Ex. No : 7

Implementation of various aggregate functions in SQL

CO2: Construct queries using SQL for database creation, interaction, modification, and updation. (Cognitive Knowledge Level: Apply)

AIM

Create the tables with the following fields

Faculty (FacultyCode, FacultyName)
Subject (SubjectCode,SubjectName,MaxMark,FacultyCode)
Student(StudentCode,StudentName,DOB,StudentsBranch(CS/EC/EE/ME), AdmissionDate)
M_Mark (StudentCode, SubjectCode, Mark)

Do the following queries

a) Display the number of faculties.
b) Display the total mark for each student.
c) Display the subject,average mark for each subject.
d) Display the name of subjects for which atleast one student got below 40%.
e) Display the name,subject and percentage of mark who got below 40 %.
f) Display the faculties and alloted subjects for each faculty
g) Display the name of faculties who take more than one subject.
h) Display name,subject,mark, % of mark in ascending order of mark

Commands

```
Create Table Faculty (F_Code Number Primary Key, F_Name Varchar(15));
        insert into Faculty values(&facultycode,'&facultyname');
```

SELECT * **FROM** Faculty;

F_CODE	F_NAME
105	Jayakumar
104	Sangeetha

102	Bindu
101	Silgy
103	Vidhya

create table Subject (subjectcode varchar(5) primary key not null,subjectname char(15),maxmark number(5,2),faculty_code int,foreign key(faculty_code) references Faculty(f_code));

insert into Subject values('&subjectcode','&subjectname',&maxmark,&facultycode);

SUBJECTCODE	SUBJECTNAME	MAXMARK	FACULTYCODE
503	DBMS	100	105
501	Maths	150	101
502	FSA	100	102
504	OS	75	103
505	DC	200	104
508	DBMS lab	1001	103

create table Student(studentcode varchar(5) primary key not null,studentname char(15),dob date,studentbranch char(3),adate date,check(studentbranch in('cs','ec','ee','me')));

insert into Student values('&studentcode','&studentname','&dob','&studentbranch','&adate');

Enter value for studentcode: 1
Enter value for studentname: Amitha
Enter value for dob: 12-jan-1987
Enter value for studentbranch: cs
Enter value for adate: 1-jun-2000
old 1: insert into Student
values('&studentcode','&studentname','&dob','&studentbranch','&adate')
new 1: insert into Student values('1','Amitha','12-jan-1987','cs','1-jun-2000')
insert into student values(2,’vaidehi’,’25-dec-88’,’me’,’1-jun-2000’);
insert into student values(3,’varun’,’2-oct-88’,’me’,’2-jun-2000’);
insert into student values(4,’turner’,’5-sep-88’,’ec’,’1-jun-2000’);
insert into student values(5,’vani’,’20-jul-88’,’ee’,’5-jun-2000’);
insert into student values(6,’binu’,’13-aug-88’,’me’,’10-jun-2000’);
insert into student values(7,’chitra’,’14-nov-86’,’me’,’9-jun-1999’);
insert into student values(8,’dona’,’2-dec-91’,’cs’,’2-jun-2000’);
insert into student values(9,’elana’,’5-feb-90’,’cs’,’1-jun-2000’);
insert into student values(10,’fahan’,’20-mar-88’,’ec’,’5-jun-2000’);
insert into student values(11,’ginu’,’13-apr-88’,’ec’,’10-jun-2000’);
insert into student values(12,’hamna’,’14-may-85’,’ee’,’9-jun-1999’);

create table M_mark(studentcode varchar(5) references Student(studentcode),subjectcode varchar(5) references Subject(subjectcode),mark number(5,2),primary key(studentcode,subjectcode));

insert into M_mark values('&studentcode','&subjectcode',&mark);

insert into M_mark values(1,501,40);
insert into M_mark values(1,502,70);
insert into M_mark values(1,503,50);
insert into M_mark values(1,504,80);
insert into M_mark values(1,505,40);
insert into M_mark values(1,508,70);
insert into M_mark values(2,501,90);
insert into M_mark values(2,502,89);
insert into M_mark values(2,503,77);
insert into M_mark values(2,504,95);
insert into M_mark values(2,505,74);
insert into M_mark values(2,508,98);
insert into M_mark values(3,501,40);
insert into M_mark values(3,502,43);
insert into M_mark values(3,503,40);
insert into M_mark values(3,504,40);
insert into M_mark values(3,505,40);
insert into M_mark values(3,508,35);
insert into M_mark values(4,501,50);
insert into M_mark values(5,501,60);
insert into M_mark values(6,501,67);
insert into M_mark values(7,501,23);
insert into M_mark values(8,501,43);
insert into M_mark values(9,501,42);
insert into M_mark values(10,505,74);
insert into M_mark values(11,508,98);
insert into M_mark values(12,501,40);
insert into M_mark values(5,502,43);
insert into M_mark values(6,503,40);
insert into M_mark values(7,504,40);
insert into M_mark values(8,505,40);
insert into M_mark values(9,508,35);
insert into M_mark values(10,501,50);
insert into M_mark values(11,501,60);
insert into M_mark values(12,503,67);
insert into M_mark values(5,504,23);
insert into M_mark values(6,504,23);
insert into M_mark values(9,504,1);
insert into M_mark values(10,504,1);
insert into M_mark values(6,502,43);
insert into M_mark values(7,505,42);

a) Display the number of faculties.

select count(*) “No: of Faculties” from faculty;

No: of Faculties
5

b) Display the total mark for each student.

select studentname,sum(mark) “Total Mark” from M_mark,Student where Student.studentcode= M_mark.studentcode group by studentname;

STUDENTNAME	SUM(MARK)
binu	150
hamna	107
turner	50
fahan	124
vaidehi	523
chitra	105
Amitha	350
ginu	158
varun	238
vani	126
dona	83
elana	77

c) Display the subject,average mark for each subject.

select subjectname,round(avg(mark),2) “Average mark” from Subject,M_mark where Subject.subjectcode= M_mark.subjectcode group by subjectname;

SUBJECTNAME	**Average mark**
DBMS lab	67.2
DC	51.67
FSA	57.6
DBMS	54.8
Maths	50.42
OS	55.6

d) Display the name of subjects for which atleast one student got below 40%.

select subject.subjectname,count(student1.studentname)”NO: OF STUDENTS” from subject,m_mark,student1 where student1.studentcode= m_mark.studentcode and m_mark.mark<(40* maxmark)/100 and subject.SubjectCode=m_mark.Subjectcode group by subject. Subjectname having count(distinct(m_mark.subjectcode))>=1;

SUBJECTNAME	**NO: OF STUDENTS**
DBMS lab	**2**

Maths	**1**
OS	**4**

e) Display the name,subject and percentage of mark who got below 40 %.

select **studentname**, **subjectname**,mark,maxmark,round((m_mark.mark/maxmark)*100,2)"Percentage" from subject, student1, m_mark where mark<(40*maxmark/100) and subject. SubjectCode = m_mark. subjectcode and student1.**studentcode** =m_mark.studentcode;

f) Display the faculties and alloted subjects for each faculty.

select Faculty.f_name,Subject.subjectname from Faculty,Subject where Faculty.F_code=Subject.FACULTYCODE;

F_NAME	SUBJECTNAME
Vidhya	DBMS lab
Jayakumar	DBMS
Silgy	Maths
Bindu	FSA
Vidhya	OS
Sangeetha	DC

g) Display the name of faculties who take more than one subject.

Select f_name name from Faculty where (select count(subjectcode) from Subject where Subject.facultycode=Faculty.f_code)>1 group by Faculty.f_name;

or

select Faculty.f_name,count(subject.SubjectCode) "NO OF SUBJECTS" from Faculty,subject where (select count(*) from Subject where Subject.facultycode=Faculty.f_code)>1 and Subject.facultycode=Faculty.f_code group by Faculty.f_name;

F_NAME	NO OF SUBJECTS
Vidhya	2

h) Display name,subject,mark, % of mark in ascending order of mark

select studentname,subjectname,mark from Student1,Subject,M_mark where Student1.studentcode=M_mark.studentcode and Subject.subjectcode= M_mark.subjectcode order by mark;