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| **What dose it do** | **SQL Statement** | **Syntax** | **Example** |
| Summon specific data from table | SELECT | SELECT column name FROM table name | SELECT L\_Name  FROM Lecturer |
| Summon all data from a table | SELECT \* | SELECT \* FROM table name | SELECT \*  FROM Lecturer |
| Remove redundancy | SELECT DISTINCT | SELECT DISTINCT column name FROM table name | SELECT DISTINCT Advisor  FROM Student |
| Put restrictions on the Summoned data | WHERE | SELECT column name FROM table name WHERE column name operator value | Select First\_Name  from Student  where Grade=50 |
| Used to apply aggregate functions  like COUNT(), MIN() , MAX()…etc  with other columns | GROUP BY | SELECT column name, aggregate\_function(column\_name) FROM table\_name  GROUP BY column\_name | SELECT Advisor, COUNT(Student\_ID)  FROM Student  GROUP BY Advisor;  SELECT Advisor, Avg(Age)  FROM Student  GROUP BY Advisor; |
| Put restrictions on the Group Statement | HAVING | SELECT column name, aggregate\_function(column\_name) FROM table\_name WHERE column name operator value GROUP BY column name HAVING aggregate\_function(column\_name) operator value | SELECT Advisor, COUNT(Student\_ID) as N\_Student  FROM Student  GROUP BY Advisor  HAVING COUNT(Student\_ID) >1 |
| Put the Summoned data in a certain order | ORDER BY | SELECT column name FROM table\_name ORDER BY column name [ASC|DESC] | SELECT l\_Id, L\_Name  FROM Lecturer  ORDER BY L\_Name DESC ; |
| a restrictions in the WHERE Statement | AND / OR | SELECT column name FROM table\_name WHERE condition AND|OR condition | SELECT \*  FROM Student  WHERE Grade < 45 AND Age> 20; |
| a restrictions in the WHERE Statement | BETWEEN | SELECT column name FROM table\_name WHERE column name BETWEEN value1 AND value2 | SELECT L\_Id, L\_Name  FROM Lecturer  WHERE L\_ID  BETWEEN 2 AND 4; |
| Rename columns | AS (alias) | SELECT column name AS column\_alias FROM table\_name | SELECT first\_Name AS KSU\_Student  FROM Student; |
| a restrictions in the WHERE Statement | LIKE | SELECT column name FROM table\_name WHERE column name LIKE pattern | SELECT L\_Id, L\_Name  FROM Lecturer  WHERE L\_Name LIKE '%S%'; |
| Summon data from different tables | INNER JOIN | SELECT column name FROM table\_name1 INNER JOIN table\_name2  ON table\_name1.columnname=table\_name2.column\_name | SELECT First\_Name, L\_Name  FROM Student, Lecturer  WHERE Lecturer.L\_ID = A\_ID;  SELECT First\_Name, L\_Name  FROM Lecturer INNER JOIN Student  ON Lecturer.L\_ID = Student.A\_ID; |

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| Create New table | CREATE TABLE | CREATE TABLE table\_name( column\_name1 data\_type, column\_name2 data\_type,...) | CREATE TABLE Room(  RNO int,  RDescription Text); |
| Add data to a certain table | INSERT INTO | INSERT INTO table\_name VALUES (value1, value2, value3,....)  *or*  INSERT INTO table\_name (column1, column2, column3,...) VALUES (value1, value2, value3,....) | INSERT INTO Student  VALUES (10, 'Mohamed','Saman',24, 15,'Dr.Ali', 1);  INSERT INTO Student  (Student\_ID,Age)  VALUES (11, 15); |
| Change data in a table | UPDATE | UPDATE table\_name SET column1=value, column2=value,... WHERE some\_column=some\_value | UPDATE Student  SET First\_Name='Ali', A\_ID=2, Advisor='Dr.Ahmed'  WHERE Student\_ID=1000; |
| Change the criteria of a table | ALTER TABLE | ALTER TABLE table\_name  ADD column name datatype  or  ALTER TABLE table\_name  DROP COLUMN column name datatype | ALTER TABLE Student  ADD A\_Date Date;  ALTER TABLE Student  DROP COLUMN A\_Date; |
| Delete data in a table | DELETE | DELETE FROM table\_name WHERE some\_column=some\_value  or  DELETE FROM table\_name  (**Note:** Deletes the data inside the table!!) | DELETE FROM Lecturer  WHERE L\_ID =1  DELETE FROM Lecturer  WHERE L\_ID  BETWEEN 2 AND 4; |
| Delete a table from a database | DROP TABLE | DROP TABLE table\_name | DROP TABLE Room; |