

- 1) create the table with all constraint
- 2) Create the table and define the PK FK relationship
- 3) insert the data in created table.
- 4) Write the SQL query using Where clause and use the all of the operator
- 5) Write the aggregate query using group by having clause
- 6) Write the query using dense rank and rank function
- 7) write the query using all 4 joins
- 8) write the query using String function

The screenshot shows the DBeaver 22.2.0 interface. The SQL Editor contains the following script:

```

-- Create table ANS_STUDENT
CREATE TABLE ANS_STUDENT (
    STUDENT_ID INT PRIMARY KEY,
    STUDENT_NAME VARCHAR(50),
    STUDENT_AGE INT,
    COURSE_ID INT,
    FOREIGN KEY (COURSE_ID) REFERENCES ANS_COURSE (COURSE_ID)
);

-- Insert data into ANS_STUDENT
Insert INTO ANS_STUDENT VALUES(2,'CSE');
Insert INTO ANS_STUDENT VALUES(3,'ISE');
Insert INTO ANS_STUDENT VALUES(4,'ECE');
Insert INTO ANS_STUDENT VALUES(5,'MECHANICAL');

SELECT * FROM ANS_STUDENT

SELECT * FROM ANS_STUDENT WHERE STUDENT_AGE=16
  
```

The Results window shows the output of the first query:

STUDENT_ID	STUDENT_NAME	STUDENT_AGE	COURSE_ID
1	John Deo	17	1
2	Max Ruin	16	2
3	Arnold	16	3
4	Krish Star	17	4
5	John Mike	16	1
6	Alex John	17	2
7	My John Rob	17	3

The status bar indicates: Rows: 1 | 7 row(s) fetched - 280ms, on 2022-09-08 at 15:00:15.

The screenshot shows the DBeaver 22.2.0 interface. The SQL Editor contains the following script:

```

-- Create table ANS_COURSE
CREATE TABLE ANS_COURSE (
    COURSE_ID INT PRIMARY KEY,
    COURSE_NAME VARCHAR(50)
);

-- Insert data into ANS_COURSE
Insert INTO ANS_COURSE VALUES(2,'CSE');
Insert INTO ANS_COURSE VALUES(3,'ISE');
Insert INTO ANS_COURSE VALUES(4,'ECE');
Insert INTO ANS_COURSE VALUES(5,'MECHANICAL');

SELECT * FROM ANS_STUDENT

SELECT * FROM ANS_COURSE
  
```

The Results window shows the output of the second query:

COURSE_ID	COURSE_NAME
1	CIVIL
2	CSE
3	ISE
4	ECE
5	MECHANICAL

The status bar indicates: Rows: 1 | 5 row(s) fetched - 301ms, on 2022-09-08 at 15:00:50.

DBeaver 22.2.0 - <dlithe> Script-1

File Edit Navigate Search SQL Editor Database Window Help

SQL Commit Rollback Auto dlithe dbo@dlithe

Databases... x <dlithe> Script <dlithe> Script-1 x

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- Sessions

Project -... x

Name

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- Scripts.sql

```
CREATE TABLE ANS_COURSE
(
  COURSE_ID INTEGER PRIMARY KEY,
  COURSE_NAME VARCHAR(20) NOT NULL
);

CREATE TABLE ANS_STUDENT
(
  STUDENT_ID INT PRIMARY KEY,
  STUDENT_NAME VARCHAR(20) NOT NULL,
  STUDENT_AGE INTEGER CHECK(STUDENT_AGE<=18),
  COURSE_ID INTEGER FOREIGN KEY REFERENCES ANS_COURSE(COURSE_ID)
);

INSERT INTO ANS_STUDENT VALUES (1,'John Deo',17,1),
(2, 'Max Ruin', 16, 2),
(3, 'Arnold', 16,3);
INSERT INTO ANS_STUDENT VALUES
(4, 'Krish Star', 17, 4),
(5, 'John Mike', 16, 1),
(6, 'Alex John', 17,2),
(7, 'My John Rob',17,3);

Insert INTO ANS_COURSE VALUES(1,'CIVIL');
Insert INTO ANS_COURSE VALUES(2,'CSE');
Insert INTO ANS_COURSE VALUES(3,'ISE');
Insert INTO ANS_COURSE VALUES(4,'ECE');
Insert INTO ANS_COURSE VALUES(5,'MECHANICAL');
```

Results 1 x

SELECT * FROM ANS_COURSE

Grid

Save Cancel Script

IST en Writable Smart Insert 108 : 26 : 2389 Set: 0 | 0

76°F Cloudy 3:01 PM 9/8/2022

DBeaver 22.2.0 - <dlithe> Script-1

File Edit Navigate Search SQL Editor Database Window Help

SQL Commit Rollback Auto dlithe dbo@dlithe

Databases... x <dlithe> Script <dlithe> Script-1 x

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- Sessions

Project -... x

Name

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```
SELECT * FROM ANS_STUDENT WHERE STUDENT_AGE=16

SELECT * FROM ANS_STUDENT WHERE STUDENT_NAME LIKE 'M%'
```

Results 1 x

SELECT * FROM ANS_STUDENT WHERE STUDENT_AGE=16

Grid

Save Cancel Script

IST en Writable Smart Insert 112 : 55 [54] Set: 54 | 1

STUDENT_ID	STUDENT_NAME	STUDENT_AGE	COURSE_ID
2	Max Ruin	16	2
7	My John Rob	17	3

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DBEaver 22.2.0 - <dlithe> Script-1

File Edit Navigate Search SQL Editor Database Window Help

SQL Commit Rollback Auto dlithe dbo@dlithe

Databases... x

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 - Databases
 - Security
 - Logins
 - Administrator
 - Sessions

Project ... x

Name

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- Scripts
 - Script-1.sql
 - Script.sql

```

Insert INTO ANS_COURSE VALUES(4,'ECE');
Insert INTO ANS_COURSE VALUES(5,'MECHANICAL');

SELECT * FROM ANS_STUDENT

SELECT * FROM ANS_COURSE

SELECT * FROM ANS_STUDENT WHERE STUDENT_AGE=16

SELECT * FROM ANS_STUDENT WHERE STUDENT_NAME LIKE 'M%'

SELECT COUNT(1) AS NO_OF_STUDENTS,COURSE_ID FROM ANS_STUDENT GROUP BY COURSE_ID

```

Results 1 x

SELECT COUNT(1) AS NO_OF_STUDENTS,COURSE_ID

NO_OF_STUDENTS	COURSE_ID
2	1
2	2
2	3
1	4

Save Cancel Script

IST en Writable Smart Insert 200 4 Rows: 1 4 row(s) fetched - 295ms, on 2022-09-08 at 15:01:56

76°F Cloudy 3:02 PM 9/8/2022

DBEaver 22.2.0 - <dlithe> Script-1

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SQL Commit Rollback Auto dlithe dbo@dlithe

Databases... x

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 - Databases
 - Security
 - Logins
 - Administrator
 - Sessions

Project ... x

Name

- Bookmarks
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 - Script.sql

```

SELECT * FROM ANS_STUDENT WHERE STUDENT_AGE=16

SELECT * FROM ANS_STUDENT WHERE STUDENT_NAME LIKE 'M%'

SELECT COUNT(1) AS NO_OF_STUDENTS,COURSE_ID FROM ANS_STUDENT GROUP BY COURSE_ID

SELECT DENSE_RANK () OVER(PARTITION BY COURSE_ID ORDER BY STUDENT_AGE DESC)AS DNSRNK,STUDENT_AGE,COURSE_ID FROM ANS_STUDENT

SELECT * FROM ANS_STUDENT AS S INNER JOIN ANS_COURSE AS C ON S.COURSE_ID=C.COURSE_ID

SELECT * FROM ANS_STUDENT AS S LEFT JOIN ANS_COURSE AS C ON S.COURSE_ID=C.COURSE_ID

SELECT SUBSTRING(STUDENT_NAME,1,4) AS SUBSTRINGS,STUDENT_NAME FROM ANS_STUDENT T

```

Results 1 x

SELECT SUBSTRING(STUDENT_NAME,1,4) AS SUBSTRINGS,STUDENT_NAME

SUBSTRINGS	STUDENT_NAME
John	John Deo
Max	Max Ruin
Arno	Arnold
Kris	Krish Star
John	John Mike
Alex	Alex John
My J	My John Rob

Save Cancel Script

IST en Writable Smart Insert 200 7 Rows: 1 7 row(s) fetched - 343ms, on 2022-09-08 at 15:02:31

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Databases... x

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- Databases
- Security
- Logins
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- Sessions

Project ... x

Name

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- Script-1.sql
- Script.sql

```

SELECT COUNT(1) AS NO_OF_STUDENTS,COURSE_ID FROM ANS_STUDENT GROUP BY COURSE_ID

SELECT DENSE_RANK () OVER(PARTITION BY COURSE_ID ORDER BY STUDENT_AGE DESC)AS DNSRNK,STUDENT_AGE,COURSE_ID FROM ANS_STUDENT

SELECT * FROM ANS_STUDENT AS S INNER JOIN ANS_COURSE AS C ON S.COURSE_ID=C.COURSE_ID

SELECT * FROM ANS_STUDENT AS S LEFT JOIN ANS_COURSE AS C ON S.COURSE_ID=C.COURSE_ID

SELECT SUBSTRING(STUDENT_NAME,1,4) AS SUBSTRINGS,STUDENT_NAME FROM ANS_STUDENT T

SELECT REPLACE(STUDENT_NAME,' ','@'), STUDENT_NAME FROM ANS_STUDENT T

SELECT CHARINDEX('O',STUDENT_NAME) AS INDEXES, STUDENT_NAME FROM ANS_STUDENT T

```

Results 1 x

SELECT REPLACE(STUDENT_NAME,' ','@'),STUDENT_NAME

	STUDENT_NAME
1	John@Deo
2	Max@Ruin
3	Arnold
4	Krish@Star
5	John@Mike
6	Alex@John
7	My@John@Rob

Save Cancel Script

IST en Writable Smart Insert 200 7 Rows: 1 7 row(s) fetched - 495ms, on 2022-09-08 at 15:02:55

76°F Cloudy 3:03 PM 9/8/2022

DBEAVER 22.2.0 - <dlithe> Script-1

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Databases... x

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- Databases
- Security
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- Administrator
- Sessions

Project ... x

Name

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```

SELECT COUNT(1) AS NO_OF_STUDENTS,COURSE_ID FROM ANS_STUDENT GROUP BY COURSE_ID

SELECT DENSE_RANK () OVER(PARTITION BY COURSE_ID ORDER BY STUDENT_AGE DESC)AS DNSRNK,STUDENT_AGE,COURSE_ID FROM ANS_STUDENT

SELECT * FROM ANS_STUDENT AS S INNER JOIN ANS_COURSE AS C ON S.COURSE_ID=C.COURSE_ID

SELECT * FROM ANS_STUDENT AS S LEFT JOIN ANS_COURSE AS C ON S.COURSE_ID=C.COURSE_ID

SELECT SUBSTRING(STUDENT_NAME,1,4) AS SUBSTRINGS,STUDENT_NAME FROM ANS_STUDENT T

SELECT REPLACE(STUDENT_NAME,' ','@'), STUDENT_NAME FROM ANS_STUDENT T

SELECT CHARINDEX('O',STUDENT_NAME) AS INDEXES, STUDENT_NAME FROM ANS_STUDENT T

```

Results 1 x

SELECT CHARINDEX('O',STUDENT_NAME) AS INDEXES,STUDENT_NAME

	INDEXES	STUDENT_NAME
1	1	John Deo
2	0	Max Ruin
3	4	Arnold
4	0	Krish Star
5	2	John Mike
6	7	Alex John
7	5	My John Rob

Save Cancel Script

IST en Writable Smart Insert 200 7 Rows: 1 7 row(s) fetched - 287ms, on 2022-09-08 at 15:03:04

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DBeaver 22.2.0 - <dlithe> Script-1

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Databases... | <dlithe> Script | *<dlithe> Script-1

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Sessions

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SELECT COUNT(1) AS NO_OF_STUDENTS,COURSE_ID FROM ANS_STUDENT GROUP BY COURSE_ID
SELECT DENSE_RANK () OVER(PARTITION BY COURSE_ID ORDER BY STUDENT_AGE DESC)AS DNSRNK,STUDENT_AGE,COURSE_ID FROM ANS_STUDENT
SELECT * FROM ANS_STUDENT AS S INNER JOIN ANS_COURSE AS C ON S.COURSE_ID=C.COURSE_ID
SELECT * FROM ANS_STUDENT AS S LEFT JOIN ANS_COURSE AS C ON S.COURSE_ID=C.COURSE_ID
SELECT SUBSTRING(STUDENT_NAME,1,4) AS SUBSTRINGS,STUDENT_NAME FROM ANS_STUDENT T
SELECT REPLACE(STUDENT_NAME,' ','@'), STUDENT_NAME FROM ANS_STUDENT
SELECT CHARINDEX('O',STUDENT_NAME) AS INDEXES, STUDENT_NAME FROM ANS_STUDENT T

```

Results 1 x

SELECT DENSE_RANK () OVER(PARTITION BY COURSE_ID ORDER BY STUDENT_AGE DESC)AS DNSRNK,STUDENT_AGE,COURSE_ID FROM ANS_STUDENT

STUDENT_ID	STUDENT_NAME	STUDENT_AGE	COURSE_ID
1	John Deo	17	1
2	Max Ruin	16	1
3	Arnold	16	2
4	Krish Star	17	2
5	John Mike	16	3
6	Alex John	17	3
7	My John Rob	17	4

Save Cancel Script | Rows: 1 | 7 row(s) fetched - 370ms, on 2022-09-08 at 15:03:16

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DBeaver 22.2.0 - <dlithe> Script-1

File Edit Navigate Search SQL Editor Database Window Help

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Databases... | <dlithe> Script | *<dlithe> Script-1

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Sessions

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SELECT COUNT(1) AS NO_OF_STUDENTS,COURSE_ID FROM ANS_STUDENT GROUP BY COURSE_ID
SELECT DENSE_RANK () OVER(PARTITION BY COURSE_ID ORDER BY STUDENT_AGE DESC)AS DNSRNK,STUDENT_AGE,COURSE_ID FROM ANS_STUDENT
SELECT * FROM ANS_STUDENT AS S INNER JOIN ANS_COURSE AS C ON S.COURSE_ID=C.COURSE_ID
SELECT * FROM ANS_STUDENT AS S LEFT JOIN ANS_COURSE AS C ON S.COURSE_ID=C.COURSE_ID
SELECT SUBSTRING(STUDENT_NAME,1,4) AS SUBSTRINGS,STUDENT_NAME FROM ANS_STUDENT T
SELECT REPLACE(STUDENT_NAME,' ','@'), STUDENT_NAME FROM ANS_STUDENT
SELECT CHARINDEX('O',STUDENT_NAME) AS INDEXES, STUDENT_NAME FROM ANS_STUDENT T

```

Results 1 x

SELECT * FROM ANS_STUDENT AS S INNER JOIN ANS_COURSE AS C ON S.COURSE_ID=C.COURSE_ID

STUDENT_ID	STUDENT_NAME	STUDENT_AGE	COURSE_ID	COURSE_NAME
1	John Deo	17	1	1 CIVIL
2	Max Ruin	16	2	2 CSE
3	Arnold	16	3	3 ISE
4	Krish Star	17	4	4 ECE
5	John Mike	16	1	1 CIVIL
6	Alex John	17	2	2 CSE
7	My John Rob	17	3	3 ISE

Save Cancel Script | Rows: 1 | 7 row(s) fetched - 410ms, on 2022-09-08 at 15:03:28

IST | en | Writable | Smart Insert | 118 : 74 : 2785 | Sel: 0 | 0

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DBeaver 22.2.0 - <dlithe> Script-1

File Edit Navigate Search SQL Editor Database Window Help

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- Databases
- Security
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- Administer
- Sessions

Project -... x

Name

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 - Script.sql

```
SELECT * FROM ANS_STUDENT WHERE STUDENT_NAME LIKE 'M%'  
SELECT COUNT(1) AS NO_OF_STUDENTS,COURSE_ID FROM ANS_STUDENT GROUP BY COURSE_ID  
SELECT SUM(STUDENT_AGE) AS SUMAGE,COURSE_ID FROM ANS_STUDENT GROUP BY COURSE_ID HAVING SUM(STUDENT_AGE)>17
```

Results 1 x

SELECT SUM(STUDENT_AGE) AS SUMAGE,COURSE_ID

	SUMAGE	COURSE_ID
1	33	1
2	33	2
3	33	3

IST en Writable Smart Insert 116 : 1 [106] Sel: 106 | 1

Rows: 1 3 row(s) fetched - 328ms, on 2022-09-08 at 15:21:25

77°F Cloudy 3:21 PM 9/8/2022