### College Of Engineering Trivandrum

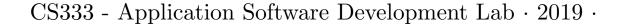
## Application Software Development Lab



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#### Cycle 1

#### Exp No 4

#### AGGREGATE FUNCTIONS

#### 1 Aim

Introduction to Aggregate functions

- 1. AVG()
- 2. MAX()
- 3. MIN()
- 4. SUM()
- 5. COUNT()

#### 2 Questions

Create a table named student and populate the table.

The table contains the marks of 10 students for 3 subjects(Physics, Chemistry, Mathematics). The total marks for physics and chemistry is 25. while for mathematics it is 50.

The pass mark for physics and chemistry is 12 and for mathematics it is 25. A student is awarded a 'Pass' if he has passed all the subjects.

create table student(rollno int not null,name varchar(10),physics int,chemistry
int , maths int,primary key(rollno));

```
insert into student values('1','Adam','20','20','33');
insert into student values('2','Bob','18','9','41');
insert into student values('3','Bright','22','7','31');
insert into student values('4','Duke','13','21','20');
insert into student values('5','Elvin','14','22','23');
insert into student values('6','Fetcher','2','10','48');
insert into student values('7','Georgina','22','12','22');
insert into student values('8','Mary','24','14','31');
insert into student values('9','Tom','19','15','24');
insert into student values('10','Zack','8','20','36');
```

#### 0. Display the Table

select \* from student;

```
asdlab=# select * from student;
 rollno |
                       physics | chemistry | maths
             name
      1
           Adam
                             20
                                           20
                                                    33
      2
           Bob
                             18
                                            9
                                                    41
      3
           Bright
                                            7
                                                     31
                             22
      4
           Duke
                             13
                                                    20
                                           21
      5
           Elvin
                             14
                                                    23
                                           22
           Fetcher
                                                    48
      6
                              2
                                           10
      7
         | Georgina
                             22
                                           12
                                                    22
      8
           Mary
                             24
                                           14
                                                    31
      9
           Tom
                             19
                                           15
                                                    24
     10
           Zack
                              8 |
                                           20
                                                    36
(10 rows)
asdlab=#
```

Figure 1: Student Table

1 Find the class average for the subject 'Physics'

select avg(physics) from student;

```
asdlab=# select avg(physics) from student;
avg
16.20000000000000000
(1 row)
asdlab=#
```

Figure 2: Average for physics

2 Find the highest marks for mathematics (To be displayed as highest\_marks\_maths).

select max(maths) as highest\_marks\_maths from student;

Figure 3: Max maths

3 Find the lowest marks for chemistry(To be displayed as lowest\_mark\_chemistry) select min(chemistry) as lowest\_marks\_chemistry from student;

```
asdlab=# select min(chemistry) as lowest_marks_chemistry from student;
lowest_marks_chemistry
------
7
(1 row)
asdlab=#
```

Figure 4: Minimum for chemistry

4 Find the total number of students who has got a 'pass' in physics.

select count(\*) from student where physics>='12';

```
asdlab=# select count(*) from student where physics>='12';
count
------
8
(1 row)
asdlab=#
```

Figure 5: Physics Pass

5 Generate the list of students who have passed in all the subjects

select \* from student where physics>='12' and chemistry>='12' and maths>='25';

Figure 6: All Pass

# 6. Generate a rank list for the class.Indicate Pass/Fail. Ranking based on total marks obtained by the students.

```
alter table student add column total int; alter table student add column p_or_f char(1); update student set total=physics+chemistry+maths; update student set p_or_f='p' where physics>=12 and chemistry>=12 and maths>=25; update student set p_or_f='f' where physics<12 or chemistry<12 or maths<25; select * from student order by total desc;
```

```
asdlab=# alter table student add column total int;
ALTER TABLE
asdlab=# alter table student add column p_or_f char(1) ;
asdlab=# update student set total=physics+chemistry+maths;
UPDATE 10
asdlab=# update student set p or f='p' where physics>=12 and chemistry>=12 and maths>=25;
UPDATE 2
asdlab=# update student set p_or_f='f' where physics<12 or chemistry<12 or maths<25;
asdlab=# select * from student order by total desc;
                   | physics | chemistry | maths | total | p_or_f
         Adam
                          20
                                      20 I
                          24
                                      14 |
                                                       69
                                                            P
f
         Магу
                          18
                                       9 j
                                               41
                                                       68
     2
         Bob
    10
         Zack
                          8
                                      20
                                               36
                                                       64
         Fetcher
                           2
                                               48
         Bright
                          22
                                                       60
                                      22
                                               23
          Elvin
                          14
                                                       59
                                      15 İ
                                               24
                          19
                                                       58
         Tom
         Georgina
                                      12
                                               22
                                                       56
         Duke
(10 rows)
asdlab=#
```

Figure 7: Rank list labelinsert

#### 7. Find pass percentage of the class for mathematics.

select count(rollno)\*100/(select count(rollno) from student) as maths\_pass\_percentage
from student where maths>='25';

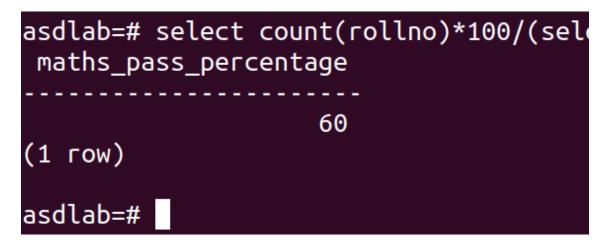


Figure 8: Maths Pass percent

8 Find the overall pass percentage for all class.

select count(rollno)\*100/(select count(rollno) from student) as pass\_percentage
from student where p\_or\_f='p';

```
asdlab=# select count(rollno)*100/
pass_percentage
-----
20
(1 row)
asdlab=#
```

Figure 9: Overall Pass percentage

9 Find the class average.

select avg(total) from student;

Figure 10: Class average

10 Find the total number of students who have got a Pass.

select count(\*) from student where p\_or\_f='p';

```
asdlab=# select count(*) from student where p_or_f='p';
count
-----
2
(1 row)
asdlab=#
```

Figure 11: Total Pass students

### 3 Result

The query was executed and the output was obtained.