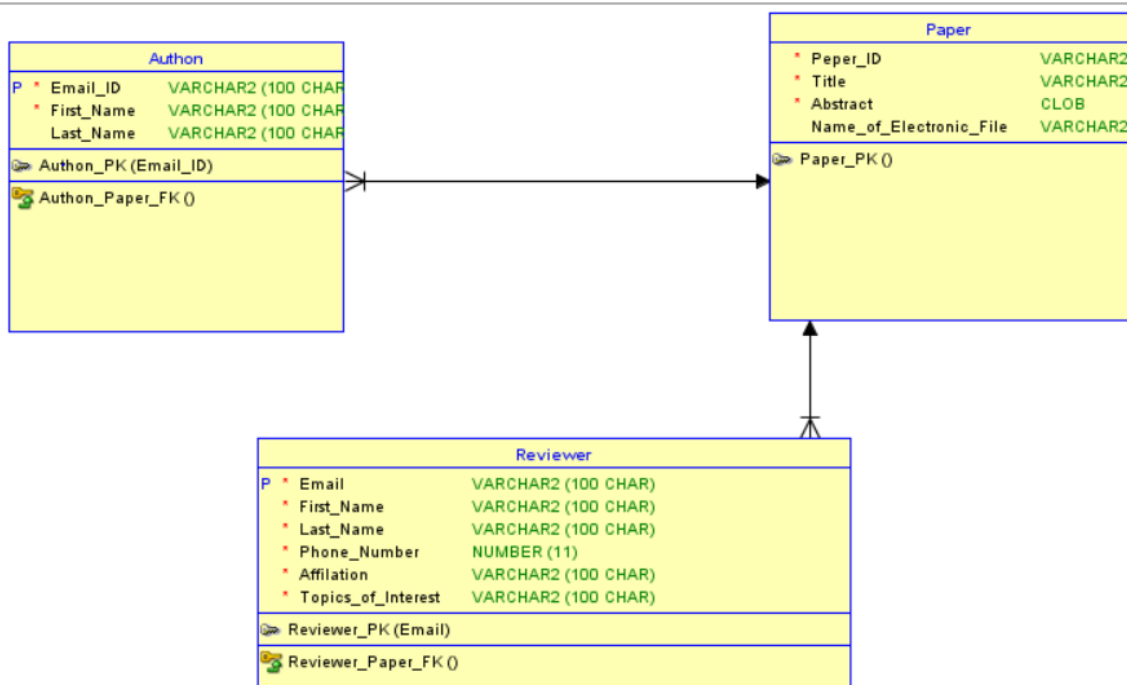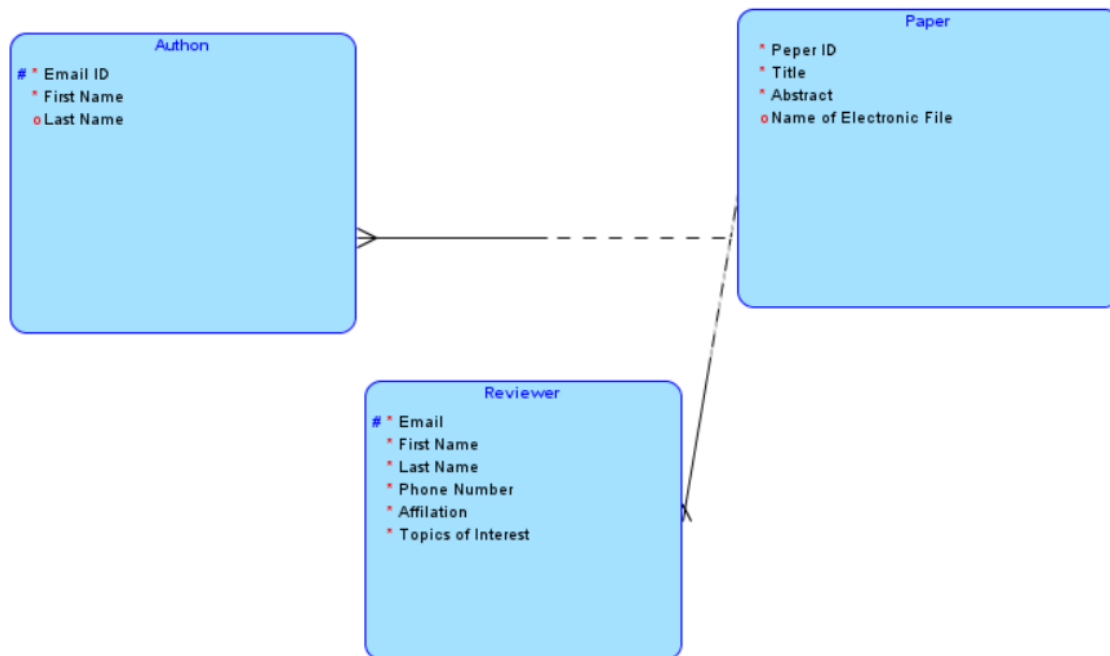# DB LAB LAB 06

Task 01

DDL File Editor - Oracle Database 11g

| Oracle Database 11g ▾ | Relational_1 ▾ | Generate | Clear |

```
 1  -- Generated by Oracle SQL Developer Data Modeler 4.1.1.888
 2  --   at:        2022-10-15 21:33:50 PKT
 3  --   site:      Oracle Database 11g
 4  --   type:      Oracle Database 11g
 5
 6
 7
 8
 9  CREATE TABLE Authon
10      (
11        Email_ID    VARCHAR2 (100 CHAR) NOT NULL ,
12        First_Name VARCHAR2 (100 CHAR) NOT NULL ,
13        Last_Name   VARCHAR2 (100 CHAR)
14      ) ;
15  ALTER TABLE Authon ADD CONSTRAINT Authon_PK PRIMARY KEY ( Email_ID ) ;
16
17
18  CREATE TABLE Paper
19      (
20        Peper_ID VARCHAR2 (100 CHAR) NOT NULL ,
21        Title    VARCHAR2 (100 CHAR) NOT NULL ,
22        Abstract CLOB NOT NULL ,
23        Name_of_Electronic_File VARCHAR2 (100 CHAR)
24      ) ;
25
26
27  CREATE TABLE Reviewer
28      (
29        Email              VARCHAR2 (100 CHAR) NOT NULL ,
30        First_Name         VARCHAR2 (100 CHAR) NOT NULL ,
31        Last_Name          VARCHAR2 (100 CHAR) NOT NULL ,
32        Phone_Number       NUMBER (11) NOT NULL ,
33        Affilation         VARCHAR2 (100 CHAR) NOT NULL ,
34        Topics_of_Interest VARCHAR2 (100 CHAR) NOT NULL
35      ) ;
36  ALTER TABLE Reviewer ADD CONSTRAINT Reviewer_PK PRIMARY KEY ( Email ) ;
37
38
```

Authon

- # * Email ID
- * First Name
- o Last Name

Paper

- * Peper ID
- * Title
- * Abstract
- o Name of Electronic File

Reviewer

- # * Email
- * First Name
- * Last Name
- * Phone Number
- * Affilation
- * Topics of Interest

Authon

P	* Email_ID	VARCHAR2 (100 CHAR
	* First_Name	VARCHAR2 (100 CHAR
	Last_Name	VARCHAR2 (100 CHAR

🔑 Authon_PK (Email_ID)

🔑 Authon_Paper_FK ()

Paper

	* Peper_ID	VARCHAR2
	* Title	VARCHAR2
	* Abstract	CLOB
	Name_of_Electronic_File	VARCHAR2

🔑 Paper_PK ()

Reviewer

P	* Email	VARCHAR2 (100 CHAR)
	* First_Name	VARCHAR2 (100 CHAR)
	* Last_Name	VARCHAR2 (100 CHAR)
	* Phone_Number	NUMBER (11)
	* Affilation	VARCHAR2 (100 CHAR)
	* Topics_of_Interest	VARCHAR2 (100 CHAR)

🔑 Reviewer_PK (Email)

🔑 Reviewer_Paper_FK ()

Task 02

```
1    -- Generated by Oracle SQL Developer Data Modeler 4.1.1.888
2    --   at:        2022-10-15 21:56:36 PKT
3    --   site:      Oracle Database 11g
4    --   type:      Oracle Database 11g
5
6
7
8
9  CREATE TABLE Chair
10    (
11      Cstart_date              DATE ,
12      Department_Dcode         VARCHAR2 (100 CHAR) NOT NULL ,
13      Department_College_Cname VARCHAR2 (100 CHAR) NOT NULL ,
14      Chair_ID                 NUMBER NOT NULL
15    ) ;
16  CREATE UNIQUE INDEX Chair__IDX ON Chair
17    (
18      Department_Dcode ASC , Department_College_Cname ASC
19    )
20    ;
21  ALTER TABLE Chair ADD CONSTRAINT Chair_PK PRIMARY KEY ( Chair_ID ) ;
22
23
24  CREATE TABLE College
25    (
26      Cname   VARCHAR2 (100 CHAR) NOT NULL ,
27      Coffice VARCHAR2 (100 CHAR) NOT NULL ,
28      Cphone  VARCHAR2 (100 CHAR) NOT NULL
29    ) ;
30  ALTER TABLE College ADD CONSTRAINT College_PK PRIMARY KEY ( Cname ) ;
31
32
33  CREATE TABLE Courses
34    (
35      Ccode            VARCHAR2 (100 CHAR) NOT NULL ,
36      Cname            VARCHAR2 (100 CHAR) NOT NULL ,
37      Credits          NUMBER (100) NOT NULL ,
38      "Level"          VARCHAR2 (100 CHAR) NOT NULL ,
39      CDesc            VARCHAR2 (100 CHAR) NOT NULL ,
40      Department_Dcode VARCHAR2 (100 CHAR) NOT NULL ,
41      Department_Cname VARCHAR2 (100 CHAR) NOT NULL
42    ) ;
43  ALTER TABLE Courses ADD CONSTRAINT Courses_PK PRIMARY KEY ( Ccode, Cname ) ;
44
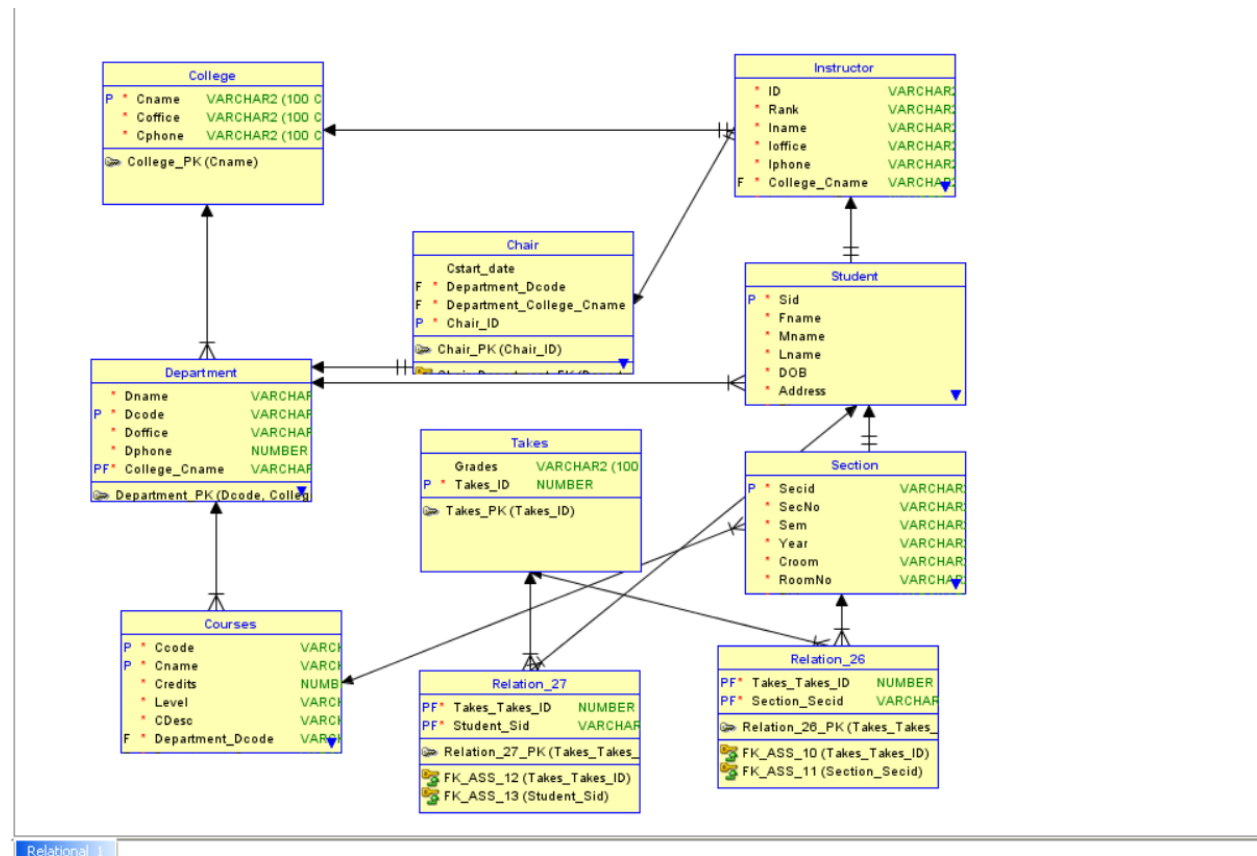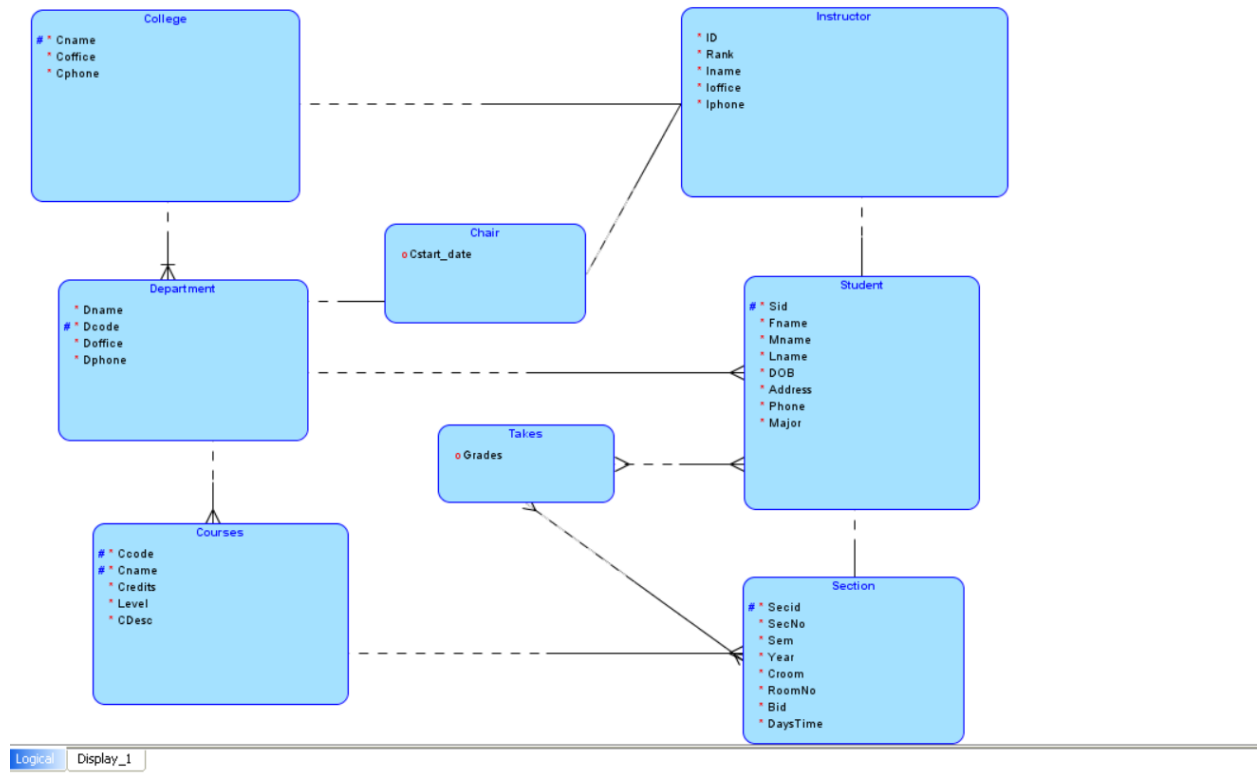```

```sql
44
45
46  CREATE TABLE Department
47      (
48      Dname          VARCHAR2 (100 CHAR) NOT NULL ,
49      Dcode          VARCHAR2 (100 CHAR) NOT NULL ,
50      Doffice        VARCHAR2 (100 CHAR) NOT NULL ,
51      Dphone         NUMBER (11) NOT NULL ,
52      College_Cname VARCHAR2 (100 CHAR) NOT NULL
53      ) ;
54  ALTER TABLE Department ADD CONSTRAINT Department_PK PRIMARY KEY ( Dcode, College_Cname ) ;
55
56
57  CREATE TABLE Instructor
58      (
59      ID             VARCHAR2 (100 CHAR) NOT NULL ,
60      Rank           VARCHAR2 (100 CHAR) NOT NULL ,
61      Iname          VARCHAR2 (100 CHAR) NOT NULL ,
62      Ioffice        VARCHAR2 (100 CHAR) NOT NULL ,
63      Iphone         VARCHAR2 (100 CHAR) NOT NULL ,
64      College_Cname  VARCHAR2 (100 CHAR) NOT NULL ,
65      Instructor_ID  NUMBER NOT NULL ,
66      Chair_Chair_ID NUMBER NOT NULL
67      ) ;
68  CREATE UNIQUE INDEX Instructor__IDX ON Instructor
69      (
70      College_Cname ASC
71      )
72      ;
73  CREATE UNIQUE INDEX Instructor__IDXv1 ON Instructor
74      (
75      Chair_Chair_ID ASC
76      )
77      ;
78  ALTER TABLE Instructor ADD CONSTRAINT Instructor_PK PRIMARY KEY ( Instructor_ID ) ;
79
80
81  CREATE TABLE Relation_26
82      (
83      Takes_Takes_ID NUMBER NOT NULL ,
84      Section_Secid  VARCHAR2 (100 CHAR) NOT NULL
85      ) ;
86  ALTER TABLE Relation_26 ADD CONSTRAINT Relation_26_PK PRIMARY KEY ( Takes_Takes_ID, Section_Secid ) ;
87
88  |
```

```sql
89  CREATE TABLE Relation_27
90    (
91      Takes_Takes_ID NUMBER NOT NULL ,
92      Student_Sid    VARCHAR2 (100 CHAR) NOT NULL
93    ) ;
94  ALTER TABLE Relation_27 ADD CONSTRAINT Relation_27_PK PRIMARY KEY ( Takes_Takes_ID, Student_Sid ) ;
95
96
97  CREATE TABLE Section
98    (
99      Secid         VARCHAR2 (100 CHAR) NOT NULL ,
100     SecNo         VARCHAR2 (100 CHAR) NOT NULL ,
101     Sem           VARCHAR2 (100 CHAR) NOT NULL ,
102     YEAR          VARCHAR2 (100 CHAR) NOT NULL ,
103     Croom         VARCHAR2 (100 CHAR) NOT NULL ,
104     RoomNo        VARCHAR2 (100 CHAR) NOT NULL ,
105     Bid           VARCHAR2 (100 CHAR) NOT NULL ,
106     DaysTime      VARCHAR2 (100 CHAR) NOT NULL ,
107     Student_Sid   VARCHAR2 (100 CHAR) NOT NULL ,
108     Courses_Ccode VARCHAR2 (100 CHAR) NOT NULL ,
109     Courses_Cname VARCHAR2 (100 CHAR) NOT NULL
110   ) ;
111 CREATE UNIQUE INDEX Section__IDX ON Section
112   (
113     Student_Sid ASC
114   )
115   ;
116 ALTER TABLE Section ADD CONSTRAINT Section_PK PRIMARY KEY ( Secid ) ;
117
118
119 CREATE TABLE Student
120   (
121     Sid                      VARCHAR2 (100 CHAR) NOT NULL ,
122     Fname                    VARCHAR2 (100 CHAR) NOT NULL ,
123     Mname                    VARCHAR2 (100 CHAR) NOT NULL ,
124     Lname                    VARCHAR2 (100 CHAR) NOT NULL ,
125     DOB                      DATE NOT NULL ,
126     Address                  VARCHAR2 (100 CHAR) NOT NULL ,
127     Phone                    NUMBER (11) NOT NULL ,
128     Major                    VARCHAR2 (100 CHAR) NOT NULL ,
129     Department_Dcode         VARCHAR2 (100 CHAR) NOT NULL ,
130     Department_College_Cname VARCHAR2 (100 CHAR) NOT NULL ,
131     Instructor_Instructor_ID NUMBER NOT NULL
132   ) ;

133 CREATE UNIQUE INDEX Student__IDX ON Student
134   (
135     Instructor_Instructor_ID ASC
136   )
137   ;
138 ALTER TABLE Student ADD CONSTRAINT Student_PK PRIMARY KEY ( Sid ) ;
139
140
141 CREATE TABLE Takes
142   ( Grades VARCHAR2 (100 CHAR) , Takes_ID NUMBER NOT NULL
143   ) ;
144 ALTER TABLE Takes ADD CONSTRAINT Takes_PK PRIMARY KEY ( Takes_ID ) ;
145
146
147 ALTER TABLE Chair ADD CONSTRAINT Chair_Department_FK FOREIGN KEY ( Department_Dcode, Department_College_Cname ) REFERENCES Department ( Dcode, College_Cname ) ;
148
149 ALTER TABLE Courses ADD CONSTRAINT Courses_Department_FK FOREIGN KEY ( Department_Dcode, Department_Cname ) REFERENCES Department ( Dcode, College_Cname ) ;
150
151 ALTER TABLE Department ADD CONSTRAINT Department_College_FK FOREIGN KEY ( College_Cname ) REFERENCES College ( Cname ) ;
152
153 ALTER TABLE Relation_26 ADD CONSTRAINT FK_ASS_10 FOREIGN KEY ( Takes_Takes_ID ) REFERENCES Takes ( Takes_ID ) ;
154
155 ALTER TABLE Relation_26 ADD CONSTRAINT FK_ASS_11 FOREIGN KEY ( Section_Secid ) REFERENCES Section ( Secid ) ;
156
157 ALTER TABLE Relation_27 ADD CONSTRAINT FK_ASS_12 FOREIGN KEY ( Takes_Takes_ID ) REFERENCES Takes ( Takes_ID ) ;
158
159 ALTER TABLE Relation_27 ADD CONSTRAINT FK_ASS_13 FOREIGN KEY ( Student_Sid ) REFERENCES Student ( Sid ) ;
160
161 ALTER TABLE Instructor ADD CONSTRAINT Instructor_Chair_FK FOREIGN KEY ( Chair_Chair_ID ) REFERENCES Chair ( Chair_ID ) ;
162
163 ALTER TABLE Instructor ADD CONSTRAINT Instructor_College_FK FOREIGN KEY ( College_Cname ) REFERENCES College ( Cname ) ;
164
165 ALTER TABLE Section ADD CONSTRAINT Section_Courses_FK FOREIGN KEY ( Courses_Ccode, Courses_Cname ) REFERENCES Courses ( Ccode, Cname ) ;
166
167 ALTER TABLE Section ADD CONSTRAINT Section_Student_FK FOREIGN KEY ( Student_Sid ) REFERENCES Student ( Sid ) ;
168
169 ALTER TABLE Student ADD CONSTRAINT Student_Department_FK FOREIGN KEY ( Department_Dcode, Department_College_Cname ) REFERENCES Department ( Dcode, College_Cname ) ;
170
171 ALTER TABLE Student ADD CONSTRAINT Student_Instructor_FK FOREIGN KEY ( Instructor_Instructor_ID ) REFERENCES Instructor ( Instructor_ID ) ;
172
173 CREATE SEQUENCE Chair_Chair_ID_SEQ START WITH 1 NOCACHE ORDER ;
174 CREATE OR REPLACE TRIGGER Chair_Chair_ID_TRG BEFORE
175   INSERT ON Chair FOR EACH ROW WHEN (NEW.Chair_ID IS NULL) BEGIN :NEW.Chair_ID := Chair_Chair_ID_SEQ.NEXTVAL;
176 END;
```

Logical Diagram

College
- # * Cname
- * Coffice
- * Cphone

Instructor
- * ID
- * Rank
- * Iname
- * Ioffice
- * Iphone

Chair
- o Cstart_date

Department
- * Dname
- # * Dcode
- * Doffice
- * Dphone

Student
- # * Sid
- * Fname
- * Mname
- * Lname
- * DOB
- * Address
- * Phone
- * Major

Takes
- o Grades

Courses
- # * Ccode
- # * Cname
- * Credits
- * Level
- * CDesc

Section
- # * Secid
- * SecNo
- * Sem
- * Year
- * Croom
- * RoomNo
- * Bid
- * DaysTime

Logical | Display_1

Relational Diagram

College
P	* Cname	VARCHAR2 (100 C
	* Coffice	VARCHAR2 (100 C
	* Cphone	VARCHAR2 (100 C

College_PK (Cname)

Instructor
	* ID	VARCHAR2
	* Rank	VARCHAR2
	* Iname	VARCHAR2
	* Ioffice	VARCHAR2
	* Iphone	VARCHAR2
F	* College_Cname	VARCHAR2

Chair
	Cstart_date	
F	* Department_Dcode	
F	* Department_College_Cname	
P	* Chair_ID	

Chair_PK (Chair_ID)

Student
P	* Sid	
	* Fname	
	* Mname	
	* Lname	
	* DOB	
	* Address	

Department
	* Dname	VARCHAR
P	* Dcode	VARCHAR
	* Doffice	VARCHAR
	* Dphone	NUMBER
PF	* College_Cname	VARCHAR

Department_PK (Dcode, Colleg

Takes
	Grades	VARCHAR2 (100
P	* Takes_ID	NUMBER

Takes_PK (Takes_ID)

Section
P	* Secid	VARCHAR
	* SecNo	VARCHAR
	* Sem	VARCHAR
	* Year	VARCHAR
	* Croom	VARCHAR
	* RoomNo	VARCHAR

Courses
P	* Ccode	VARCH
P	* Cname	VARCH
	* Credits	NUMB
	* Level	VARCH
	* CDesc	VARCH
F	* Department_Dcode	VARCH

Relation_27
PF	* Takes_Takes_ID	NUMBER
PF	* Student_Sid	VARCHAR

Relation_27_PK (Takes_Takes_

FK_ASS_12 (Takes_Takes_ID)
FK_ASS_13 (Student_Sid)

Relation_26
PF	* Takes_Takes_ID	NUMBER
PF	* Section_Secid	VARCHAR

Relation_26_PK (Takes_Takes_

FK_ASS_10 (Takes_Takes_ID)
FK_ASS_11 (Section_Secid)

Relational_1

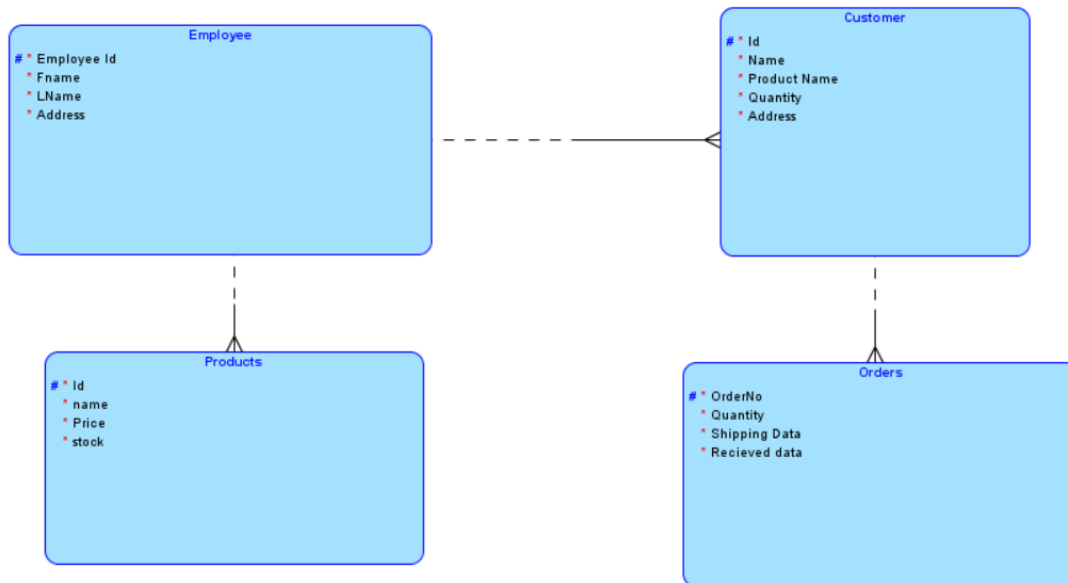# Task 03

```sql
 5  CREATE TABLE Customer
 6    (
 7     Id                  VARCHAR2 (100 CHAR) NOT NULL ,
 8     Name                VARCHAR2 (100 CHAR) NOT NULL ,
 9     Product_Name        VARCHAR2 (100 CHAR) NOT NULL ,
10     Quantity            NUMBER (10000) NOT NULL ,
11     Address             VARCHAR2 (100 CHAR) NOT NULL ,
12     Employee_Employee_Id VARCHAR2 (100 CHAR) NOT NULL
13    ) ;
14  ALTER TABLE Customer ADD CONSTRAINT Customer_PK PRIMARY KEY ( Id ) ;
15
16
17  CREATE TABLE Employee
18    (
19     Employee_Id VARCHAR2 (100 CHAR) NOT NULL ,
20     Fname       VARCHAR2 (100 CHAR) NOT NULL ,
21     LName       VARCHAR2 (100 CHAR) NOT NULL ,
22     Address     VARCHAR2 (100 CHAR) NOT NULL
23    ) ;
24  ALTER TABLE Employee ADD CONSTRAINT Employee_PK PRIMARY KEY ( Employee_Id ) ;
25
26  CREATE TABLE Orders
27    (
28     OrderNo       VARCHAR2 (100 CHAR) NOT NULL ,
29     Quantity      NUMBER (100) NOT NULL ,
30     Shipping_Data VARCHAR2 (100 CHAR) NOT NULL ,
31     Recieved_data VARCHAR2 (100 CHAR) NOT NULL ,
32     Customer_Id   VARCHAR2 (100 CHAR) NOT NULL
33    ) ;
34  ALTER TABLE Orders ADD CONSTRAINT Orders_PK PRIMARY KEY ( OrderNo ) ;
35
36  CREATE TABLE Products
37    (
38     Id                  VARCHAR2 (100 CHAR) NOT NULL ,
39     name                VARCHAR2 (100 CHAR) NOT NULL ,
40     Price               NUMBER (10000) NOT NULL ,
41     stock               NUMBER (10000) NOT NULL ,
42     Employee_Employee_Id VARCHAR2 (100 CHAR) NOT NULL
43    ) ;
44  ALTER TABLE Products ADD CONSTRAINT Products_PK PRIMARY KEY ( Id ) ;
45  ALTER TABLE Customer ADD CONSTRAINT Customer_Employee_FK FOREIGN KEY ( Employee_Employee_Id ) REFERENCES Employee ( Employee_Id ) ;
46  ALTER TABLE Orders ADD CONSTRAINT Orders_Customer_FK FOREIGN KEY ( Customer_Id ) REFERENCES Customer ( Id ) ;
47  ALTER TABLE Products ADD CONSTRAINT Products_Employee_FK FOREIGN KEY ( Employee_Employee_Id ) REFERENCES Employee ( Employee_Id ) ;
48
49
```
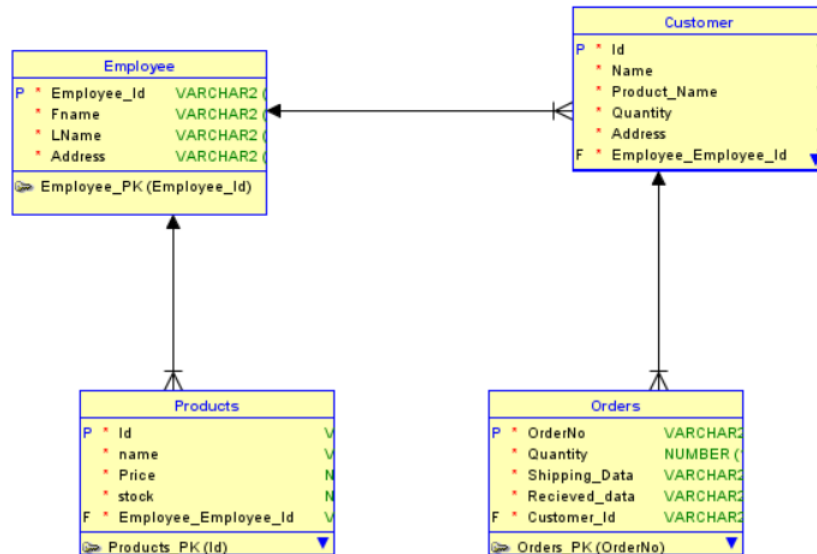
Employee

P	*	Employee_Id	VARCHAR2 (
	*	Fname	VARCHAR2 (
	*	LName	VARCHAR2 (
	*	Address	VARCHAR2 (

⟾ Employee_PK (Employee_Id)

Customer

P	*	Id	V
	*	Name	V
	*	Product_Name	V
	*	Quantity	N
	*	Address	V
F	*	Employee_Employee_Id	▼

Products

P	*	Id	V
	*	name	V
	*	Price	N
	*	stock	N
F	*	Employee_Employee_Id	V

⟾ Products_PK (Id) ▼

Orders

P	*	OrderNo	VARCHAR2
	*	Quantity	NUMBER (
	*	Shipping_Data	VARCHAR2
	*	Recieved_data	VARCHAR2
F	*	Customer_Id	VARCHAR2

⟾ Orders_PK (OrderNo) ▼

Table Properties - Employee   ✕

General
Columns
Primary Key
Unique Constraints
Indexes
Table Level Constraints
Existence Dependencies
Foreign Keys
Nested Columns
Valid Time Dimensions
Materialized Query
Volume Properties
Spatial Properties
Column Groups
Comments
Comments in RDBMS
Notes
Impact Analysis
Measurements
Change Requests
Responsible Parties
Documents
Scripts
Dynamic Properties
User Defined Properties
Redaction Policy

	Scripts

Before Drop/Rename	Before Create	After Create	End of script

```
1  INSERT INTO Employee (1, "Ahmed", "Ali", "Khan", "India");
2  INSERT INTO Employee (2, "Burhan", "Ali", "", "India");
3  INSERT INTO Employee (3, "Syed", "Ali", "Khan", "Germany");
```