**SQL SELECT with examples**

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## **What is SQL SELECT?**

The SELECT statement is used to select a specific set of data from the database. The data returned by the SELECT statement is stored in a result table called as result set.

## **SQL SELECT Syntax:**

## Examples**:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **StudentID** | **StudentName** | **Age** | **City** | **Country** |
| 1 | Rohan | 23 | Mumbai | India |
| 2 | Sameera | 22 | Mumbai | India |
| 3 | Anna | 21 | London | United Kingdom |
| 4 | John | 19 | New York | USA |
| 5 | Alice | 22 | Berlin | Germany |

### **SQL SELECT Column Examples:**

**Example:** Write a query to retrieve the StudentID, StudentName and Age from the Students table.

|  |  |
| --- | --- |
| 1 | **SELECT StudentID, StudentName, Age FROM Students;** |

#### Output:

|  |  |  |
| --- | --- | --- |
| **StudentID** | **StudentName** | **Age** |
| 1 | Rohan | 23 |
| 2 | Sameera | 22 |
| 3 | Anna | 21 |
| 4 | John | 19 |
| 5 | Alice | 22 |

### **SQL SELECT \* Example**

The Asterisk(\*) is used to select all the data from the database/ table/ column.

**Example:** Write a query to retrieve all the details from the Students table.

|  |  |
| --- | --- |
| 1 | **SELECT \* FROM Students;** |

#### Output:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **StudentID** | **StudentName** | **Age** | **City** | **Country** |
| 1 | Rohan | 23 | Mumbai | India |
| 2 | Sameera | 22 | Mumbai | India |
| 3 | Anna | 21 | London | United Kingdom |
| 4 | John | 19 | New York | USA |
| 5 | Alice | 22 | Berlin | Germany |

### **Use SELECT with DISTINCT**

You can use the SELECT statement with the DISTINCT statement to retrieve only distinct values.

#### **Syntax**

|  |  |
| --- | --- |
| **1** | **SELECT DISTINCT ColumnName1, ColumnName2,ColumnName(N) FROM TableName;** |

#### **Example**

|  |  |
| --- | --- |
| **1** | **SELECT DISTINCT Age FROM Students;** |

**Output:**

|  |
| --- |
| **Age** |
| 23 |
| 22 |
| 21 |
| 19 |

Moving on in this article, let us understand how to use SQL SELECT with the ORDER BY clause.

### **Use SELECT with ORDER BY**

As we all know that the ORDER BY statement is used to sort the results either in ascending or descending order. We can use the ORDER BY statement with the SELECT statement to retrieve specific data in ascending or descending order.

##### **Syntax**

|  |  |
| --- | --- |
| 1  2  3 | SELECT ColumnName1, ColumnName2, ColumnName(N)  FROM TableName  ORDER BY ColumnName1, ColumnName2, ... ASC|DESC; |

#### **Example to use only ORDER BY**

Write a query to select all the fields from the students table ordered by city.

|  |  |
| --- | --- |
| 1 | **SELECT \* FROM Students ORDER BY City;** |

**Output:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **StudentID** | **StudentName** | **Age** | **City** | **Country** |
| 5 | Alice | 22 | Berlin | Germany |
| 3 | Ana | 21 | London | United Kingdom |
| 1 | Rohan | 23 | Mumbai | India |
| 2 | Sameera | 22 | Mumbai | India |
| 4 | John | 19 | New York | USA |

### **Example to use ORDER BY in descending order**

Write a query to select all the fields from the students table ordered by city in the descending order.

### **Use SELECT with GROUP BY**

The GROUP BY statement is used with the SELECT statement to group the result-set by one or more columns

##### **Syntax**

|  |
| --- |
| **SELECT ColumnName1, ColumnName2,..., ColumnName(N)**  **FROM TableName**  **WHERE Condition**  **GROUP BY ColumnName(N)**  **ORDER BY ColumnName(N);** |

Write a query to list the number of students of each age.

|  |  |
| --- | --- |
| **1** | **SELECT COUNT(StudentID), City FROM Students GROUP BY City;** |

**Output:**

|  |  |
| --- | --- |
| **COUNT(StudentID)** | **City** |
| 2 | Mumbai |
| 1 | London |
| 1 | New York |
| 1 | Berlin |

### **Use SELECT with HAVING clause**

The HAVING clause can be used with the SELECT statement to retrieve data based on some conditions.

##### **Syntax**

|  |
| --- |
| **SELECT ColumnName1, ColumnName2, ColumnName(N)**  **FROM TableName**  **WHERE Condition**  **GROUP BY ColumnName(N)**  **HAVING Condition**  **ORDER BY ColumnName(N);** |

#### **Example**

Write a query to retrieve the number of students in each city where the number of students is > 1, and are sorted in a descending order.

|  |
| --- |
| **SELECT COUNT(StudentID), City**  **FROM Students**  **GROUP BY City**  **HAVING COUNT(StudentID) > 1**  **ORDER BY COUNT(StudentID) DESC;** |

#### Output:

|  |  |
| --- | --- |
| **Count(StudentID)** | **City** |
| 2 | Mumbai |

### **Use SELECT with INTO clause**

This statement is used when you want to copy data from one table to the other table.

#### **Syntax**

|  |  |
| --- | --- |
| 1  2  3 | **SELECT \* INTO NewTableName [IN DatabaseName]**  **FROM OldTableName**  **WHERE Condition;** |

#### Example

Write a query to create a backup of the Students database.

|  |  |
| --- | --- |
| **1** | **SELECT \* INTO StudentBackup FROM Students;** |

#### Output:

You will see that the StudentBackup table will have all the fields from Students table.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **StudentID** | **StudentName** | **Age** | **City** | **Country** |
| 1 | Rohan | 23 | Mumbai | India |
| 2 | Sameera | 22 | Mumbai | India |
| 3 | Anna | 21 | London | United Kingdom |
| 4 | John | 19 | New York | USA |
| 5 | Alice | 22 | Berlin | Germany |

**Example:** Write a query to create a backup by selecting few columns of the Students table.

|  |  |
| --- | --- |
| **1** | **SELECT StudentName, Age INTO StudentBackup FROM Students;** |

#### Output:

You will see that the StudentBackup table will have the following fields from Students table.

|  |  |
| --- | --- |
| **StudentName** | **Age** |
| Rohan | 23 |
| Sameera | 22 |
| Anna | 21 |
| John | 19 |
| Alice | 22 |

**Example:** Write a query to create a backup by inserting all details of all those students who study in City ‘Mumbai’.

|  |  |
| --- | --- |
| **1** | **SELECT \* INTO StudentsBackup FROM Students WHERE City = 'Mumbai';** |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **StudentID** | **StudentName** | **Age** | **City** | **Country** |
| 1 | Rohan | 23 | Mumbai | India |
| 2 | Sameera | 22 | Mumbai | India |