```
CREATE DATABASE RelationalDatabase;
USE RelationalDatabase;

CREATE TABLE Jobs (
Job_ID INT PRIMARY KEY,
Job_Title VARCHAR(40),
Min_Salary INT,
Max_Salary INT
);


CREATE TABLE Regions (
Region_ID INT PRIMARY KEY,
Region_Name VARCHAR(30)
);

CREATE TABLE Countries (
Country_ID INT PRIMARY KEY,
Country_Name VARCHAR(30),
Region_ID INT,
FOREIGN KEY (Region_ID) REFERENCES Regions(Region_ID)
);

CREATE TABLE Locations (
Location_ID INT PRIMARY KEY,
Street_Address VARCHAR(100),
Postal_Code INT,
City VARCHAR(30),
State VARCHAR(30),
Country_ID INT,
FOREIGN KEY (Country_ID) REFERENCES Countries(Country_ID)
);

CREATE TABLE Department (
Department_ID INT PRIMARY KEY,
Department_Name VARCHAR(30),
Location_ID INT,
FOREIGN KEY (Location_ID) REFERENCES Locations(Location_ID)
);

CREATE TABLE Employees (
Employee_ID INT NOT NULL UNIQUE,
First_Name VARCHAR(30),
Last_Name VARCHAR(30),
Email VARCHAR(30),
Phone_Number VARCHAR(30),
Job_ID INT,
FOREIGN KEY (Job_ID) REFERENCES Jobs(Job_ID),
Salary INT,
Department_ID INT,
FOREIGN KEY (Department_ID) REFERENCES Department(Department_ID));
```

```
INSERT INTO Regions (Region_ID, Region_Name) VALUES
(1, 'North America'),
(2, 'Europe'),
(3, 'Asia'),
(4, 'South America'),
(5, 'Africa'),
(6, 'Oceania'),
(7, 'Middle East'),
(8, 'Central America'),
(9, 'Caribbean'),
(10, 'Antarctica'),
(11, 'South America'),
(12, 'North America'),
(13, 'Eastern Europe'),
(14, 'Western Europe'),
(15, 'Southeast Asia'),
(16, 'Middle East'),
(17, 'Africa'),
 (18, 'Oceania'),
 (19, 'Central America'),
 (20, 'Caribbean');

INSERT INTO Jobs (Job_ID, Job_Title, Min_Salary, Max_Salary) VALUES
(1, 'Software Engineer', 60000, 120000),
(2, 'Marketing Specialist', 50000, 90000),
(3, 'Data Analyst', 55000, 100000),
(4, 'Human Resources Manager', 70000, 120000),
(5, 'Sales Representative', 45000, 80000),
(6, 'Graphic Designer', 40000, 80000),
(7, 'Financial Analyst', 55000, 110000),
(8, 'Operations Manager', 60000, 120000),
(9, 'Customer Service Representative', 30000, 60000),
(10, 'IT Support Specialist', 45000, 90000),
(11, 'Marketing Manager', 70000, 140000),
(12, 'Human Resources Generalist', 45000, 90000),
(13, 'Software Developer', 70000, 140000),
(14, 'Sales Representative', 40000, 80000),
(15, 'Project Manager', 75000, 150000),
(16, 'Financial Analyst', 60000, 120000),
(17, 'Customer Service Representative', 30000, 60000),
(18, 'Data Analyst', 55000, 110000),
(19, 'Account Manager', 70000, 140000),
(20, 'Operations Manager', 80000, 160000);
```

```
INSERT INTO Countries (Country_ID, Country_Name, Region_ID) VALUES
(1, 'United States', 1),
(2, 'Germany', 2),
(3, 'China', 3),
(4, 'Brazil', 4),
(5, 'South Africa', 5),
(6, 'Australia', 6),
(7, 'Saudi Arabia', 7),
(8, 'Mexico', 8),
(9, 'Jamaica', 9),
(10, 'None', 10),
(11, 'Argentina', 11),
(12, 'United States', 12),
(13, 'Russia', 13),
(14, 'Germany', 14),
(15, 'Thailand', 15),
(16, 'United Arab Emirates', 16),
(17, 'South Africa', 17),
(18, 'Australia', 18),
(19, 'Costa Rica', 19),
(20, 'Jamaica', 20);

INSERT INTO Locations (Location_ID, Street_Address, Postal_Code, City, State, Country_ID) VALUES
(1, '123 Main St', 12345, 'New York', 'NY', 1),
(2, '456 Elm St', 67890, 'Berlin', NULL, 2),
(3, '789 Oak St', 54321, 'Shanghai', NULL, 3),
(4, '321 Maple St', 98765, 'Sao Paulo', 'SP', 4),
(5, '654 Pine St', 13579, 'Johannesburg', NULL, 5),
(6, '1 Queen St', 2000, 'Sydney', 'NSW', 6),
(7, '123 King Abdulaziz Rd', NULL, 'Riyadh', NULL, 7),
(8, '456 Paseo de la Reforma', 06500, 'Mexico City', NULL, 8),
(9, '789 Half Moon St', NULL, 'Kingston', NULL, 9),
(10, '123 Antarctica Blvd', 99999, 'McMurdo Station', NULL, 10),
(11, '123 Buenos Aires Ave', 1000, 'Buenos Aires', NULL, 11),
(12, '123 Main St', 10001, 'New York', 'NY', 12),
(13, '456 Red Square', NULL, 'Moscow', NULL, 13),
(14, '789 Brandenburg Gate', 10117, 'Berlin', NULL, 14),
(15, '123 Sukhumvit Rd', 10110, 'Bangkok', NULL, 15),
(16, '123 Sheikh Zayed Rd', NULL, 'Dubai', NULL, 16),
(17, '1234 Cape Town Rd', 8001, 'Cape Town', NULL, 17),
(18, '567 Sydney Harbour', 2000, 'Sydney', 'NSW', 18),
(19, '123 San Jose Blvd', NULL, 'San Jose', NULL, 19),
(20, '123 Montego Bay', NULL, 'Montego Bay', NULL, 20);
```

```
INSERT INTO Department (Department_ID, Department_Name, Location_ID) VALUES
(1, 'Engineering', 1),
(2, 'Marketing', 2),
(3, 'Data Analytics', 3),
(4, 'Human Resources', 4),
(5, 'Sales', 5),
(6, 'Design', 6),
(7, 'Finance', 7),
(8, 'Operations', 8),
(9, 'Customer Service', 9),
(10, 'IT', 10),
(11, 'Marketing', 11),
(12, 'Human Resources', 12),
(13, 'Engineering', 13),
(14, 'Sales', 14),
(15, 'Project Management', 15),
(16, 'Finance', 16),
(17, 'Customer Service', 17),
(18, 'Analytics', 18),
(19, 'Sales', 19),
(20, 'Operations', 20);

INSERT INTO Employees (Employee_ID, First_Name, Last_Name, Email, Phone_Number, Job_ID,
Salary, Department_ID) VALUES
(1, 'John', 'Doe', 'johndoe@example.com', '123-456-7890', 1, 90000, 1),
(2, 'Jane', 'Smith', 'janesmith@example.com', '234-567-8901', 2, 70000, 2),
(3, 'Bob', 'Lee', 'boblee@example.com', '345-678-9012', 3, 80000, 3),
(4, 'Emily', 'Wang', 'emilywang@example.com', '456-789-0123', 4, 100000, 4),
(5, 'Mark', 'Garcia', 'markgarcia@example.com', '567-890-1234', 5, 60000, 5),
(6, 'Samantha', 'Chen', 'samanthachen@example.com', '678-901-2345', 6, 60000, 6),
(7, 'Ahmed', 'Ali', 'ahmedali@example.com', '789-012-3456', 7, 85000, 7),
(8, 'Maria', 'Gomez', 'mariagomez@example.com', '890-123-4567', 8, 90000, 8),
(9, 'David', 'Lee', 'davidlee@example.com', '901-234-5678', 9, 40000, 9),
(10, 'Alex', 'Nguyen', 'alexnguyen@example.com', '012-345-6789', 10, 55000, 10),
(11, 'Diego', 'Garcia', 'diegogarcia@example.com', '234-567-8901', 11, 120000, 11),
(12, 'Sarah', 'Smith', 'sarahsmith@example.com', '345-678-9012', 12, 55000, 12),
(13, 'Ivan', 'Petrov', 'ivanpetrov@example.com', '456-789-0123', 13, 110000, 13),
(14, 'Emily', 'Johnson', 'emilyjohnson@example.com', '567-890-1234', 14, 50000, 14),
(15, 'Jessica', 'Wong', 'jessicawong@example.com', '678-901-2345', 15, 90000, 15),
(16, 'Ahmed', 'Khalid', 'ahmedkhalid@example.com', '901-234-5678', 16, 80000, 16),
(17, 'Sipho', 'Mbele', 'siphombele@example.com', '234-567-8901', 17, 35000, 17),
(18, 'Caitlin', 'Chen', 'caitlinchen@example.com', '345-678-9012', 18, 70000, 18),
(19, 'Samantha', 'Lee', 'samanthalee@example.com', '456-789-0123', 19, 120000, 19),
(20, 'Jerome', 'Campbell', 'jeromecampbell@example.com', '567-890-1234', 20, 140000, 20);
```

JOINS EXAMPLES

1. **Inner join between Employees and Jobs tables to retrieve the job title and salary of each employee:**

   ```
   SELECT Employees.First_Name, Employees.Last_Name, Jobs.Job_Title, Employees.Salary
   FROM Employees
   INNER JOIN Jobs ON Employees.Job_ID = Jobs.Job_ID;
   ```

2. **Inner join between Employees and Department tables to retrieve the department name and location of each employee:**

   ```
   SELECT Employees.First_Name, Employees.Last_Name, Department.Department_Name,
   Department.Location_ID
   FROM Employees
   INNER JOIN Department ON Employees.Department_ID = Department.Department_ID;
   ```

3. **Inner join between Locations and Countries tables to retrieve the city, country name, and region name of each location:**

   ```
   SELECT Locations.City, Countries.Country_Name, Regions.Region_Name
   FROM Locations
   INNER JOIN Countries ON Locations.Country_ID = Countries.Country_ID
   INNER JOIN Regions ON Countries.Region_ID = Regions.Region_ID;
   ```

4. **Inner join between Countries and Regions tables to retrieve the country name and region name of each country:**

   ```
   SELECT Countries.Country_Name, Regions.Region_Name
   FROM Countries
   INNER JOIN Regions ON Countries.Region_ID = Regions.Region_ID;
   ```

5. **Inner join between Jobs and Employees tables to retrieve the job title, minimum salary, and maximum salary of each job:**

   ```
   SELECT Jobs.Job_Title, Jobs.Min_Salary, Jobs.Max_Salary
   FROM Jobs
   INNER JOIN Employees ON Jobs.Job_ID = Employees.Job_ID;
   ```

6. **Inner join between Regions and Countries tables to retrieve the region name and country name of each region:**

```
SELECT Regions.Region_Name, Countries.Country_Name
FROM Regions
INNER JOIN Countries ON Regions.Region_ID = Countries.Region_ID;
```

7. **Inner join between Employees and Locations tables to retrieve the first name, last name, and city of each employee:**

```
SELECT Employees.First_Name, Employees.Last_Name, Locations.City
FROM Employees
INNER JOIN Locations ON Employees.Department_ID = Locations.Location_ID;
```

8. **Inner join between Department and Locations tables to retrieve the department name and city of each department:**

```
SELECT Department.Department_Name, Locations.City
FROM Department
INNER JOIN Locations ON Department.Location_ID = Locations.Location_ID;
```

9. **Inner join between Jobs and Employees tables to retrieve the job title and email of each employee:**

```
SELECT Jobs.Job_Title, Employees.Email
FROM Jobs
INNER JOIN Employees ON Jobs.Job_ID = Employees.Job_ID;
```

10. **Inner join between Jobs and Departments tables to retrieve the job title and department name of each job:**

```
SELECT Jobs.Job_Title, Department.Department_Name
FROM Jobs
INNER JOIN Department ON Jobs.Job_ID = Department.Department_ID;
```

11. **Retrieve employees' information along with their job title and department name:**

```
SELECT Employees.First_Name, Employees.Last_Name, Employees.Email, Jobs.Job_Title,
Department.Department_Name
FROM Employees
JOIN Jobs ON Employees.Job_ID = Jobs.Job_ID
JOIN Department ON Employees.Department_ID = Department.Department_ID;
```

12. **Retrieve employees' information along with their country name and region name:**

```
SELECT Employees.First_Name, Employees.Last_Name, Employees.Email, Countries.Country_Name,
Regions.Region_Name
FROM Employees
JOIN Department ON Employees.Department_ID = Department.Department_ID
JOIN Locations ON Department.Location_ID = Locations.Location_ID
JOIN Countries ON Locations.Country_ID = Countries.Country_ID
JOIN Regions ON Countries.Region_ID = Regions.Region_ID;
```

13. **Retrieve employees' information along with their country name and region name:**

```
SELECT Employees.First_Name, Employees.Last_Name, Employees.Email, Jobs.Job_Title,
Department.Department_Name, Countries.Country_Name, Regions.Region_Name
FROM Employees
JOIN Jobs ON Employees.Job_ID = Jobs.Job_ID
JOIN Department ON Employees.Department_ID = Department.Department_ID
JOIN Locations ON Department.Location_ID = Locations.Location_ID
JOIN Countries ON Locations.Country_ID = Countries.Country_ID
JOIN Regions ON Countries.Region_ID = Regions.Region_ID;
```

14. **Retrieve employees' information along with their job title and department name for employees who work in the 'United States':**

```
SELECT Employees.First_Name, Employees.Last_Name, Employees.Email, Jobs.Job_Title,
Department.Department_Name
FROM Employees
JOIN Jobs ON Employees.Job_ID = Jobs.Job_ID
JOIN Department ON Employees.Department_ID = Department.Department_ID
JOIN Locations ON Department.Location_ID = Locations.Location_ID
JOIN Countries ON Locations.Country_ID = Countries.Country_ID
WHERE Countries.Country_Name = 'United States';
```

15. **Retrieve employees' information along with their job title and department name for employees who work in the 'North America' region:**

```
SELECT Employees.First_Name, Employees.Last_Name, Employees.Email, Jobs.Job_Title,
Department.Department_Name
FROM Employees
JOIN Jobs ON Employees.Job_ID = Jobs.Job_ID
JOIN Department ON Employees.Department_ID = Department.Department_ID
JOIN Locations ON Department.Location_ID = Locations.Location_ID
JOIN Countries ON Locations.Country_ID = Countries.Country_ID
JOIN Regions ON Countries.Region_ID = Regions.Region_ID
WHERE Regions.Region_Name = 'North America';
```

16. **Retrieve employees' information along with their job title and department name for employees who work in the 'Software Engineer' job title:**

```
SELECT Employees.First_Name, Employees.Last_Name, Employees.Email, Jobs.Job_Title,
Department.Department_Name
FROM Employees
JOIN Jobs ON Employees.Job_ID = Jobs.Job_ID
JOIN Department ON Employees.Department_ID = Department.Department_ID
WHERE Jobs.Job_Title = 'Software Engineer';
```

17. **Retrieve employees' information along with their job title and department name for employees who work in the 'United States' and have a job title of 'Software Engineer':**

```
SELECT Employees.First_Name, Employees.Last_Name, Employees.Email, Jobs.Job_Title,
Department.Department_Name
FROM Employees
JOIN Jobs ON Employees.Job_ID = Jobs.Job_ID
JOIN Department ON Employees.Department_ID = Department.Department_ID
JOIN Locations ON Department.Location_ID = Locations.Location_ID
JOIN Countries ON Locations.Country_ID = Countries.Country_ID
WHERE Countries.Country_Name = 'United States' AND Jobs.Job_Title = 'Software Engineer'
```

18. **Joining the "employees" and "jobs" tables on the "job_id" column and filtering by salary range:**

```
SELECT employees.employee_id, employees.first_name, employees.last_name, jobs.job_title
FROM employees
JOIN jobs ON employees.job_id = jobs.job_id
WHERE employees.salary >= jobs.min_salary AND employees.salary <= jobs.max_salary;
```