**DISTINCT keyword**

In SQL, the DISTINCT keyword is used in a SELECT statement to eliminate duplicate rows from the result set. It returns only unique values in the specified column or combination of columns.

Consider two tables: Students and Courses. The Students table contains student information, and the Courses table contains information about the courses available.

Students Table:

| **StudentID** | **FirstName** | **LastName** | **MajorID** |
| --- | --- | --- | --- |
| 1 | Alice | Smith | 101 |
| 2 | Bob | Johnson | 102 |
| 3 | Charlie | Brown | 101 |
| 4 | David | Lee | 103 |

Courses Table:

| **CourseID** | **CourseName** |
| --- | --- |
| 101 | Mathematics |
| 102 | English |
| 103 | Science |
| 104 | History |

Example 1: Retrieve a list of unique majors available in the Students table.

SELECT DISTINCT MajorID FROM Students;

Output:

| MajorID |

|------------|

| 101 |

| 102 |

| 103 |

Example 2: Retrieve a list of unique course names available in the Courses table.

SELECT DISTINCT CourseName FROM Courses;

Output:

| CourseName |

|-------------------|

| Mathematics |

| English |

| Science |

| History |

Example 3: Retrieve a list of unique combinations of first names and last names from the Students table.

SELECT DISTINCT FirstName, LastName FROM Students;

Output:

| FirstName | LastName |

|---------------|---------------|

| Alice | Smith |

| Bob | Johnson |

| Charlie | Brown |

| David | Lee |

In each of these examples, the DISTINCT keyword ensures that only unique values are returned in the result set. It eliminates duplicate rows based on the specified columns, providing a concise and meaningful dataset.

**LIKE operator**

In SQL, the LIKE operator is used in a WHERE clause to search for a specified pattern in a column. It's often used with wildcard characters '%' (percent sign) and \_ (underscore), where '%' represents zero or more characters, and \_ represents a single character.

Example 1: Retrieve students whose first name starts with 'A'.

SELECT \* FROM Students WHERE FirstName LIKE 'A%';

Output:

| StudentID | FirstName | LastName | MajorID |

|--------------|----------------|--------------|-------------|

| 1 | Alice | Smith | 101 |

Example 2: Retrieve courses that contain 'Sci' anywhere in the course name.

SELECT \* FROM Courses WHERE CourseName LIKE '%Sci%';

Output:

| CourseID | CourseName |

|-------------|-------------------|

| 103 | Science |

Example 3: Retrieve students whose last name ends with 'son'.

SELECT \* FROM Students WHERE LastName LIKE '%son';

Output:

| StudentID | FirstName | LastName | MajorID |

|---------------|---------------|---------------|------------|

| 2 | Bob | Johnson | 102 |

In each of these examples, the LIKE operator is used to filter rows based on a specified pattern in a column. The '%' character allows for matching any sequence of characters (including zero characters), while the '\_' character matches any single character.