

# SQL Tasks

## 1. Create a Database

```
CREATE DATABASE CyberSecurityDB;
```

## 2. Use a Database

```
USE CyberSecurityDB;
```

## 3. Create a Table

```
CREATE TABLE Users (  
    id INT PRIMARY KEY,  
    name VARCHAR(50),  
    email VARCHAR(100),  
    city VARCHAR(50)  
);
```

## 4. Insert Data into a Table

```
INSERT INTO Users (id, name, email, city)  
VALUES (1, 'Alex', 'alex@mail.com', 'New York');
```

## 5. Retrieve All Data

```
SELECT * FROM Users;
```

## 6. Retrieve Specific Columns

```
SELECT name, city FROM Users;
```

### **7. Use WHERE Clause**

```
SELECT * FROM Users WHERE city = 'New York';
```

### **8. Use AND / OR Operators**

```
SELECT * FROM Users WHERE city = 'New York' OR city = 'London';
```

### **9. Use ORDER BY**

```
SELECT * FROM Users ORDER BY name ASC;
```

### **10. Use DISTINCT**

```
SELECT DISTINCT city FROM Users;
```

### **11. Update a Record**

```
UPDATE Users SET city = 'Boston' WHERE id = 1;
```

### **12. Delete a Record**

```
DELETE FROM Users WHERE id = 1;
```

### **13. Add a New Column**

```
ALTER TABLE Users ADD age INT;
```

#### **14. Delete a Column**

```
ALTER TABLE Users DROP COLUMN age;
```

#### **15. Rename a Column**

```
ALTER TABLE Users RENAME COLUMN city TO location;
```

#### **16. Find Maximum Value**

```
SELECT MAX(age) AS MaxAge FROM Users;
```

#### **17. Find Minimum Value**

```
SELECT MIN(age) AS MinAge FROM Users;
```

#### **18. Find Average Value**

```
SELECT AVG(age) AS AvgAge FROM Users;
```

#### **19. Count Rows**

```
SELECT COUNT(*) AS TotalUsers FROM Users;
```

## **20. Group By**

```
SELECT city, COUNT(*) AS NumUsers  
FROM Users  
GROUP BY city;
```

## **21. Having Clause**

```
SELECT city, COUNT(*) AS NumUsers  
FROM Users  
GROUP BY city  
HAVING COUNT(*) > 2;
```

## **22. Like Operator (Pattern Matching)**

```
SELECT * FROM Users WHERE name LIKE 'A%';
```

## **23. IN Operator**

```
SELECT * FROM Users WHERE city IN ('London', 'Paris', 'Berlin');
```

## **24. BETWEEN Operator**

```
SELECT * FROM Users WHERE age BETWEEN 20 AND 30;
```

## **25. Create a Second Table (Orders)**

```
CREATE TABLE Orders (  
    order_id INT PRIMARY KEY,  
    user_id INT,  
    amount DECIMAL(10,2),
```

```
FOREIGN KEY (user_id) REFERENCES Users(id)
);
```

## **26. INNER JOIN**

```
SELECT Users.name, Orders.amount
FROM Users
INNER JOIN Orders ON Users.id = Orders.user_id;
```

## **27. LEFT JOIN**

```
SELECT Users.name, Orders.amount
FROM Users
LEFT JOIN Orders ON Users.id = Orders.user_id;
```

## **28. RIGHT JOIN**

```
SELECT Users.name, Orders.amount
FROM Users
RIGHT JOIN Orders ON Users.id = Orders.user_id;
```

## **29. Subquery Example**

```
SELECT name
FROM Users
WHERE id IN (SELECT user_id FROM Orders WHERE amount > 500);
```

## **30. Create a View**

```
CREATE VIEW HighValueOrders AS
```

```
SELECT Users.name, Orders.amount  
FROM Users  
JOIN Orders ON Users.id = Orders.user_id  
WHERE Orders.amount > 500;
```

### **31. Drop a Table**

```
DROP TABLE Orders;
```

### **32. Drop a Database**

```
DROP DATABASE CyberSecurityDB;
```