name), Age (below 65), Gender, Address (address line 1, address line 2, city, state, zipcode), and Phone number (one individual may have more than one phone number). For customers, his/her preferred salesmen were recorded in the system. For employees, Rank and Title (e.g. CEO, Principle, Partner, etc.) will be recorded for them.
3. Each employee of the company must have only one direct supervisor, while each supervisor can have several supervisees. One employee can work for one or more departments at different time. But at one time, one employee can only work for one department. The system needs to record start time and end time for each shift among different department for one employee.
4. Each job position’s information is recorded to hire new people. It contains the Job ID, job description, and posted date in the system.
5. The job positions are posted by the departments. Both existing employees and potential employees can apply each job post by any department. The company will select some candidates from the applications and make interviews.
6. For each job position, several interviews will be made to select a suitable person.
7. For each interview, candidates (interviewees), interviewers, job position and interview time are recorded. After each round interview, the interviewers give a grade to it ranging from 0 to 100. The grade over 60 represents that the interviewee pass the interview. One person is selected when her/his average grade is over 70 and she/he passes at least 5 rounds of interviews.

8) For each product in the company, the system needs to record Product ID, Product Type, Size, List Price, Weight, and Style.

9) There are many marketing sites for the company. For each site, Site ID, Site Name, and Site Location are recorded.

10) There are several people working for each site, and meanwhile, one person can work on different sites. It is able to track the details of each sale history --- salesmen, customers, product, sale time, and sites.

11) Part purchase is also a vital activity in the company. The system needs to record each vendor’s Vendor ID, Name, Address, Account Number, Credit Rating, and Purchasing Web Service URL.

12) One vendor may supply many types of parts. The price of the same part type may vary from different vendors but the price of one part type of one vendor will keep same. It is able to track which part types used in each product and the number of each type of part used for the product.

13) In addition, the system maintains the information of each employee’s monthly salary which includes transaction number, pay\_date, and amount (Note: transaction number could be same among different employees. However, for each employee, the transaction number is unique).

**b) Project questions (Answer questions listed in this project).**

**Project Questions**

1. Can you think 5 more rules (other than the one explicitly described above) that are likely to be used in a company.
2. People has subclasses of Employees, Customers, and Potential Employee.
3. A customer can be employee, employee can be customer, potential employee can be a customer.
4. Each job posting has a unique interview id to track the interviewee.
5. The vendors offer different prices for different parts.
6. Every Supervisor has a number associated with the supervisee.
7. **Is the ability to model super-class/subclass relationships likely to be important in such an environment? Why or why not?**

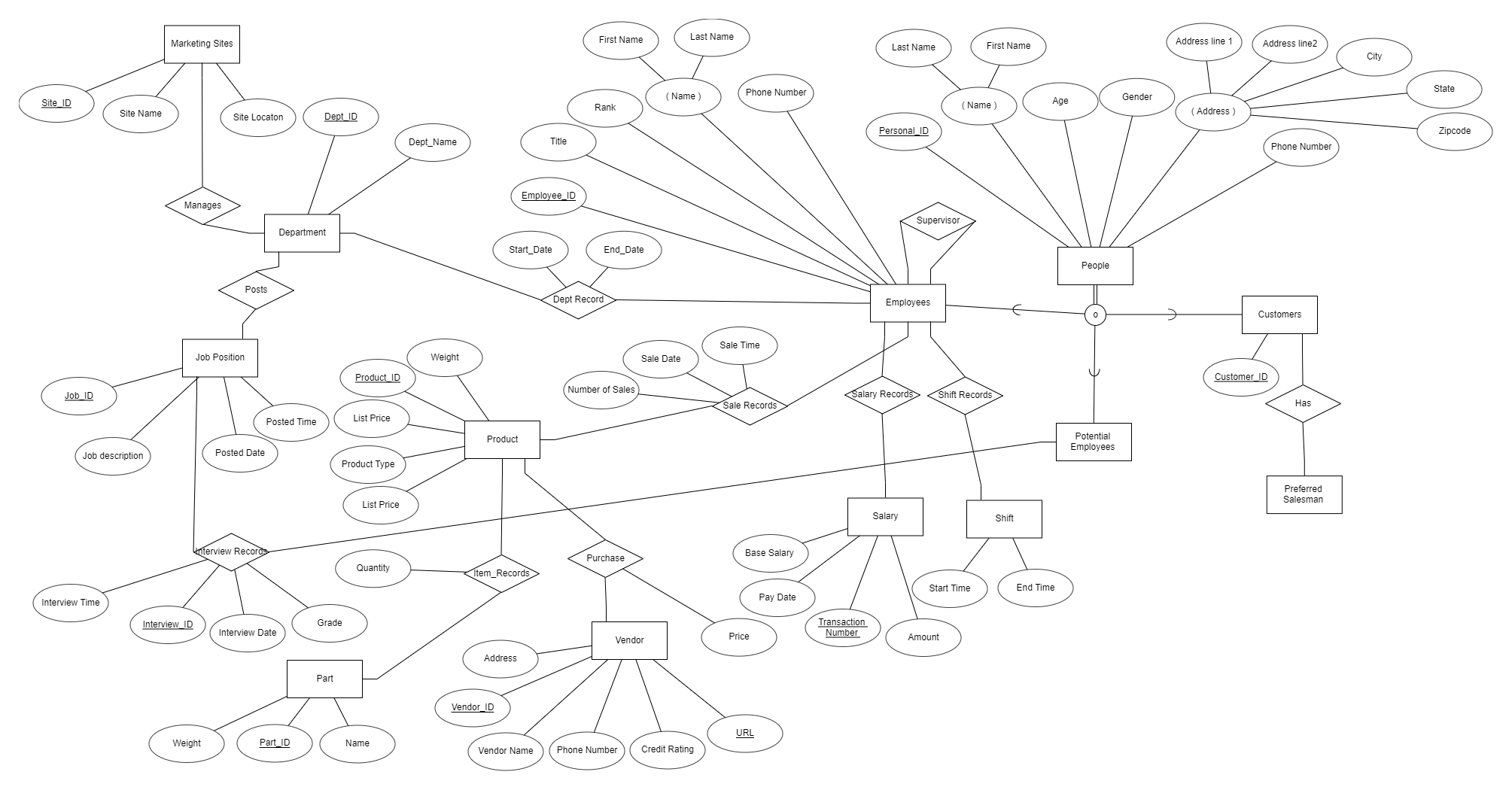
A superclass is a class from which many subclasses can be created. The subclasses inherit the characteristics of a superclass. The superclass is also known as the parent class or base class.

The ability to model super-class/subclass relationships likely to be important in such an environment because we can define the entity and relationship with attributes more correctly.

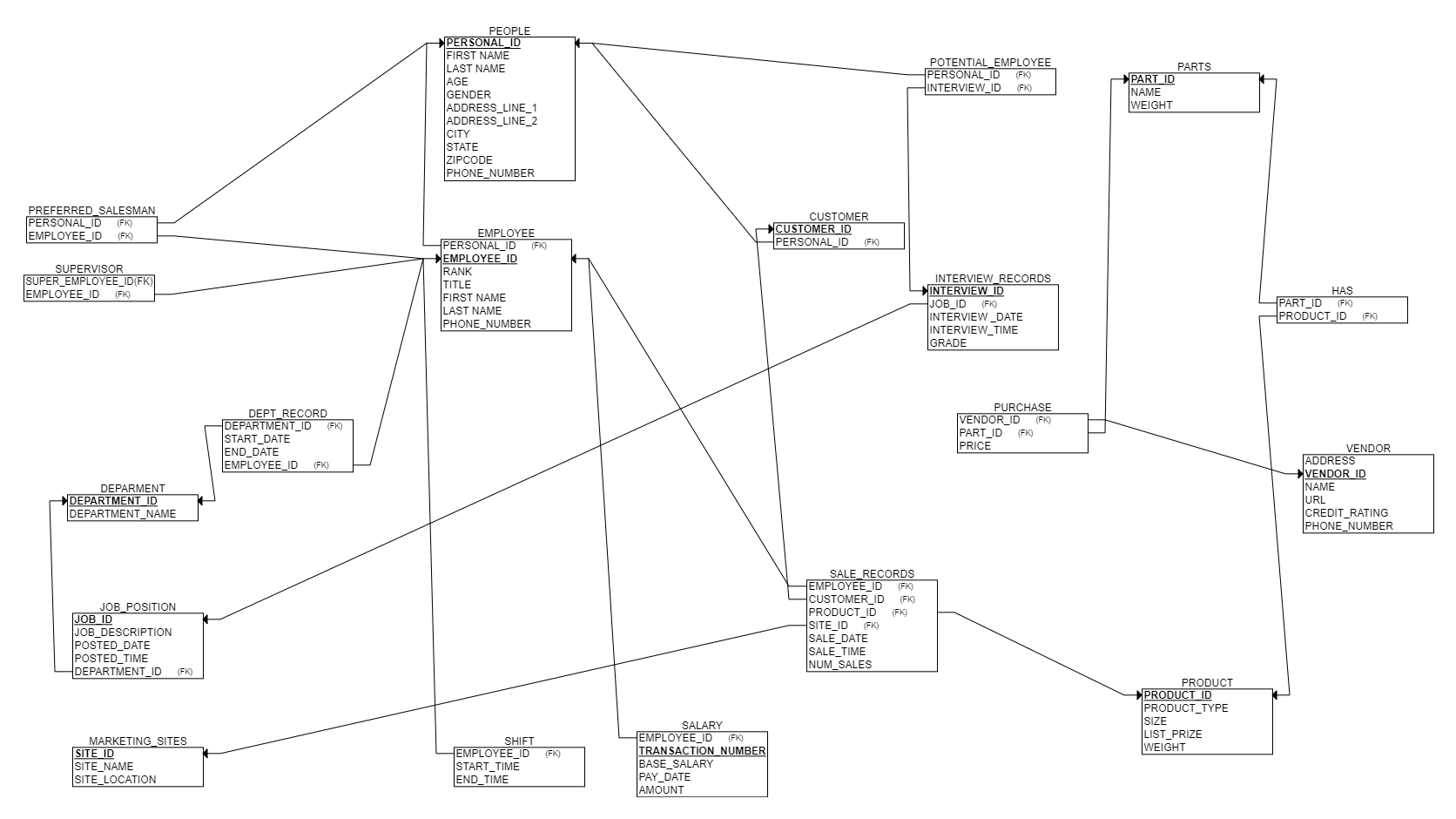
1. **Justify using a Relational DBMS like Oracle for this project.**

A database management system (DBMS) that incorporates the relational-data model, normally including a Structured Query Language (SQL) application programming interface. It is a DBMS in which the database is organized and accessed according to the relationships between data items. Oracle is a great DBMS to create our schema and test our queries. To modify the entity, attribute and entity relationship is easier to implement by using Oracle.

**c) EER diagram with all assumptions.**

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**d)** Relation schema after normalization. All relations must be in 3NF. The relation schema should include primary keys as well as foreign keys (if any) for all relations.

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**e) All requested SQL statements.**

CREATE TABLE PEOPLE

(PERSONAL\_ID INT NOT NULL,

FIRST\_NAME VARCHAR2(45) NOT NULL,

LAST\_NAME VARCHAR2(45) NOT NULL,

AGE INT NOT NULL,

GENDER VARCHAR2(1) NOT NULL,

ADDRESS\_LINE\_1 VARCHAR2(45) NOT NULL,

ADDRESS\_LINE\_2 VARCHAR2(45) NOT NULL,

CITY VARCHAR2(45) NOT NULL,

STATE VARCHAR2(45) NOT NULL,

ZIPCODE VARCHAR2(45) NOT NULL,

PHONE\_NUMBER VARCHAR2(45) NOT NULL,

PRIMARY KEY(PERSONAL\_ID));

CREATE TABLE CUSTOMER

(CUSTOMER\_ID INT NOT NULL,

PERSONAL\_ID INT NOT NULL,

FOREIGN KEY(PERSONAL\_ID) REFERENCES PEOPLE(PERSONAL\_ID),

CONSTRAINT UNIQUE\_CUSTOMER\_ID UNIQUE(CUSTOMER\_ID));

CREATE TABLE EMPLOYEE

(PERSONAL\_ID INT NOT NULL,

EMPLOYEE\_ID INT NOT NULL,

RANK VARCHAR2(45) NOT NULL,

TITLE VARCHAR2(45) NOT NULL,

PRIMARY KEY(PERSONAL\_ID),

FOREIGN KEY(PERSONAL\_ID) REFERENCES PEOPLE(PERSONAL\_ID),

CONSTRAINT UNIQUE\_EMPLOYEE\_ID UNIQUE(EMPLOYEE\_ID));

CREATE TABLE DEPARTMENT

(DEPARTMENT\_ID INT NOT NULL,

DEPARTMENT\_NAME VARCHAR2(20) NOT NULL,

PRIMARY KEY (DEPARTMENT\_ID));

CREATE TABLE DEPT\_RECORD

(DEPARTMENT\_ID INT NOT NULL,

START\_DATE DATE NOT NULL,

END\_DATE DATE NOT NULL,

EMPLOYEE\_ID INT NOT NULL,

FOREIGN KEY(DEPARTMENT\_ID) REFERENCES DEPARTMENT(DEPARTMENT\_ID),

FOREIGN KEY(EMPLOYEE\_ID) REFERENCES EMPLOYEE(EMPLOYEE\_ID));

CREATE TABLE JOB\_POSITION (

JOB\_ID INT NOT NULL,

JOB\_DESCRIPTION VARCHAR2(45) NOT NULL,

POSTED\_DATE DATE NOT NULL,

EXPIRE\_DATE VARCHAR2(45) NOT NULL,

DEPARTMENT\_ID INT NOT NULL,

PRIMARY KEY(JOB\_ID),

FOREIGN KEY(DEPARTMENT\_ID) REFERENCES DEPARTMENT(DEPARTMENT\_ID));

CREATE TABLE MARKETING\_SITES

(SITE\_ID INT NOT NULL,

SITE\_NAME VARCHAR2(45) NOT NULL,

SITE\_LOCATION VARCHAR(45) NOT NULL,

PRIMARY KEY(SITE\_ID) );

CREATE TABLE PREFERRED\_SALESMAN

(PERSONAL\_ID INT NOT NULL,

EMPLOYEE\_ID INT NOT NULL,

FOREIGN KEY(PERSONAL\_ID) REFERENCES PEOPLE(PERSONAL\_ID),

FOREIGN KEY (EMPLOYEE\_ID) REFERENCES EMPLOYEE (EMPLOYEE\_ID));

CREATE TABLE SUPERVISOR

(SUPER\_EMPLOYEE\_ID INT NOT NULL,

EMPLOYEE\_ID INT NOT NULL,

FOREIGN KEY(SUPER\_EMPLOYEE\_ID) REFERENCES EMPLOYEE(EMPLOYEE\_ID),

FOREIGN KEY(EMPLOYEE\_ID) REFERENCES EMPLOYEE(EMPLOYEE\_ID));

CREATE TABLE SHIFT

(EMPLOYEE\_ID INT NOT NULL,

START\_TIME VARCHAR2(45) NOT NULL,

END\_TIME VARCHAR2(45) NOT NULL,

FOREIGN KEY(EMPLOYEE\_ID) REFERENCES EMPLOYEE(EMPLOYEE\_ID));

CREATE TABLE SALARY

(EMPLOYEE\_ID INT NOT NULL,

TRANSACTION\_NUMBER INT NOT NULL,

BASE\_SALARY INT NOT NULL,

PAY\_DATE DATE NOT NULL,

AMOUNT INT NOT NULL,

FOREIGN KEY(EMPLOYEE\_ID) REFERENCES EMPLOYEE(EMPLOYEE\_ID),

CONSTRAINT UNIQUE\_TRANSACTION\_NUMBER UNIQUE (TRANSACTION\_NUMBER));

CREATE TABLE INTERVIEW\_RECORDS

(INTERVIEW\_ID INT NOT NULL,

JOB\_ID INT NOT NULL,

INTERVIEW\_DATE DATE NOT NULL,

INTERVIEW\_TIME VARCHAR2(45) NOT NULL,

GRADE INT NOT NULL,

FOREIGN KEY(JOB\_ID) REFERENCES JOB\_POSITION (JOB\_ID),

CONSTRAINT UNIQUE\_INTERVIEW\_ID UNIQUE (INTERVIEW\_ID));

CREATE TABLE POTENTIAL\_EMPLOYEE

(PERSONAL\_ID INT NOT NULL,

INTERVIEW\_ID INT NOT NULL,

FOREIGN KEY(INTERVIEW\_ID) REFERENCES INTERVIEW\_RECORDS(INTERVIEW\_ID),

FOREIGN KEY(PERSONAL\_ID) REFERENCES PEOPLE(PERSONAL\_ID));

CREATE TABLE VENDOR (

ADDRESS VARCHAR2(45) NOT NULL,

VENDOR\_ID INT NOT NULL,

VENDOR\_NAME VARCHAR2(45) NOT NULL,

VENDOR\_URL VARCHAR2(45) NOT NULL,

CREDIT\_RATING VARCHAR2(45) NOT NULL,

PHONE\_NUMBER VARCHAR2(45) NOT NULL,

PRIMARY KEY(VENDOR\_ID));

CREATE TABLE PRODUCT (

PRODUCT\_ID INT NOT NULL,

PRODUCT\_TYPE VARCHAR2(45) NOT NULL,

PRODUCT\_SIZE VARCHAR(45) NOT NULL,

LIST\_PRICE INT NOT NULL,

WEIGHT INT NOT NULL,

PRIMARY KEY(PRODUCT\_ID));

CREATE TABLE PART (

PART\_ID INT NOT NULL,

NAME VARCHAR2(45) NOT NULL,

WEIGHT INT NOT NULL,

PRIMARY KEY(PART\_ID));

CREATE TABLE PURCHASE (

VENDOR\_ID INT NOT NULL,

PART\_ID INT NOT NULL,

PRICE INT NOT NULL,

FOREIGN KEY(VENDOR\_ID) REFERENCES VENDOR(VENDOR\_ID),

FOREIGN KEY(PART\_ID) REFERENCES PART(PART\_ID));

CREATE TABLE ITEM\_RECORDS(

PART\_ID INT NOT NULL,

PRODUCT\_ID INT NOT NULL,

QTY INT NOT NULL,

PRIMARY KEY(PART\_ID,PRODUCT\_ID));

CREATE TABLE SALE\_RECORDS (

EMPLOYEE\_ID INT NOT NULL,

CUSTOMER\_ID INT NOT NULL,

PRODUCT\_ID INT NOT NULL,

SITE\_ID INT NOT NULL,

SALE\_DATE DATE NOT NULL,

SALE\_TIME VARCHAR2(45) NOT NULL,

FOREIGN KEY(PRODUCT\_ID) REFERENCES PRODUCT(PRODUCT\_ID),

FOREIGN KEY(SITE\_ID) REFERENCES MARKETING\_SITES(SITE\_ID),

FOREIGN KEY(EMPLOYEE\_ID) REFERENCES EMPLOYEE(EMPLOYEE\_ID),

FOREIGN KEY(CUSTOMER\_ID) REFERENCES CUSTOMER(CUSTOMER\_ID));

INSERT ALL

into PEOPLE (PERSONAL\_ID, FIRST\_NAME, LAST\_NAME, AGE, GENDER, ADDRESS\_LINE\_1, ADDRESS\_LINE\_2, CITY, STATE, ZIPCODE, PHONE\_NUMBER) values (1, 'Christine', 'Radclyffe', 48, 'F', '20789', '55468 Express Point', 'Cambridge', 'Massachusetts', '02142', '978 558 2970')

into PEOPLE (PERSONAL\_ID, FIRST\_NAME, LAST\_NAME, AGE, GENDER, ADDRESS\_LINE\_1, ADDRESS\_LINE\_2, CITY, STATE, ZIPCODE, PHONE\_NUMBER) values (2, 'Babita', 'Grioli', 32, 'F', '24', '61660 Fuller Trail', 'Buffalo', 'New York', '14210', '716 648 2090')

into PEOPLE (PERSONAL\_ID, FIRST\_NAME, LAST\_NAME, AGE, GENDER, ADDRESS\_LINE\_1, ADDRESS\_LINE\_2, CITY, STATE, ZIPCODE, PHONE\_NUMBER) values (3, 'Hellen', 'Cole', 26, 'F', '96055', '3 Kenwood Place', 'El Paso', 'Texas', '88553', '915 454 1065')

into PEOPLE (PERSONAL\_ID, FIRST\_NAME, LAST\_NAME, AGE, GENDER, ADDRESS\_LINE\_1, ADDRESS\_LINE\_2, CITY, STATE, ZIPCODE, PHONE\_NUMBER) values (4, 'Ashby', 'Esseby', 56, 'M', '71233', '80 Vermont Lane', 'Nashville', 'Tennessee', '37245', '615 598 6831')

into PEOPLE (PERSONAL\_ID, FIRST\_NAME, LAST\_NAME, AGE, GENDER, ADDRESS\_LINE\_1, ADDRESS\_LINE\_2, CITY, STATE, ZIPCODE, PHONE\_NUMBER) values (5, 'Reube', 'Minor', 49, 'M', '40', '2965 Maple Wood Alley', 'Houston', 'Texas', '77250', '713 522 1469')

into PEOPLE (PERSONAL\_ID, FIRST\_NAME, LAST\_NAME, AGE, GENDER, ADDRESS\_LINE\_1, ADDRESS\_LINE\_2, CITY, STATE, ZIPCODE, PHONE\_NUMBER) values (6, 'Winslow', 'Oxton', 42, 'M', '66163', '02 Merry Court', 'Johnson City', 'Tennessee', '37605', '423 621 4528')

into PEOPLE (PERSONAL\_ID, FIRST\_NAME, LAST\_NAME, AGE, GENDER, ADDRESS\_LINE\_1, ADDRESS\_LINE\_2, CITY, STATE, ZIPCODE, PHONE\_NUMBER) values (7, 'Heywood', 'Fassmann', 28, 'M', '2487', '56 Helena Point', 'Columbus', 'Georgia', '31914', '706 465 7000')

into PEOPLE (PERSONAL\_ID, FIRST\_NAME, LAST\_NAME, AGE, GENDER, ADDRESS\_LINE\_1, ADDRESS\_LINE\_2, CITY, STATE, ZIPCODE, PHONE\_NUMBER) values (8, 'Mimi', 'Roderighi', 63, 'F', '06', '7830 Colorado Park', 'Houston', 'Texas', '77005', '713 622 1079')

into PEOPLE (PERSONAL\_ID, FIRST\_NAME, LAST\_NAME, AGE, GENDER, ADDRESS\_LINE\_1, ADDRESS\_LINE\_2, CITY, STATE, ZIPCODE, PHONE\_NUMBER) values (9, 'Loella', 'Phelan', 28, 'F', '157', '4659 Cordelia Plaza', 'Springfield', 'Illinois', '62764', '217 721 2388')

into PEOPLE (PERSONAL\_ID, FIRST\_NAME, LAST\_NAME, AGE, GENDER, ADDRESS\_LINE\_1, ADDRESS\_LINE\_2, CITY, STATE, ZIPCODE, PHONE\_NUMBER) values (10, 'Huey', 'Budgett', 43, 'M', '3', '978 Mitchell Terrace', 'Hot Springs National Park', 'Arkansas', '71914', '501 578 5897')

into PEOPLE (PERSONAL\_ID, FIRST\_NAME, LAST\_NAME, AGE, GENDER, ADDRESS\_LINE\_1, ADDRESS\_LINE\_2, CITY, STATE, ZIPCODE, PHONE\_NUMBER) values (11, 'Ellsworth', 'Attrey', 56, 'M', '0', '457 Vernon Circle', 'Roanoke', 'Virginia', '24029', '540 858 2717')

into PEOPLE (PERSONAL\_ID, FIRST\_NAME, LAST\_NAME, AGE, GENDER, ADDRESS\_LINE\_1, ADDRESS\_LINE\_2, CITY, STATE, ZIPCODE, PHONE\_NUMBER) values (12, 'Zorine', 'D''Agostino', 42, 'F', '780', '46 Hansons Court', 'Houston', 'Texas', '77201', '832 402 9709')

into PEOPLE (PERSONAL\_ID, FIRST\_NAME, LAST\_NAME, AGE, GENDER, ADDRESS\_LINE\_1, ADDRESS\_LINE\_2, CITY, STATE, ZIPCODE, PHONE\_NUMBER) values (13, 'Sib', 'Piburn', 43, 'F', '62', '3 Walton Terrace', 'Carlsbad', 'California', '92013', '760 307 2109')

into PEOPLE (PERSONAL\_ID, FIRST\_NAME, LAST\_NAME, AGE, GENDER, ADDRESS\_LINE\_1, ADDRESS\_LINE\_2, CITY, STATE, ZIPCODE, PHONE\_NUMBER) values (14, 'Rafferty', 'Haighton', 35, 'M', '91', '066 Ramsey Place', 'Lakewood', 'Washington', '98498', '253 449 1602')

into PEOPLE (PERSONAL\_ID, FIRST\_NAME, LAST\_NAME, AGE, GENDER, ADDRESS\_LINE\_1, ADDRESS\_LINE\_2, CITY, STATE, ZIPCODE, PHONE\_NUMBER) values (15, 'Wat', 'Silby', 26, 'M', '7', '7321 Old Gate Crossing', 'Dayton', 'Ohio', '45419', '937 672 1956')

into PEOPLE (PERSONAL\_ID, FIRST\_NAME, LAST\_NAME, AGE, GENDER, ADDRESS\_LINE\_1, ADDRESS\_LINE\_2, CITY, STATE, ZIPCODE, PHONE\_NUMBER) values (16, 'Karoly', 'Kissick', 18, 'F', '915', '0 Twin Pines Lane', 'Norfolk', 'Virginia', '23509', '757 724 5575')

into PEOPLE (PERSONAL\_ID, FIRST\_NAME, LAST\_NAME, AGE, GENDER, ADDRESS\_LINE\_1, ADDRESS\_LINE\_2, CITY, STATE, ZIPCODE, PHONE\_NUMBER) values (17, 'Sumner', 'Pritty', 48, 'M', '365', '9327 Onsgard Park', 'Houston', 'Texas', '77212', '713 745 5541')

into PEOPLE (PERSONAL\_ID, FIRST\_NAME, LAST\_NAME, AGE, GENDER, ADDRESS\_LINE\_1, ADDRESS\_LINE\_2, CITY, STATE, ZIPCODE, PHONE\_NUMBER) values (18, 'Muhammad', 'Apps', 43, 'M', '93', '929 Elmside Crossing', 'Austin', 'Texas', '78783', '512 665 2346')

into PEOPLE (PERSONAL\_ID, FIRST\_NAME, LAST\_NAME, AGE, GENDER, ADDRESS\_LINE\_1, ADDRESS\_LINE\_2, CITY, STATE, ZIPCODE, PHONE\_NUMBER) values (19, 'Joye', 'Feifer', 56, 'F', '8', '988 Blaine Street', 'Jackson', 'Mississippi', '39210', '601 148 8409')

into PEOPLE (PERSONAL\_ID, FIRST\_NAME, LAST\_NAME, AGE, GENDER, ADDRESS\_LINE\_1, ADDRESS\_LINE\_2, CITY, STATE, ZIPCODE, PHONE\_NUMBER) values (20, 'Cullan', 'Victory', 29, 'M', '62', '4 Carioca Hill', 'Albany', 'New York', '12242', '518 637 6786')

select \* from dual;

INSERT ALL

into CUSTOMER (CUSTOMER\_ID, PERSONAL\_ID) values (411, 2)

into CUSTOMER (CUSTOMER\_ID, PERSONAL\_ID) values (421, 4)

into CUSTOMER (CUSTOMER\_ID, PERSONAL\_ID) values (481, 6)

into CUSTOMER (CUSTOMER\_ID, PERSONAL\_ID) values (444, 8)

select\* from dual;

INSERT ALL

into EMPLOYEE (PERSONAL\_ID, EMPLOYEE\_ID, RANK,TITLE) values (9, 811, 'SENIOR' , 'CEO')

into EMPLOYEE (PERSONAL\_ID, EMPLOYEE\_ID, RANK,TITLE) values (10, 854, 'INTERN', 'SALESMAN')

into EMPLOYEE (PERSONAL\_ID, EMPLOYEE\_ID, RANK,TITLE) values (11, 824, 'JUNIOR' , 'INTERVIWER')

into EMPLOYEE (PERSONAL\_ID, EMPLOYEE\_ID, RANK,TITLE) values (12, 836, 'INTERN', 'SALESMAN')

into EMPLOYEE (PERSONAL\_ID, EMPLOYEE\_ID, RANK,TITLE) values (13, 864, 'JUNIOR' , 'INTERVIWER')

into EMPLOYEE (PERSONAL\_ID, EMPLOYEE\_ID, RANK,TITLE) values (14, 878, 'ENTRY', 'DRIVER')

select\* from dual;

INSERT ALL

Into DEPARTMENT(DEPARTMENT\_ID,DEPARTMENT\_NAME) values ('1111', 'IT')

Into DEPARTMENT(DEPARTMENT\_ID,DEPARTMENT\_NAME) values ('2222', 'MANUFACTURING')

Into DEPARTMENT(DEPARTMENT\_ID,DEPARTMENT\_NAME) values ('3333', 'MARKETING')

Into DEPARTMENT(DEPARTMENT\_ID,DEPARTMENT\_NAME) values ('4444', 'SERVICE')

Into DEPARTMENT(DEPARTMENT\_ID,DEPARTMENT\_NAME) values ('5555', 'CUSTOMER CARE')

select\* from dual;

INSERT ALL

Into DEPT\_RECORD(DEPARTMENT\_ID,START\_DATE, END\_DATE, EMPLOYEE\_ID) values ('1111', '01-JAN-2000', '12-DEC-2021', 811)

Into DEPT\_RECORD(DEPARTMENT\_ID,START\_DATE, END\_DATE, EMPLOYEE\_ID) values ('2222', '01-JAN-2000', '12-DEC-2021', 854)

Into DEPT\_RECORD(DEPARTMENT\_ID,START\_DATE, END\_DATE, EMPLOYEE\_ID) values ('3333', '01-JAN-2000', '12-DEC-2021', 824)

select\* from dual;

INSERT ALL

Into JOB\_POSITION(JOB\_ID, JOB\_DESCRIPTION, POSTED\_DATE, EXPIRE\_DATE, DEPARTMENT\_ID) values ('11111', 'SALESMAN', '01-JAN-2021', '01-DEC-2021', '3333')

Into JOB\_POSITION(JOB\_ID, JOB\_DESCRIPTION, POSTED\_DATE, EXPIRE\_DATE, DEPARTMENT\_ID) values ('12345', 'SALESMAN', '01-JAN-2021', '01-DEC-2021', '3333')

Into JOB\_POSITION(JOB\_ID, JOB\_DESCRIPTION, POSTED\_DATE, EXPIRE\_DATE, DEPARTMENT\_ID) values ('154321', 'CUSTOMER CARE', '01-JAN-2021', '01-DEC-2021', '1111')

Into JOB\_POSITION(JOB\_ID, JOB\_DESCRIPTION, POSTED\_DATE, EXPIRE\_DATE, DEPARTMENT\_ID) values ('12121', 'SALESMAN', '01-JAN-2021', '01-DEC-2021', '3333')

Into JOB\_POSITION(JOB\_ID, JOB\_DESCRIPTION, POSTED\_DATE, EXPIRE\_DATE, DEPARTMENT\_ID) values ('13544', 'DRIVER', '01-JAN-2021', '01-DEC-2021', '4444')

select\* from dual;

INSERT ALL

Into MARKETING\_SITES(SITE\_ID, SITE\_NAME, SITE\_LOCATION ) values ('000111', 'GOOGLE', 'Newyork')

Into MARKETING\_SITES(SITE\_ID, SITE\_NAME, SITE\_LOCATION ) values ('000222', 'FACEBOOK', 'California')

Into MARKETING\_SITES(SITE\_ID, SITE\_NAME, SITE\_LOCATION ) values ('000333', 'AMAZON', 'Seattle')

select\* from dual;

INSERT ALL

Into PART(PART\_ID, NAME, WEIGHT ) values ('100', 'Cup', '2')

Into PART(PART\_ID, NAME, WEIGHT ) values ('200', 'Lid', '1')

Into PART(PART\_ID, NAME, WEIGHT ) values ('300', 'Glass', '6')

Into PART(PART\_ID, NAME, WEIGHT ) values ('400', 'Plate', '8')

Into PART(PART\_ID, NAME, WEIGHT ) values ('500', 'Bowl', '9')

select\* from dual;

INSERT INTO INTERVIEW\_RECORDS(INTERVIEW\_ID, JOB\_ID, INTERVIEW\_DATE, INTERVIEW\_TIME, GRADE) values (712, '11111', '01-MAR-2021', '9AM', 76);

INSERT INTO INTERVIEW\_RECORDS(INTERVIEW\_ID, JOB\_ID, INTERVIEW\_DATE, INTERVIEW\_TIME, GRADE) values (723, '13544', '01-MAY-2021', '10AM', 56);

INSERT INTO INTERVIEW\_RECORDS(INTERVIEW\_ID, JOB\_ID, INTERVIEW\_DATE, INTERVIEW\_TIME, GRADE) values (735, '12121', '01-JULY-2021', '10AM', 66);

INSERT ALL

Into preferred\_salesman (PERSONAL\_ID, EMPLOYEE\_ID) values (2,811)

Into preferred\_salesman (PERSONAL\_ID, EMPLOYEE\_ID) values (4,854)

Into preferred\_salesman (PERSONAL\_ID, EMPLOYEE\_ID) values (6,836)

Into preferred\_salesman (PERSONAL\_ID, EMPLOYEE\_ID) values (8,864)

select\* from dual;

INSERT ALL

Into SUPERVISOR (SUPER\_EMPLOYEE\_ID, EMPLOYEE\_ID) values (811,854)

Into SUPERVISOR (SUPER\_EMPLOYEE\_ID, EMPLOYEE\_ID) values (824,836)

select\* from dual;

INSERT ALL

Into SHIFT (EMPLOYEE\_ID,START\_TIME, END\_TIME) values (811, '10AM', '6PM')

Into SHIFT (EMPLOYEE\_ID,START\_TIME, END\_TIME) values (854, '9AM', '5PM')

Into SHIFT (EMPLOYEE\_ID,START\_TIME, END\_TIME) values (824, '8AM', '4PM')

select\* from dual;

INSERT ALL

Into SALARY (EMPLOYEE\_ID, TRANSACTION\_NUMBER, BASE\_SALARY, PAY\_DATE, AMOUNT) values (811, '999', 5000, '01-NOV-2021', 7500)

Into SALARY (EMPLOYEE\_ID, TRANSACTION\_NUMBER, BASE\_SALARY, PAY\_DATE, AMOUNT) values (854, '989', 6000, '01-NOV-2021', 8500)

Into SALARY (EMPLOYEE\_ID, TRANSACTION\_NUMBER, BASE\_SALARY, PAY\_DATE, AMOUNT) values (824, '979', 7000, '01-NOV-2021', 9500)

select\* from dual;

INSERT ALL

Into POTENTIAL\_EMPLOYEE (PERSONAL\_ID, INTERVIEW\_ID) values (2,712)

Into POTENTIAL\_EMPLOYEE (PERSONAL\_ID, INTERVIEW\_ID) values (2,723)

select\* from dual;

INSERT ALL

into VENDOR (ADDRESS, VENDOR\_ID, VENDOR\_NAME, VENDOR\_URL , CREDIT\_RATING, PHONE\_NUMBER ) values ('1201 PARK LN', '500', 'DAVID', 'davidllc.com', '780' , '1234567890' )

into VENDOR (ADDRESS, VENDOR\_ID, VENDOR\_NAME, VENDOR\_URL , CREDIT\_RATING, PHONE\_NUMBER ) values ('1301 PINE LN', '501', 'ROCKY', 'rockyllc.com', '740' , '0987654321' )

into VENDOR (ADDRESS, VENDOR\_ID, VENDOR\_NAME, VENDOR\_URL , CREDIT\_RATING, PHONE\_NUMBER ) values ('1551 TREE LN', '502', 'ADAM', 'adamllc.com', '680', '789555123' )

select\* from dual;

INSERT ALL

into PRODUCT (PRODUCT\_ID, PRODUCT\_TYPE, PRODUCT\_SIZE, LIST\_PRICE, WEIGHT) values (9999, 'LAPTOP', '16', 750, '3')

into PRODUCT (PRODUCT\_ID, PRODUCT\_TYPE, PRODUCT\_SIZE, LIST\_PRICE, WEIGHT) values (8888, 'PRINTER', '20', 200, '5')

into PRODUCT (PRODUCT\_ID, PRODUCT\_TYPE, PRODUCT\_SIZE, LIST\_PRICE, WEIGHT) values (7777, 'MONITOR', '30', 400, '7')

into PRODUCT (PRODUCT\_ID, PRODUCT\_TYPE, PRODUCT\_SIZE, LIST\_PRICE, WEIGHT) values (6666, 'BOX', '12', 75, '2')

select\* from dual;

INSERT ALL

into PURCHASE (VENDOR\_ID, PART\_ID, PRICE) values ('500', '100', '30')

into PURCHASE (VENDOR\_ID, PART\_ID, PRICE) values ('501', '200', '80')

into PURCHASE (VENDOR\_ID, PART\_ID, PRICE) values ('502', '300', '150')

select\* from dual;

INSERT ALL

into ITEM\_RECORDS (PART\_ID, PRODUCT\_ID, QTY) values ('100', '6666', '5')

into ITEM\_RECORDS (PART\_ID, PRODUCT\_ID, QTY) values ('200', '7777', '10')

into ITEM\_RECORDS (PART\_ID, PRODUCT\_ID, QTY) values ('300', '8888', '15')

select\* from dual;

INSERT ALL

into SALE\_RECORDS (EMPLOYEE\_ID, CUSTOMER\_ID,PRODUCT\_ID, SITE\_ID, SALE\_DATE, SALE\_TIME) values ('811', '1', '7777', '000111', '12-JUN-2021', '5:PM')

into SALE\_RECORDS (EMPLOYEE\_ID, CUSTOMER\_ID,PRODUCT\_ID, SITE\_ID, SALE\_DATE, SALE\_TIME) values ('864', '6', '8888', '000222', '12-SEP-2021', '3PM')

into SALE\_RECORDS (EMPLOYEE\_ID, CUSTOMER\_ID,PRODUCT\_ID, SITE\_ID, SALE\_DATE, SALE\_TIME) values ('824', '15', '9999', '000333', '21-AUG-2021', '1PM')

select\*from dual;

CREATE VIEW AVG\_SALARY(EMPLOYEE\_ID, AVERAGE\_SALARY)

AS SELECT EMPLOYEE\_ID, AVG(AMOUNT)

FROM SALARY

GROUP BY EMPLOYEE\_ID;

CREATE VIEW INTERVIEW\_RESULTS

(INTERVIEW\_ID, NUMBER\_INTERVIEWS, PASSED\_INTERVIEWS)

AS SELECT

INTERVIEW\_RECORDS.INTERVIEW\_ID,(SELECT COUNT(\*) FROM INTERVIEW\_RECORDS WHERE INTERVIEW\_ID = INTERVIEW\_RECORDS.INTERVIEW\_ID),

(SELECT COUNT(\*) FROM INTERVIEW\_RECORDS WHERE INTERVIEW\_ID = INTERVIEW\_RECORDS.INTERVIEW\_ID AND GRADE>60)

FROM INTERVIEW\_RECORDS

GROUP BY INTERVIEW\_ID;

**f) Dependency diagram.**

