15CSE302 Database Management Systems

SQL Functions

B.Tech /III Year CSE/V Semester L T P C 2 0 2 3

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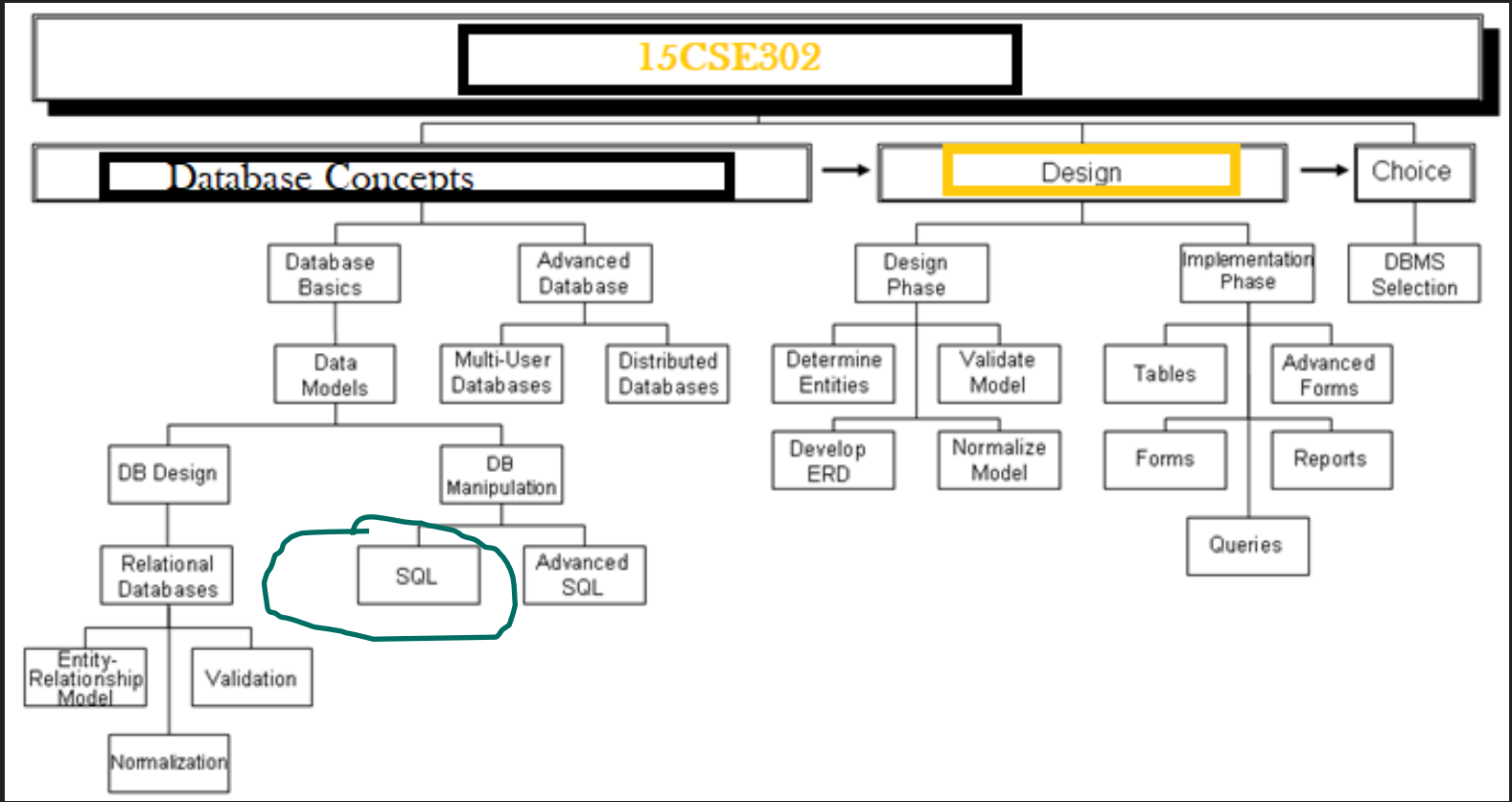
Syllabus


15CSE302
Database Concepts
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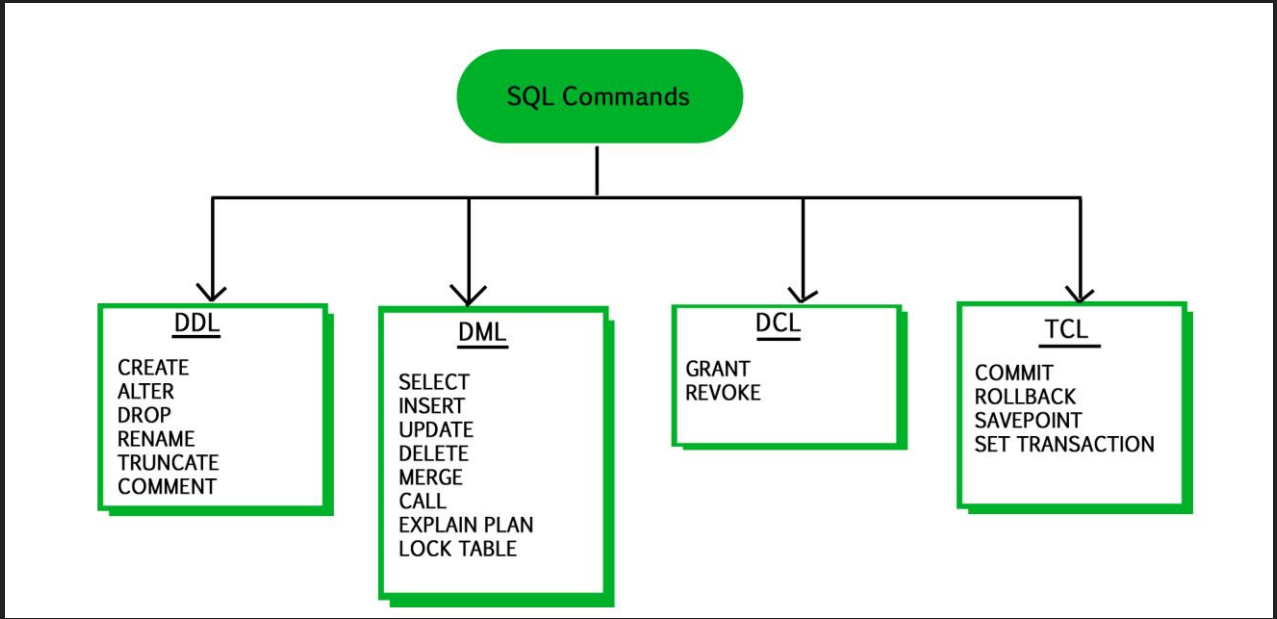
Contents

- SQL Functions
- Insert Delete Update

SQL Structured Query Language



Arrange the record in order order by

Display all instructors, name and salary in the ascending order of salary

Select name,salary from instructor order by salary;

Display all instructors, name and salary in the descending order of salary

Select name,salary from instructor order by salary desc;

SQL Functions

Types of SQL Functions

- **Numeric Functions**
  - Single value functions
  - List value functions
  - Group Value Functions
- **Character Functions**
- **Date functions**

DUAL Table

- **What is a DUAL Table in Oracle?**
  A single row and single column dummy table provided by Oracle
- Its used to perform mathematical calculations without using a table.

Select * from DUAL

DUMMY

X

Select 777 * 888 from Dual

- **Output:**
- 777 * 888

689976

Single value functions

Select abs(-12.2) from dual;

Select sqrt(12) from dual;

Select name,salary+1000 from instructor;

Select name,salary -1000 from instructor;

Select name, newsalary as salary+salary*0.2 from instructor;

Numeric Functions

Function Name	Examples	Return Value
ABS (x)	ABS (1)	1
	ABS (-1)	-1
CEIL (x)	CEIL (2.83)	3
	CEIL (2.49)	3
	CEIL (-1.6)	-1
FLOOR (x)	FLOOR (2.83)	2
	FLOOR (2.49)	2
	FLOOR (-1.6)	-2
ROUND (x, y)	ROUND (125.456, 1)	125.4
	ROUND (125.456, 0)	125
	ROUND (124.456, -1)	120
TRUNC (x, y)	TRUNC (140.234, 2)	140.23
	TRUNC (-54, 1)	54
	TRUNC (5.7)	5
	TRUNC (142, -1)	140

Aggregate Functions

MIN	**returns the smallest value in a given column**
MAX	returns the largest value in a given column
SUM	returns the sum of the numeric values in a given column
AVG	returns the average value of a given column
COUNT	returns the total number of values in a given column
COUNT(*)	returns the number of rows in a table

Aggregate Functions

Average salary for all employee

```
SELECT AVG(salary) FROM employee;
```

Average salary for all employee whose title is equal to 'Programmer‘

```
SELECT AVG(salary)

FROM employee

WHERE title = 'Programmer';
```

Aggregate Functions

To display the number of Employees

SELECT Count(*) FROM employee;

GROUP BY clause

- The GROUP BY clause will gather all of the rows together that contain data in the specified column(s) and will allow aggregate functions to be performed on the one or more columns.
- **Retrieve a list of the highest paid salaries in each dept:**

```
SELECT max(salary), dept_name

FROM instructor

GROUP BY dept_name;
```

Having clause

- Retrieve a list of the highest paid salaries in each dept having salary greater than 20000:

```
SELECT max(salary), dept_name

FROM employee

GROUP BY dept_name
 having max(salary)>20000;
```

insert

insert into instructor values (‘22222’,’Einstein’,’Physics’,95000)

Or

insert into instructor values (‘&ID’,’&name’,’&dept_name’,&salary)

Or

insert into instructor (ID,name,dept_name,salary values

(‘22222’,’Einstein’,’Physics’,95000)

delete

- Deleting a record whose name is Einstein

Delete from instructor where name like ‘Einstein’;

- Delete all the instructors from finance department

delete from instructor where dept_name = ‘Finance’;

- Delete all the instructors whose salary lies between 1300 and 2000.

delete from instructor where salary between 1300 and 2000;

update

- Increase the salary of all instructors whose salary is less than 7000 by 1000.

```
update instructor set salary = salary + 1000 where salary<7000;
```

- Change the salary for the instructor whose name is Raj

```
update instructor set salary=1000 where name =’Raj’;
```

Summary

- SQL Functions

Next Session

- Joins
- Set operations

References

- https://docs.oracle.com/en/database/oracle/oracle-database/20/newft/new-features.html
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About Me

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Areas of Interests:

1. NLP
2. Information Retrieval
3. Deep Learning

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Thank You

Happy to answer any questions ! ! !