National University
Of Computer and Emerging Sciences

LAB #08

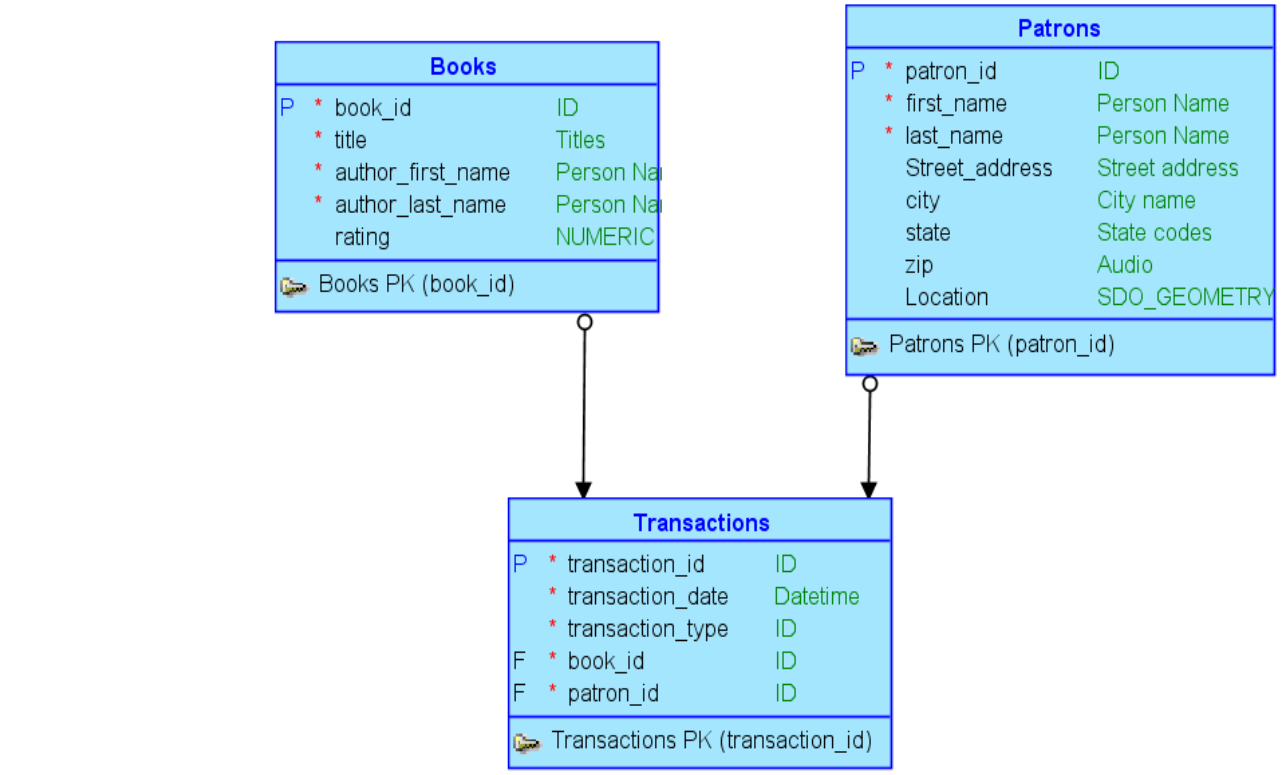
Name – Muhammad Taha

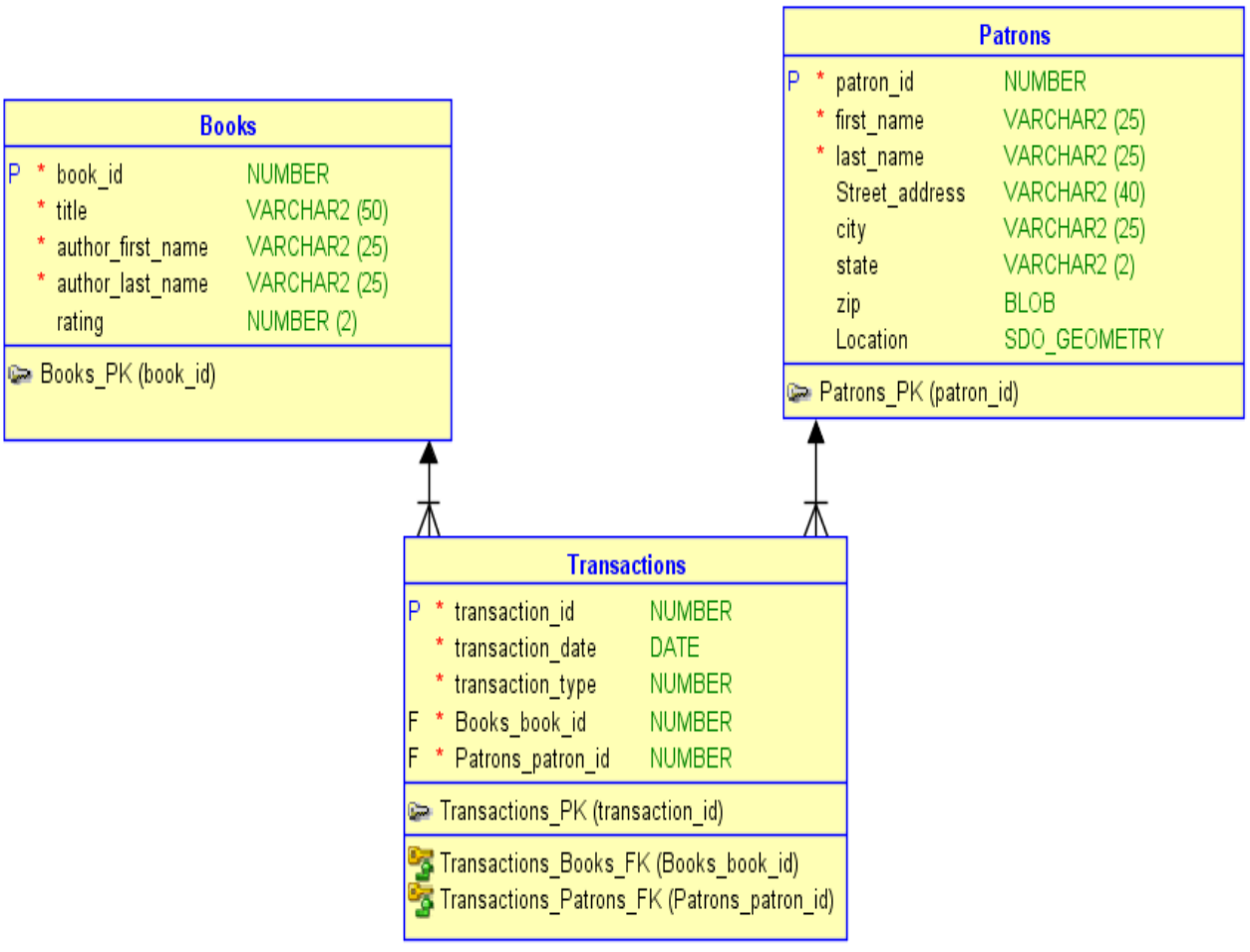
Roll NO – 23P-0559

SECTION – BCS(4A)

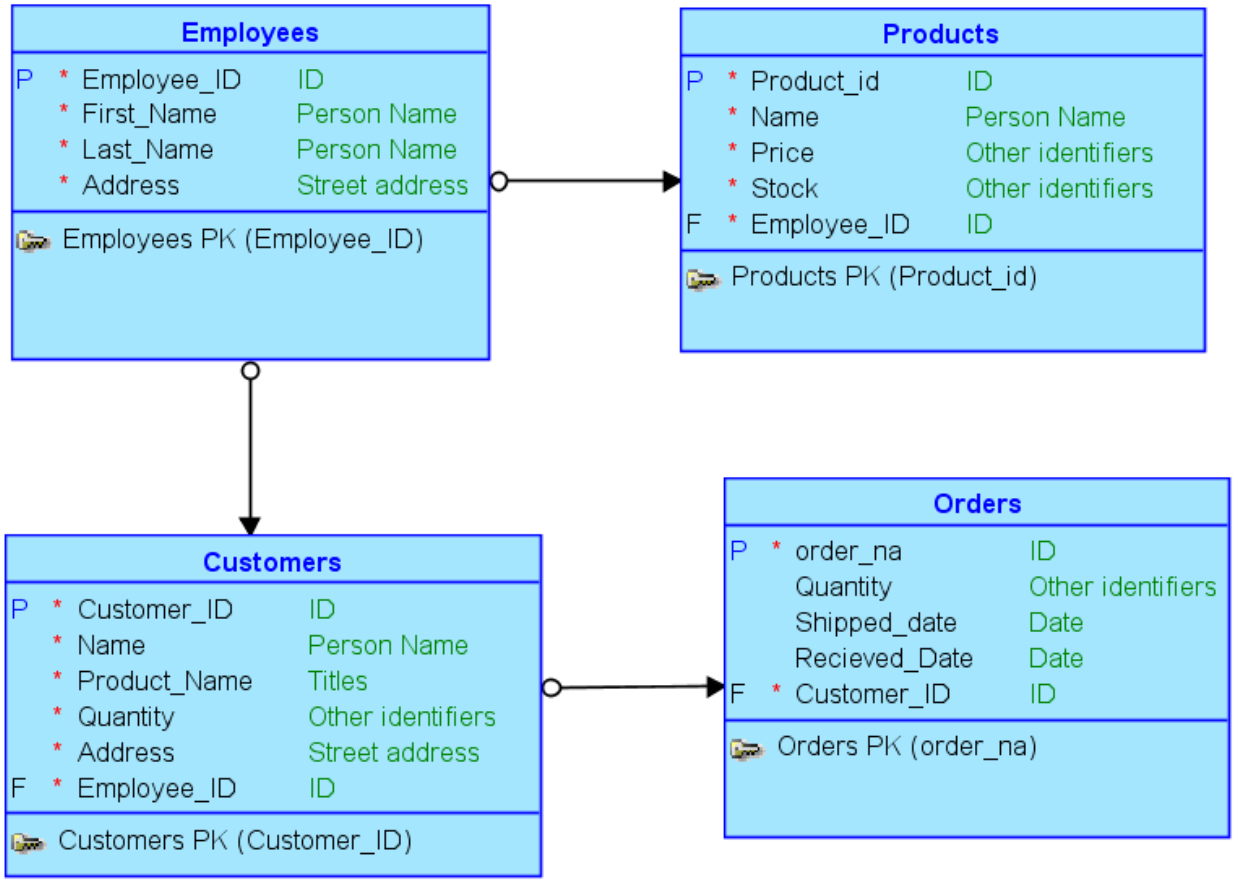
Subject – Database Systems LABS

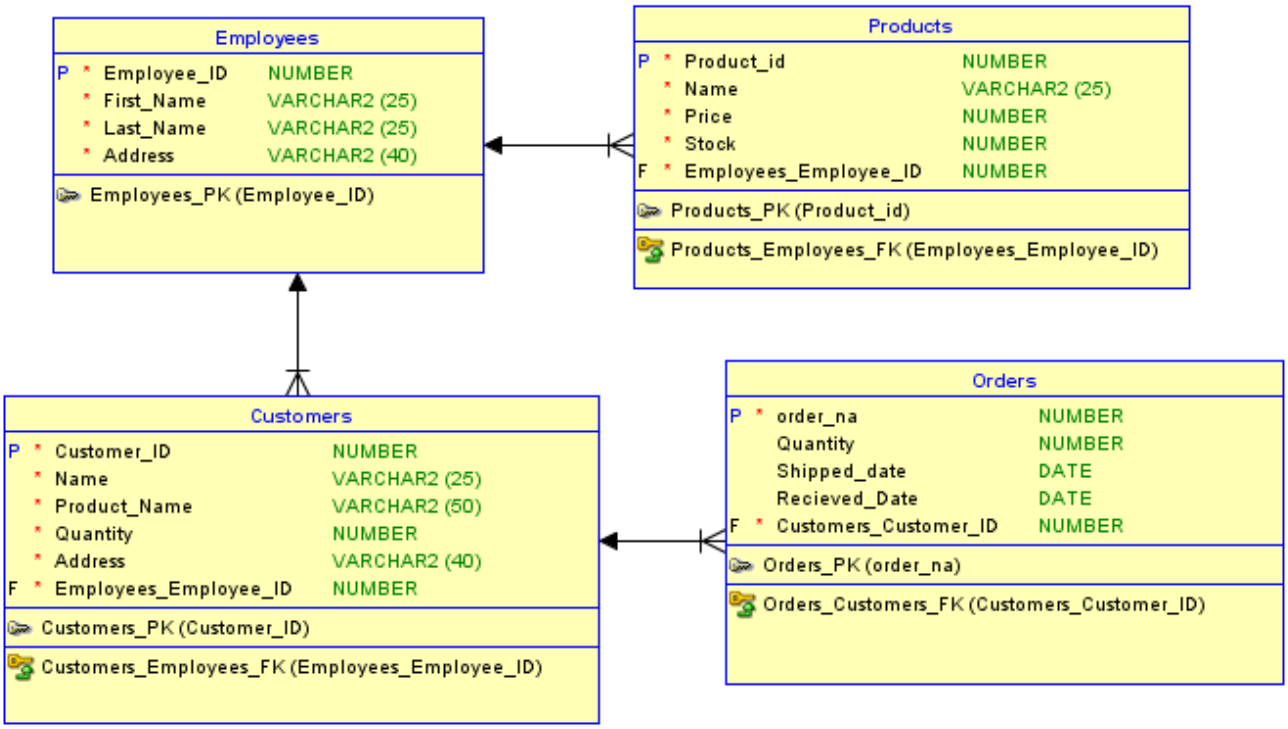
Task: 01


Books
P * book_id ID
* title Titles
* author_first_name Person Na
* author_last_name Person Na
rating NUMERIC
Books PK (book_id)
Patrons
P * patron_id ID
* first_name Person Name
* last_name Person Name
Street_address Street address
city City name
state State codes
zip Audio
Location SDO_GEOMETRY
Patrons PK (patron_id)
Transactions
P * transaction_id ID
* transaction_date Datetime
* transaction_type ID
F * book_id ID
F * patron_id ID
Transactions PK (transaction_id)

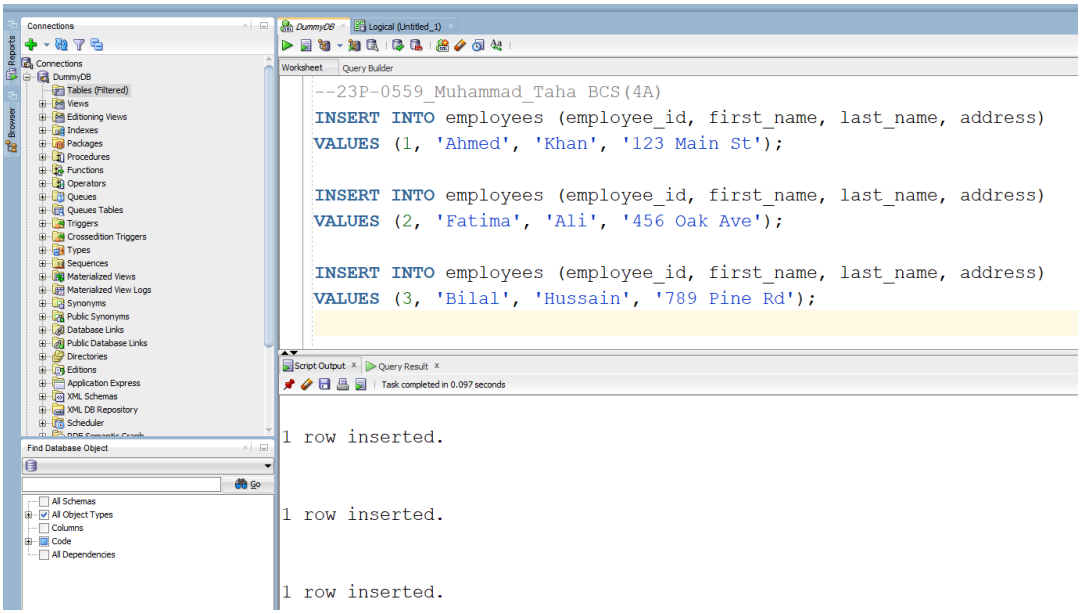

Books
P * book_id NUMBER
* title VARCHAR2 (50)
* author_first_name VARCHAR2 (25)
* author_last_name VARCHAR2 (25)
rating NUMBER (2)
Books_PK (book_id)
Patrons
P * patron_id NUMBER
* first_name VARCHAR2 (25)
* last_name VARCHAR2 (25)
Street_address VARCHAR2 (40)
city VARCHAR2 (25)
state VARCHAR2 (2)
zip BLOB
Location SDO_GEOMETRY
Patrons_PK (patron_id)
Transactions
P * transaction_id NUMBER
* transaction_date DATE
* transaction_type NUMBER
F * Books_book_id NUMBER
F * Patrons_patron_id NUMBER
Transactions_PK (transaction_id)
Transactions_Books_FK (Books_book_id)
Transactions_Patrons_FK (Patrons_patron_id)

Task: 02


Employees
P * Employee_ID ID
* First_Name Person Name
* Last_Name Person Name
* Address Street address
Employees PK (Employee_ID)
Products
P * Product_id ID
* Name Person Name
* Price Other identifiers
* Stock Other identifiers
F * Employee_ID ID
Products PK (Product_id)
Customers
P * Customer_ID ID
* Name Person Name
* Product_Name Titles
* Quantity Other identifiers
* Address Street address
F * Employee_ID ID
Customers PK (Customer_ID)
Orders
P * order_na ID
Quantity Other identifiers
Shipped_date Date
Recieved_Date Date
F * Customer_ID ID
Orders PK (order_na)

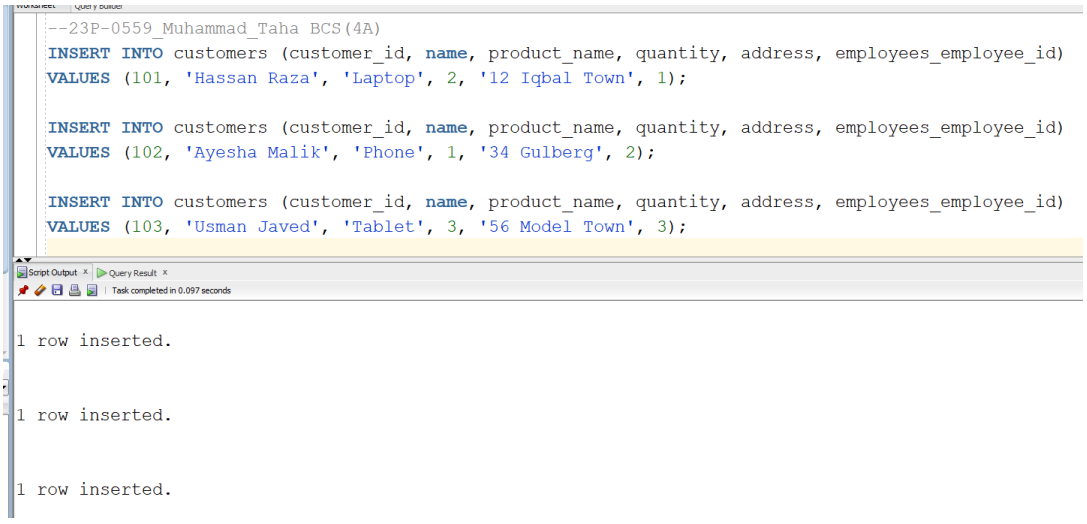

Employees
P * Employee_ID NUMBER
* First_Name VARCHAR2 (25)
* Last_Name VARCHAR2 (25)
* Address VARCHAR2 (40)
Employees_PK (Employee_ID)
Products
P * Product_id NUMBER
* Name VARCHAR2 (25)
* Price NUMBER
* Stock NUMBER
F * Employees_Employee_ID NUMBER
Products_PK (Product_id)
Products_Employees_FK (Employees_Employee_ID)
Customers
P * Customer_ID NUMBER
* Name VARCHAR2 (25)
* Product_Name VARCHAR2 (50)
* Quantity NUMBER
* Address VARCHAR2 (40)
F * Employees_Employee_ID NUMBER
Customers_PK (Customer_ID)
Customers_Employees_FK (Employees_Employee_ID)
Orders
P * order_na NUMBER
Quantity NUMBER
Shipped_date DATE
Recieved_Date DATE
F * Customers_Customer_ID NUMBER
Orders_PK (order_na)
Orders_Customers_FK (Customers_Customer_ID)

Insert Data in new DATABASE:



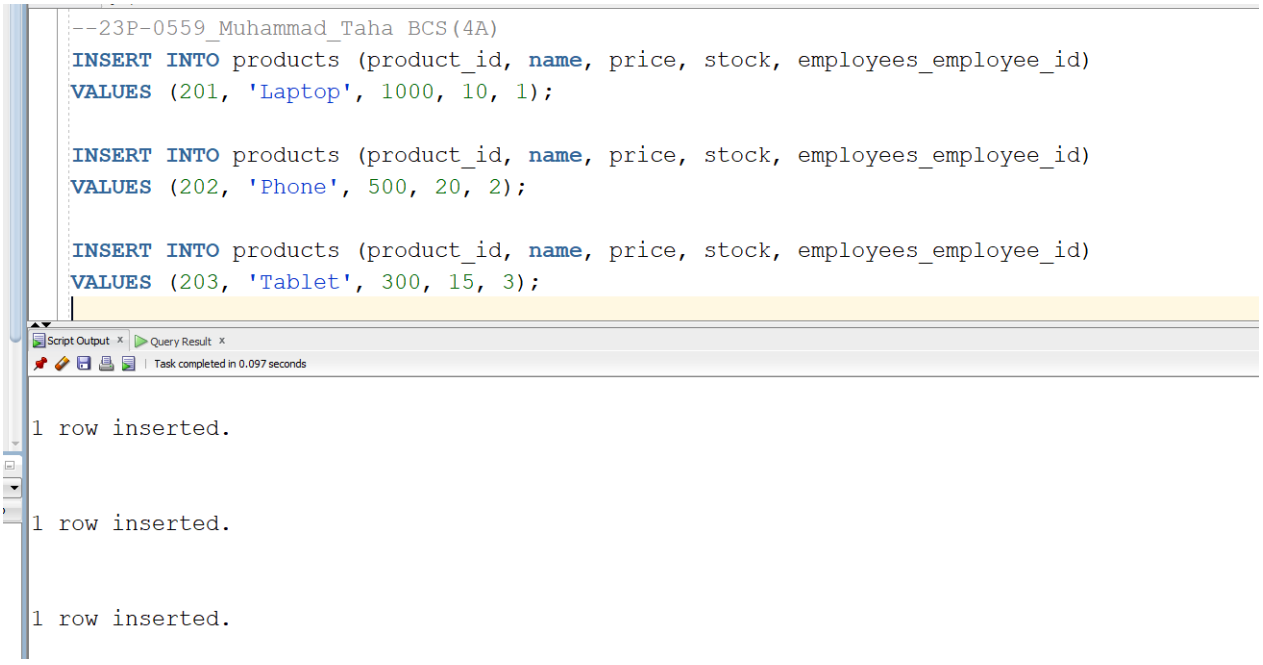
```
--23P-0559_Muhammad_Taha BCS(4A)
INSERT INTO employees (employee_id, first_name, last_name, address)
VALUES (1, 'Ahmed', 'Khan', '123 Main St');

INSERT INTO employees (employee_id, first_name, last_name, address)
VALUES (2, 'Fatima', 'Ali', '456 Oak Ave');

INSERT INTO employees (employee_id, first_name, last_name, address)
VALUES (3, 'Bilal', 'Hussain', '789 Pine Rd');
```

```
1 row inserted.


1 row inserted.


1 row inserted.
```



```
--23P-0559_Muhammad_Taha BCS(4A)
INSERT INTO customers (customer_id, name, product_name, quantity, address, employees_employee_id)
VALUES (101, 'Hassan Raza', 'Laptop', 2, '12 Iqbal Town', 1);

INSERT INTO customers (customer_id, name, product_name, quantity, address, employees_employee_id)
VALUES (102, 'Ayesha Malik', 'Phone', 1, '34 Gulberg', 2);

INSERT INTO customers (customer_id, name, product_name, quantity, address, employees_employee_id)
VALUES (103, 'Usman Javed', 'Tablet', 3, '56 Model Town', 3);
```

```
1 row inserted.


1 row inserted.


1 row inserted.
```



```
--23P-0559_Muhammad_Taha BCS(4A)
INSERT INTO products (product_id, name, price, stock, employees_employee_id)
VALUES (201, 'Laptop', 1000, 10, 1);

INSERT INTO products (product_id, name, price, stock, employees_employee_id)
VALUES (202, 'Phone', 500, 20, 2);

INSERT INTO products (product_id, name, price, stock, employees_employee_id)
VALUES (203, 'Tablet', 300, 15, 3);
```

```
1 row inserted.


1 row inserted.


1 row inserted.
```

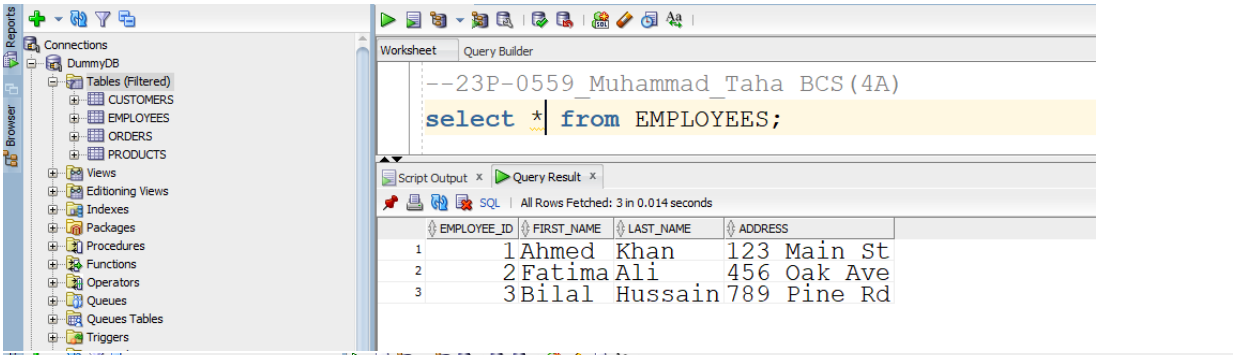
```
--23P-0559_Muhammad_Taha BCS(4A)
INSERT INTO orders (order_na, quantity, shipped_date, recieved_date, customers_customer_id)
VALUES (301, 2, TO_DATE('2025-03-25', 'YYYY-MM-DD'), TO_DATE('2025-03-27', 'YYYY-MM-DD'), 101);

INSERT INTO orders (order_na, quantity, shipped_date, recieved_date, customers_customer_id)
VALUES (302, 1, TO_DATE('2025-03-26', 'YYYY-MM-DD'), NULL, 102);

INSERT INTO orders (order_na, quantity, shipped_date, recieved_date, customers_customer_id)
VALUES (303, 3, TO_DATE('2025-03-27', 'YYYY-MM-DD'), TO_DATE('2025-03-29', 'YYYY-MM-DD'), 103);
```

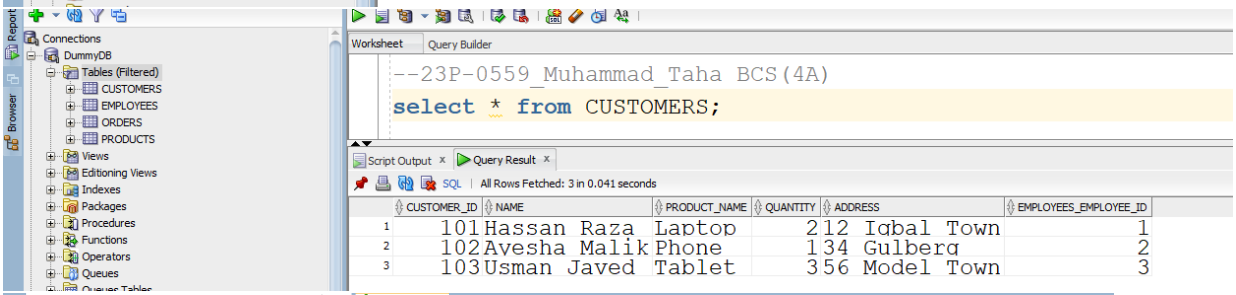
Script Output | Query Result

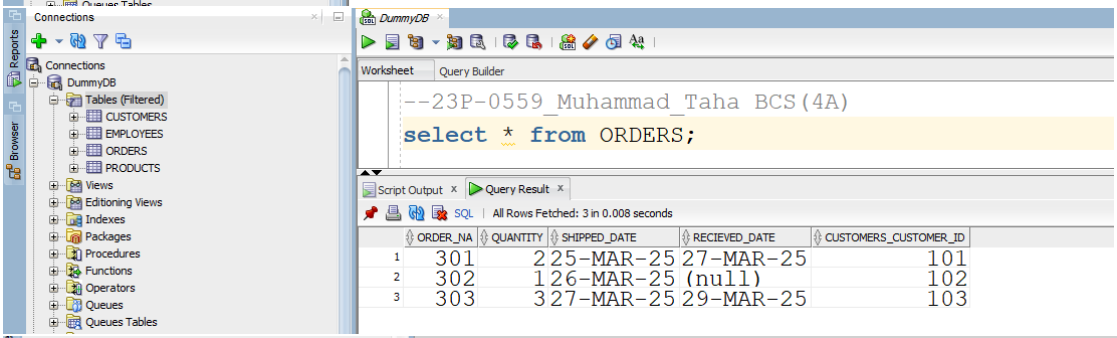
Task completed in 0.097 seconds

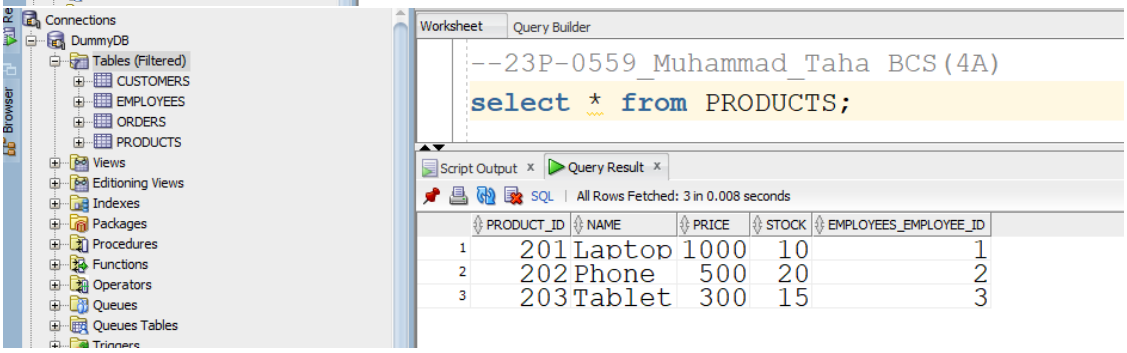
```
1 row inserted.


1 row inserted.


1 row inserted.
```

Retrive data:

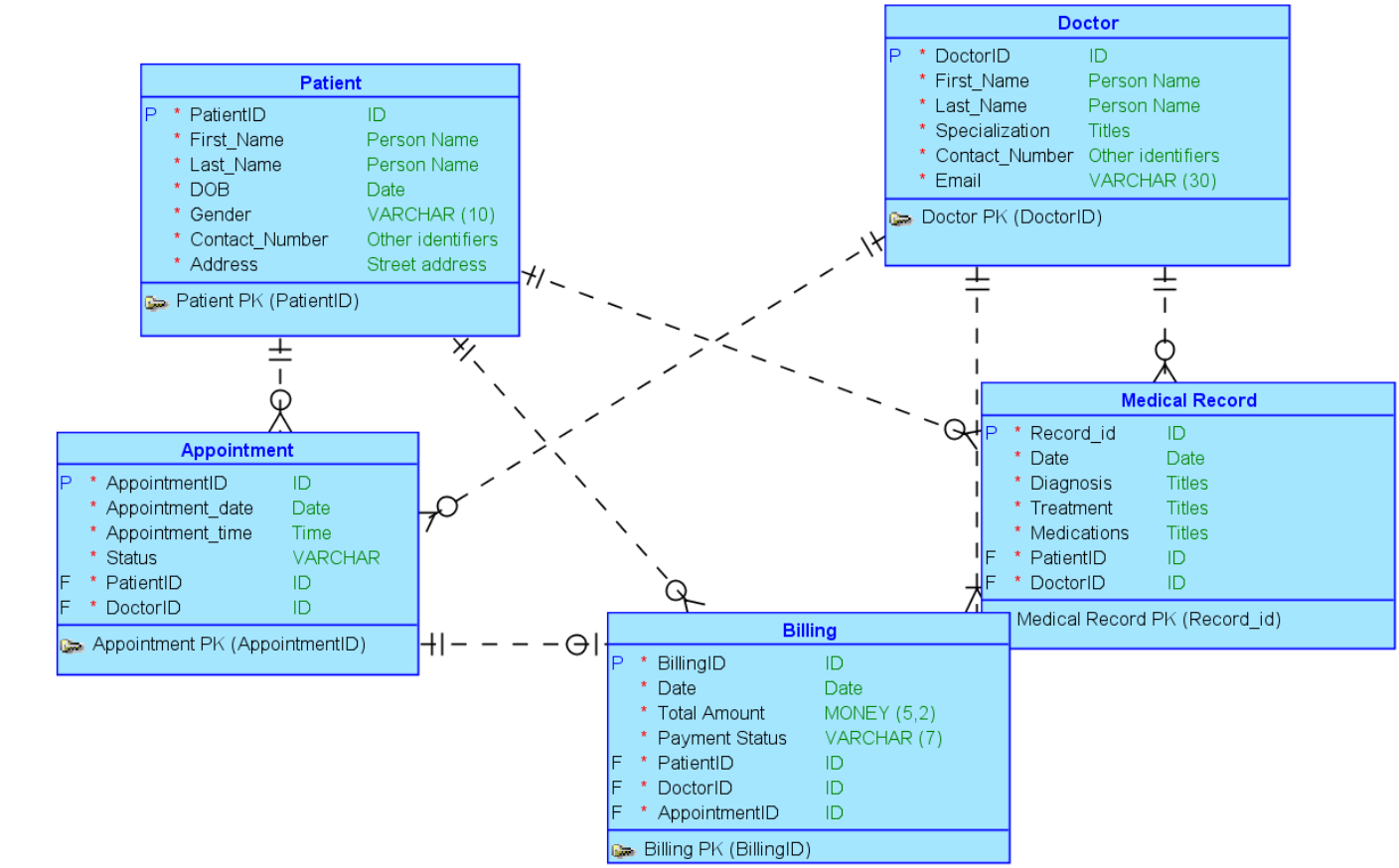


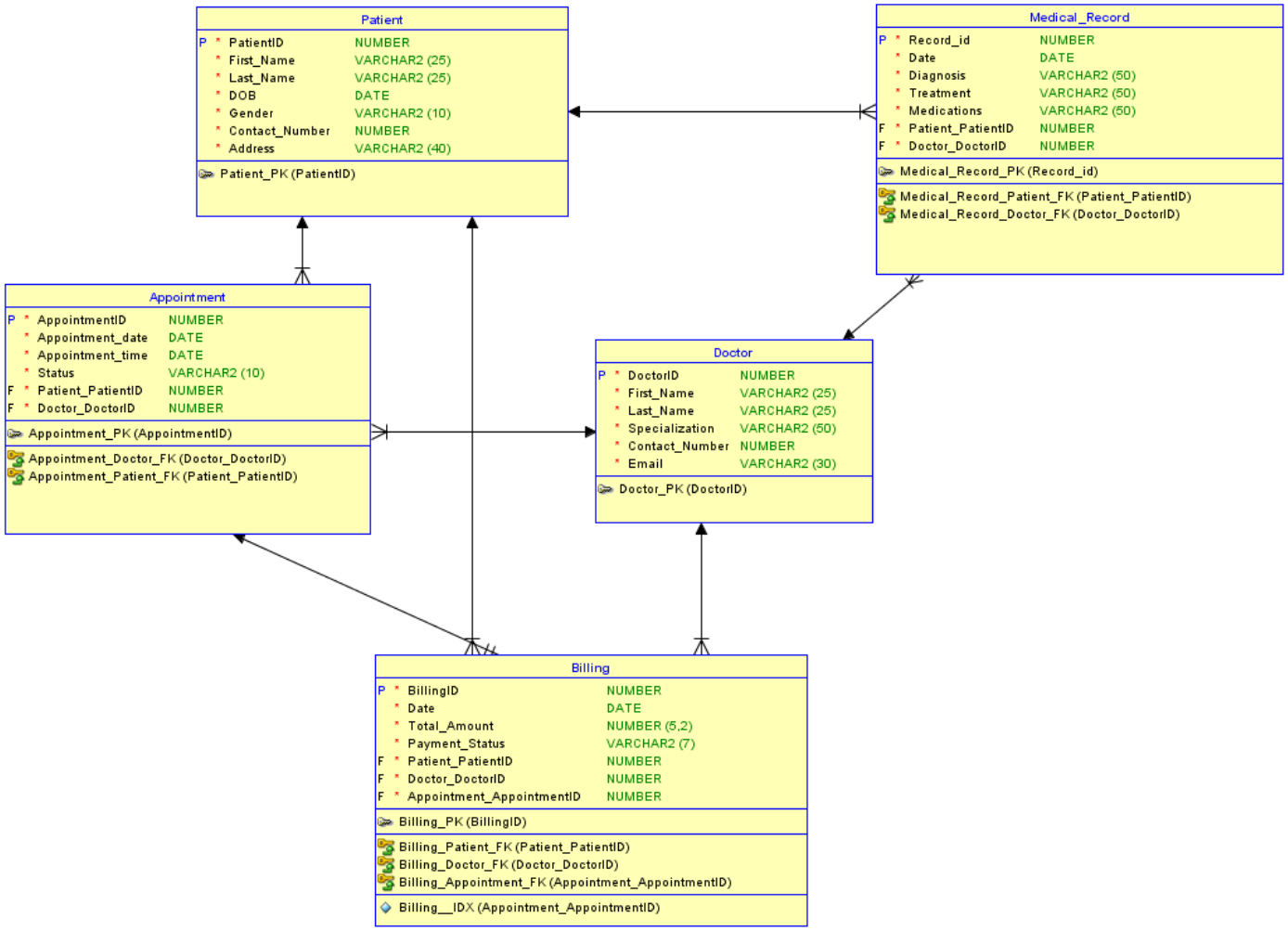




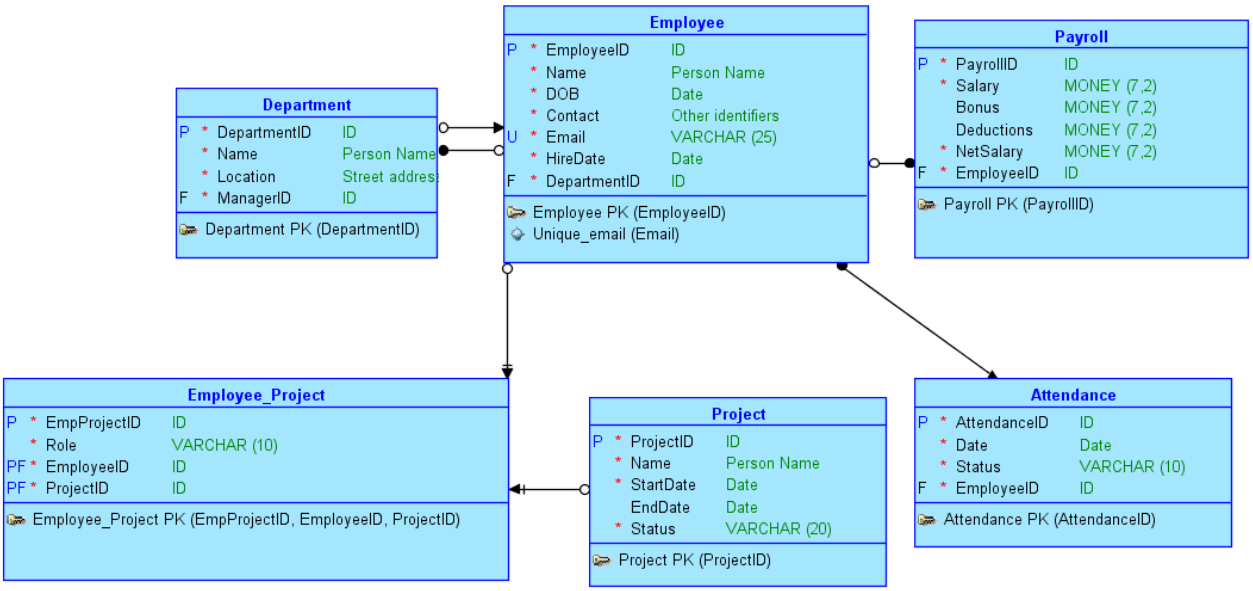


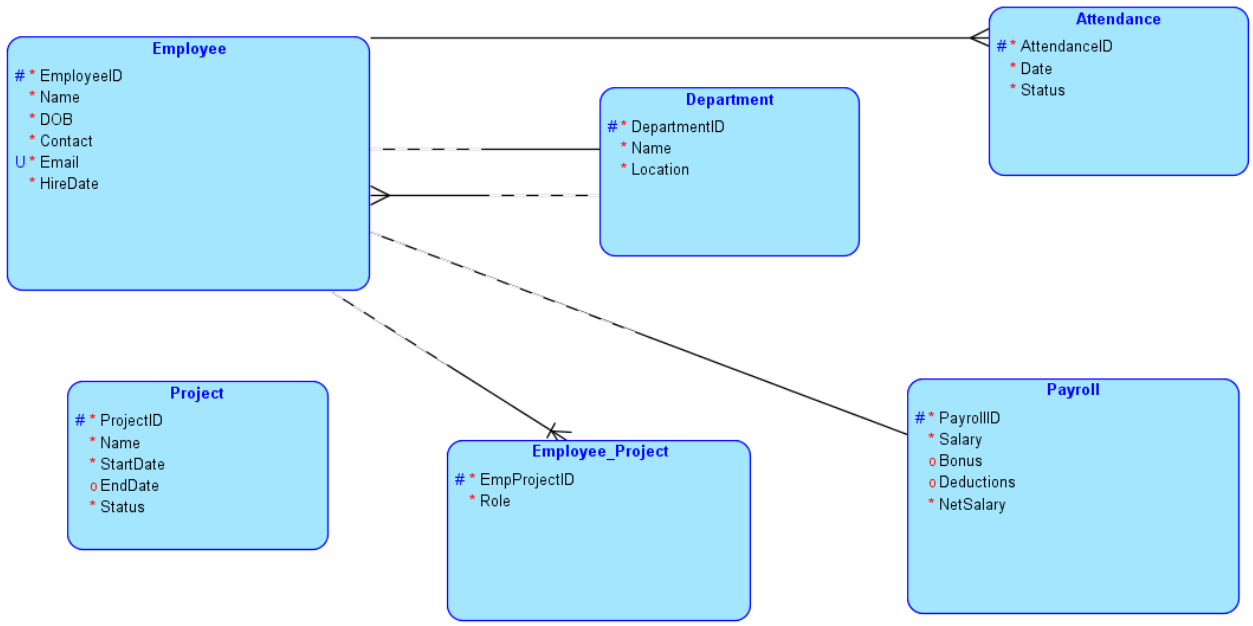
Task: 03

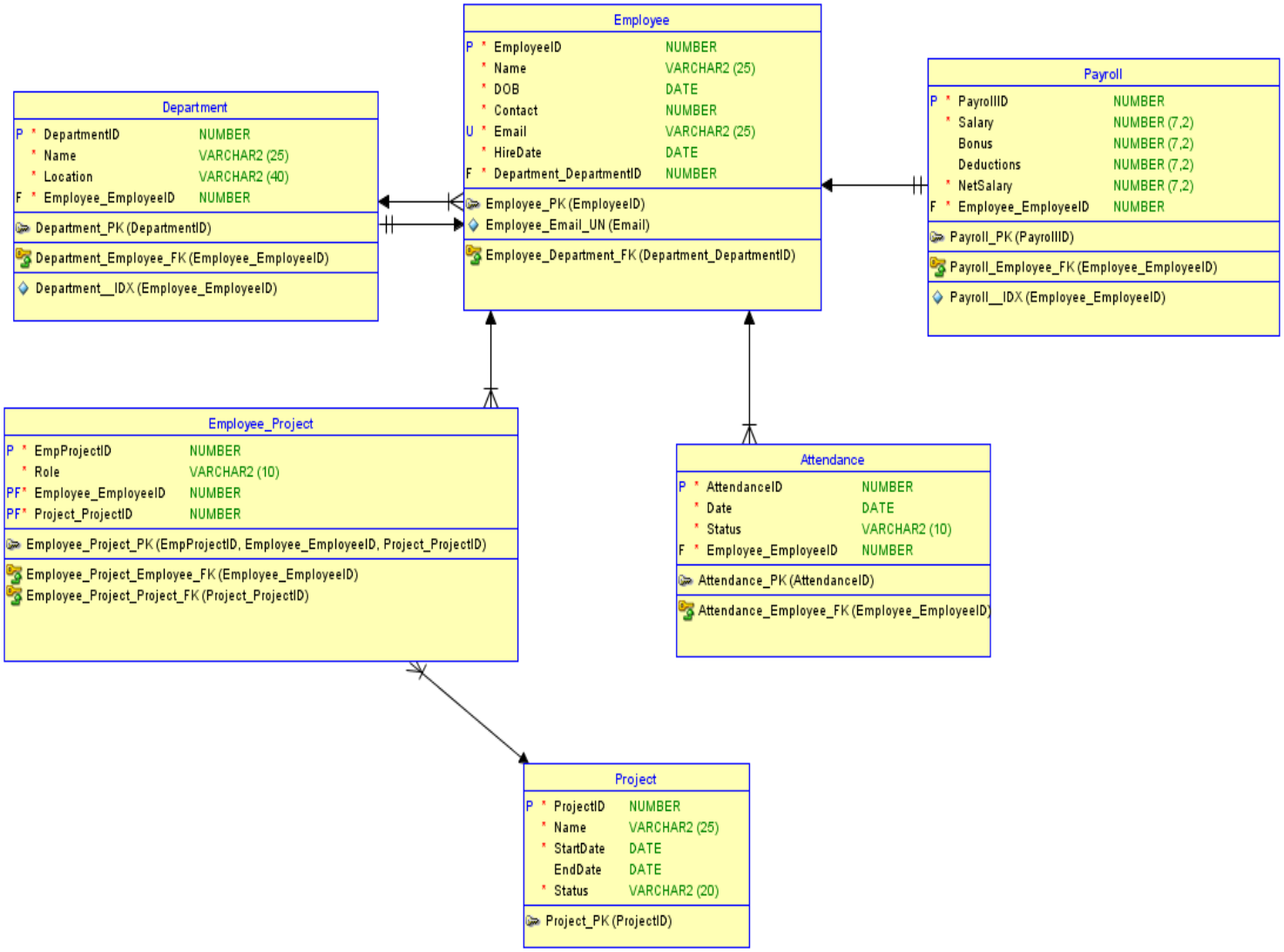

Doctor
P * DoctorID ID
* First_Name Person Name
* Last_Name Person Name
* Specialization Titles
* Contact_Number Other identifiers
* Email VARCHAR (30)
Doctor PK (DoctorID)
Patient
P * PatientID ID
* First_Name Person Name
* Last_Name Person Name
* DOB Date
* Gender VARCHAR (10)
* Contact_Number Other identifiers
* Address Street address
Patient PK (PatientID)
Medical Record
P * Record_id ID
* Date Date
* Diagnosis Titles
* Treatment Titles
* Medications Titles
F * PatientID ID
F * DoctorID ID
Medical Record PK (Record_id)
Appointment
P * AppointmentID ID
* Appointment_date Date
* Appointment_time Time
* Status VARCHAR
F * PatientID ID
F * DoctorID ID
Appointment PK (AppointmentID)
Billing
P * BillingID ID
* Date Date
* Total Amount MONEY (5,2)
* Payment Status VARCHAR (7)
F * PatientID ID
F * DoctorID ID
F * AppointmentID ID
Billing PK (BillingID)


Patient
P * PatientID NUMBER
* First_Name VARCHAR2 (25)
* Last_Name VARCHAR2 (25)
* DOB DATE
* Gender VARCHAR2 (10)
* Contact_Number NUMBER
* Address VARCHAR2 (40)
Patient_PK (PatientID)
Medical_Record
P * Record_id NUMBER
* Date DATE
* Diagnosis VARCHAR2 (50)
* Treatment VARCHAR2 (50)
* Medications VARCHAR2 (50)
F * Patient_PatientID NUMBER
F * Doctor_DoctorID NUMBER
Medical_Record_PK (Record_id)
Medical_Record_Patient_FK (Patient_PatientID)
Medical_Record_Doctor_FK (Doctor_DoctorID)
Appointment
P * AppointmentID NUMBER
* Appointment_date DATE
* Appointment_time DATE
* Status VARCHAR2 (10)
F * Patient_PatientID NUMBER
F * Doctor_DoctorID NUMBER
Appointment_PK (AppointmentID)
Appointment_Doctor_FK (Doctor_DoctorID)
Appointment_Patient_FK (Patient_PatientID)
Doctor
P * DoctorID NUMBER
* First_Name VARCHAR2 (25)
* Last_Name VARCHAR2 (25)
* Specialization VARCHAR2 (50)
* Contact_Number NUMBER
* Email VARCHAR2 (30)
Doctor_PK (DoctorID)
Billing
P * BillingID NUMBER
* Date DATE
* Total_Amount NUMBER (5,2)
* Payment_Status VARCHAR2 (7)
F * Patient_PatientID NUMBER
F * Doctor_DoctorID NUMBER
F * Appointment_AppointmentID NUMBER
Billing_PK (BillingID)
Billing_Patient_FK (Patient_PatientID)
Billing_Doctor_FK (Doctor_DoctorID)
Billing_Appointment_FK (Appointment_AppointmentID)
Billing__IDX (Appointment_AppointmentID)

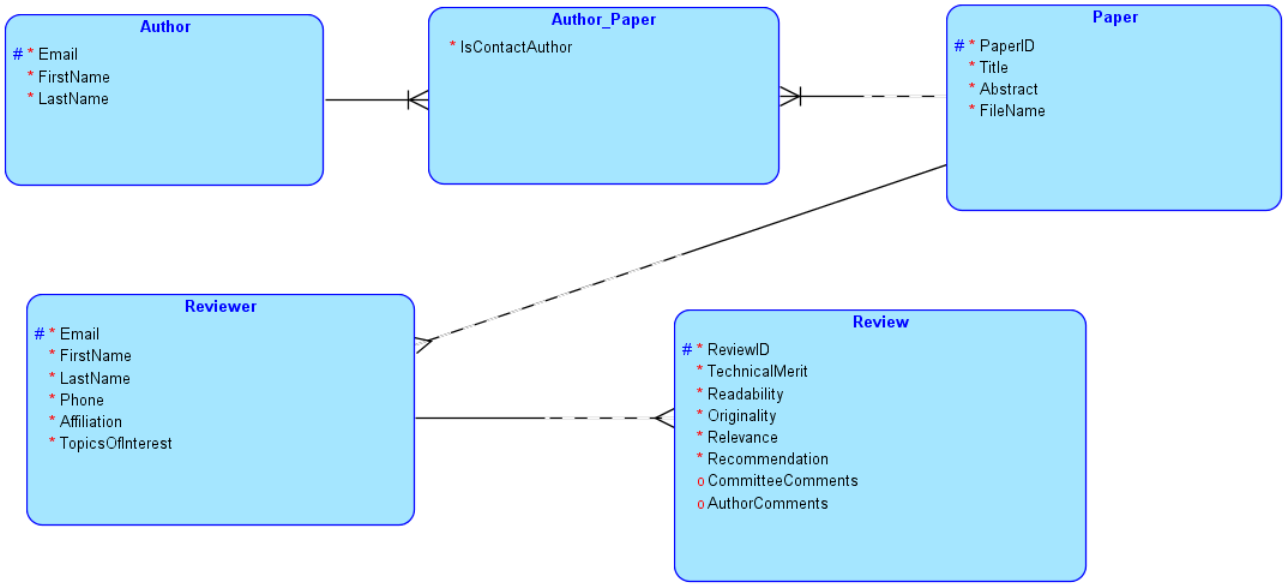
Task: 04

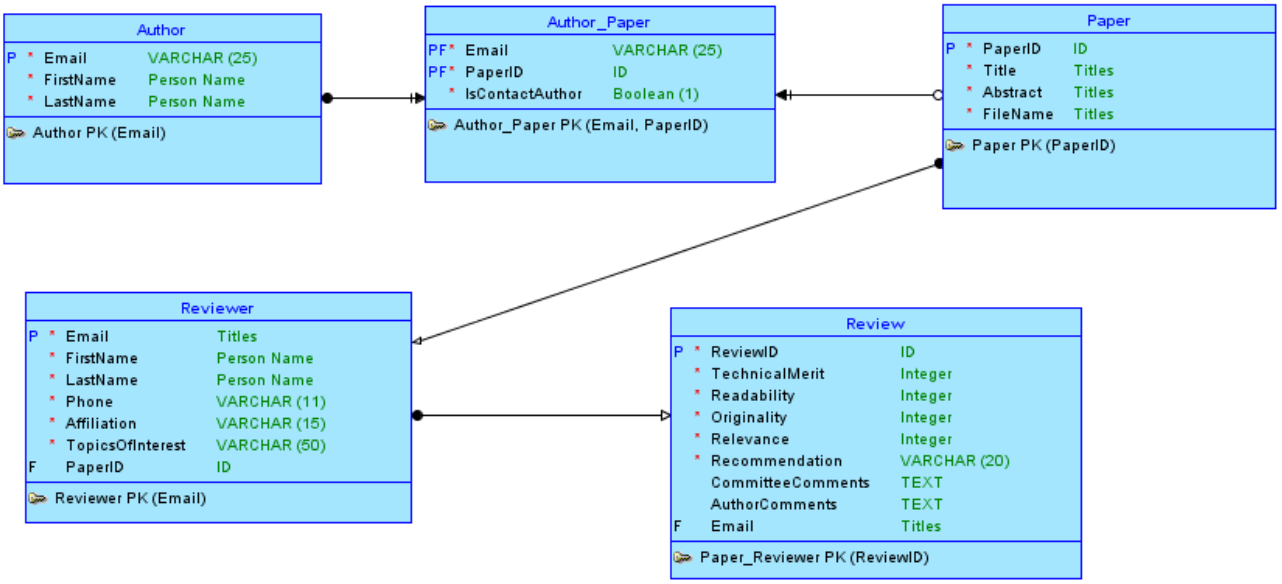

Employee
P * EmployeeID ID
* Name Person Name
* DOB Date
* Contact Other identifiers
U * Email VARCHAR (25)
* HireDate Date
F * DepartmentID ID
Employee PK (EmployeeID)
Unique_email (Email)
Department
P * DepartmentID ID
* Name Person Name
* Location Street addres
F * ManagerID ID
Department PK (DepartmentID)
Payroll
P * PayrollID ID
* Salary MONEY (7,2)
Bonus MONEY (7,2)
Deductions MONEY (7,2)
* NetSalary MONEY (7,2)
F * EmployeeID ID
Payroll PK (PayrollID)
Employee_Project
P * EmpProjectID ID
* Role VARCHAR (10)
PF * EmployeeID ID
PF * ProjectID ID
Employee_Project PK (EmpProjectID, EmployeeID, ProjectID)
Project
P * ProjectID ID
* Name Person Name
* StartDate Date
EndDate Date
* Status VARCHAR (20)
Project PK (ProjectID)
Attendance
P * AttendanceID ID
* Date Date
* Status VARCHAR (10)
F * EmployeeID ID
Attendance PK (AttendanceID)

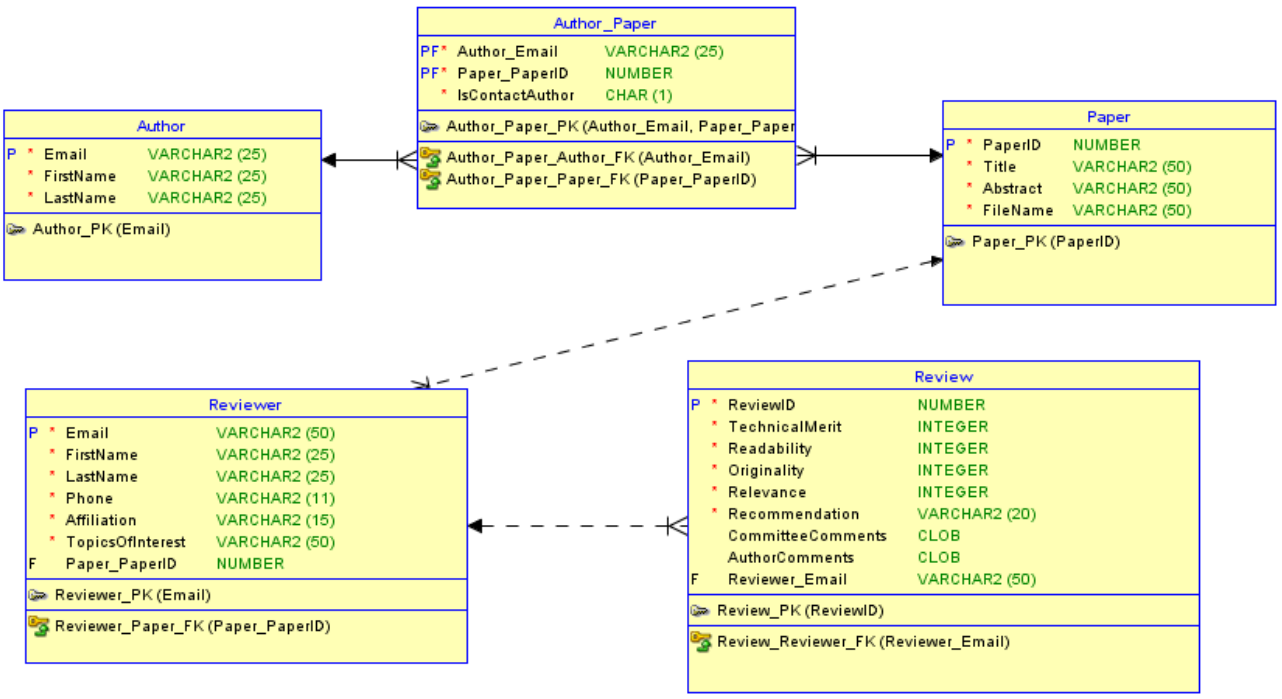

Employee
* EmployeeID
* Name
* DOB
* Contact
U * Email
* HireDate
Attendance
* AttendanceID
* Date
* Status
Department
* DepartmentID
* Name
* Location
Project
* ProjectID
* Name
* StartDate
o EndDate
* Status
Employee_Project
* EmpProjectID
* Role
Payroll
* PayrollID
* Salary
o Bonus
o Deductions
* NetSalary


Employee
P * EmployeeID NUMBER
* Name VARCHAR2 (25)
* DOB DATE
* Contact NUMBER
U * Email VARCHAR2 (25)
* HireDate DATE
F * Department_DepartmentID NUMBER
Employee_PK (EmployeeID)
Employee_Email_UN (Email)
Employee_Department_FK (Department_DepartmentID)
Department
P * DepartmentID NUMBER
* Name VARCHAR2 (25)
* Location VARCHAR2 (40)
F * Employee_EmployeeID NUMBER
Department_PK (DepartmentID)
Department_Employee_FK (Employee_EmployeeID)
Department__IDX (Employee_EmployeeID)
Payroll
P * PayrollID NUMBER
* Salary NUMBER (7,2)
Bonus NUMBER (7,2)
Deductions NUMBER (7,2)
* NetSalary NUMBER (7,2)
F * Employee_EmployeeID NUMBER
Payroll_PK (PayrollID)
Payroll_Employee_FK (Employee_EmployeeID)
Payroll__IDX (Employee_EmployeeID)
Employee_Project
P * EmpProjectID NUMBER
* Role VARCHAR2 (10)
PF* Employee_EmployeeID NUMBER
PF* Project_ProjectID NUMBER
Employee_Project_PK (EmpProjectID, Employee_EmployeeID, Project_ProjectID)
Employee_Project_Employee_FK (Employee_EmployeeID)
Employee_Project_Project_FK (Project_ProjectID)
Attendance
P * AttendanceID NUMBER
* Date DATE
* Status VARCHAR2 (10)
F * Employee_EmployeeID NUMBER
Attendance_PK (AttendanceID)
Attendance_Employee_FK (Employee_EmployeeID)
Project
P * ProjectID NUMBER
* Name VARCHAR2 (25)
* StartDate DATE
EndDate DATE
* Status VARCHAR2 (20)
Project_PK (ProjectID)

Task: 05


Author
* Email
* FirstName
* LastName
Author_Paper
* IsContactAuthor
Paper
* PaperID
* Title
* Abstract
* FileName
Reviewer
* Email
* FirstName
* LastName
* Phone
* Affiliation
* TopicsOfInterest
Review
* ReviewID
* TechnicalMerit
* Readability
* Originality
* Relevance
* Recommendation
o CommitteeComments
o AuthorComments


Author
P * Email VARCHAR (25)
* FirstName Person Name
* LastName Person Name
Author PK (Email)
Author_Paper
PF* Email VARCHAR (25)
PF* PaperID ID
* IsContactAuthor Boolean (1)
Author_Paper PK (Email, PaperID)
Paper
P * PaperID ID
* Title Titles
* Abstract Titles
* FileName Titles
Paper PK (PaperID)
Reviewer
P * Email Titles
* FirstName Person Name
* LastName Person Name
* Phone VARCHAR (11)
* Affiliation VARCHAR (15)
* TopicsOfInterest VARCHAR (50)
F PaperID ID
Reviewer PK (Email)
Review
P * ReviewID ID
* TechnicalMerit Integer
* Readability Integer
* Originality Integer
* Relevance Integer
* Recommendation VARCHAR (20)
CommitteeComments TEXT
AuthorComments TEXT
F Email Titles
Paper_Reviewer PK (ReviewID)


Author_Paper
PF* Author_Email VARCHAR2 (25)
PF* Paper_PaperID NUMBER
* IsContactAuthor CHAR (1)
Author_Paper_PK (Author_Email, Paper_Paper
Author_Paper_Author_FK (Author_Email)
Author_Paper_Paper_FK (Paper_PaperID)
Author
P * Email VARCHAR2 (25)
* FirstName VARCHAR2 (25)
* LastName VARCHAR2 (25)
Author_PK (Email)
Paper
P * PaperID NUMBER
* Title VARCHAR2 (50)
* Abstract VARCHAR2 (50)
* FileName VARCHAR2 (50)
Paper_PK (PaperID)
Reviewer
P * Email VARCHAR2 (50)
* FirstName VARCHAR2 (25)
* LastName VARCHAR2 (25)
* Phone VARCHAR2 (11)
* Affiliation VARCHAR2 (15)
* TopicsOfInterest VARCHAR2 (50)
F Paper_PaperID NUMBER
Reviewer_PK (Email)
Reviewer_Paper_FK (Paper_PaperID)
Review
P * ReviewID NUMBER
* TechnicalMerit INTEGER
* Readability INTEGER
* Originality INTEGER
* Relevance INTEGER
* Recommendation VARCHAR2 (20)
CommitteeComments CLOB
AuthorComments CLOB
F Reviewer_Email VARCHAR2 (50)
Review_PK (ReviewID)
Review_Reviewer_FK (Reviewer_Email)