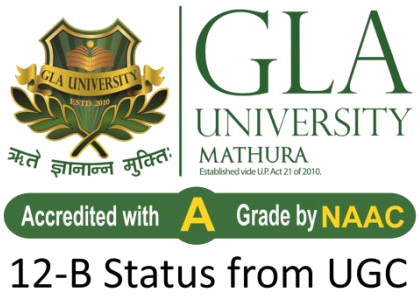
GLA UNIVERSITY , MATHURA



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Roll No. : 24

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Course : BTECH. CS (AIML & IOT)

Subject : DATABASE MANAGEMENT SYSTEM LAB

Subject Code : BCSC 0762

Assignment : 04

Faculty : MR. SURENDRA KUMAR

1. count the total number of Students.

Ans: select count(*) from student;

COUNT(*)
12

2. Calculate the average GPA of all Student.

Ans: select avg(gpa) from student;

AVG(GPA)
3.566666666666666666666666666666666666667

3. Determine the minimum and maximum GPA. Rename the titles as ‘max_GPA’ and ‘min_GPA’ respectively.

Ans: select max(gpa) as max_GPA, min(gpa) as min_GPA from student;

MAX_GPA	MIN_GPA
3.9	2.9

4. count the number of students having GPA greater than or equal to 3.7.

Ans: select count(*) from student where gpa >= 3.7;

COUNT(*)
6

5. Find maximum, Average, minimum, total GPA of all student.

Ans: select max(gpa), avg(gpa), min(gpa), SUM(gpa) from student;

MAX(GPA)	AVG(GPA)	MIN(GPA)	SUM(GPA)
3.9	3.566666666666666666666666666666666666667	2.9	42.8

6. Find total number of colleges in our Application Database.

Ans: select count(DISTINCT cname) from apply;

COUNT(DISTINCTCNAME)
4

7. Find how many different majors students had applied in.

Ans: select count(DISTINCT major) from apply;

COUNT(DISTINCTMAJOR)
7

8. Find total no. of Applications in our Application System's Database.

Ans: select count(*) from apply;

COUNT(*)
19

9. Find average of all distinct GPA.

Ans: select avg(DISTINCT gpa) from student;

AVG(DISTINCTGPA)
3.54285714285714285714285714285714285714

10. Display the total number of application accepted.

Ans: select count(decision) from apply where decision='Y';

COUNT(DECISION)
11

11. Find number of students having GPA>3.4 and coming from high school having size>1000.

Ans: select count(*) from student where gpa > 3.4 AND sizeHS > 1000;

COUNT(*)
1

12. Find how many students applied to ‘marine biology’.

Ans: select count(*) from apply where major='marine biology';

COUNT(MAJOR)
1

13. Find how many applications were rejected and accepted by the colleges.

Ans: select decision, count(decision) from apply group by decision;

DECISION	COUNT(DECISION)
Y	11
N	8

14. Find how many students applied to a particular major. (show count(sid) as No_of_applications).

Ans: select major, count(sid) as No_of_applications from apply group by major;

MAJOR	NO_OF_APPLICATIONS
marine biology	1
psychology	1
EE	3
biology	2
history	3
bioengineering	2
CS	7

15. Find number of applications received by a particular college.

Ans: select cname, count(*) from apply group by cname;

CNAME	COUNT(*)
Berkeley	3
Cornell	6
Stanford	6
MIT	4

16. Find number of applications received in a particular major at a particular college.

Ans: select cname, major, count(*) from apply group by cname, major;

CNAME	MAJOR	COUNT(*)
Berkeley	CS	2
Berkeley	biology	1
Stanford	history	2
Cornell	CS	1
Cornell	history	1
Cornell	bioengineering	1
Cornell	psychology	1
MIT	biology	1
MIT	bioengineering	1
Stanford	CS	3
Cornell	EE	2
Stanford	EE	1
MIT	CS	1
MIT	marine biology	1

17. Give the college name and major, where the number of applications received are greater than or equal to 2.

Ans: select cname, major, count(*) from apply group by cname, major having count(*) >= 2;

CNAME	MAJOR	COUNT(*)
Berkeley	CS	2
Stanford	history	2
Stanford	CS	3
Cornell	EE	2

18. Give the name and no of applications of all those colleges which receives applications from 3 or more students.

Ans: select cname, count(*) from apply group by cname having count(DISTINCT sid) >= 3;

CNAME	COUNT(*)
Berkeley	3
Cornell	6
Stanford	6
MIT	4

19. Give state and number of colleges of a state that has more than 1 college.

Ans: select state, count(cname) from college group by state having count(cname) > 1;

STATE	COUNT(CNAME)
MA	2
CA	2

20. Find the name of students that are duplicate.

Ans: select sname from student group by sname having count(sname) > 1;

SNAME
Amy
Craig

21. Find how many applications are filed by each student. [Hint: use a left join as we need information about all 12 students here. If they applied nowhere

Ans: select s.sname, count(a.sid) from student s left join apply a on s.sid = a.sid group by s.sname order by s.sname;

SID	SNAME	COUNT(A.SID)
123	Amy	4
234	Bob	1
345	Craig	4
456	Doris	0
543	Craig	1
567	Edward	0
654	Amy	0
678	Fay	1
765	Jay	3
789	Gary	0
876	Irene	3
987	Helen	2

22. Provide name of students that filed 3 or more applications.

Ans: select s.sname from student s left join apply a on s.sid = a.sid group by s.sid, s.sname having count(a.sid) >= 3 order by s.sid;

SNAME
Amy
Craig
Jay
Irene

23. Provide name of student who have not applied to any college.

Ans: select s.sname from student s left join apply a on s.sid = a.sid group by s.sname, s.sid having count(a.sid) = 0 order by s.sid;

SNAME
Doris
Edward
Amy
Gary

24. Find maximum GPA, Average GPA, and minimum GPA among applicants of each college. (i.e. say sID 123, 324 and 987 had applied to Berkley then compute and display max GPA among these three)

Ans: select apply.cname, max(student.gpa) as max_gpa, avg(student.gpa) as avg_gpa, min(student.gpa) as min_gpa from

apply join student on apply.sid = student.sid group by apply.cname;

CNAME	MAX(GPA)	MIN(GPA)	AVG(GPA)
Berkeley	3.9	3.6	3.733333333333333333333333333333333333
Cornell	3.9	2.9	3.366666666666666666666666666666666667
Stanford	3.9	2.9	3.683333333333333333333333333333333333
MIT	3.9	3.4	3.675

25. Find how many students have the same GPA among all students. (provide this frequency in two-column table as GPA 3.9 is 4 times, GPA 2.9 is 2 times)

Ans: select gpa, count(sid) as no_of_samegpa from student group by gpa;

GPA	NO_OF_SAMEGPA
3.9	4
3.7	1
2.9	2
3.6	1
3.8	1
3.5	1
3.4	2

26. Find how many application of each major are rejected and accepted.

Ans: select major, decision, count(*) from apply group by decision, major;

MAJOR	DECISION	COUNT(*)
EE	N	2
bioengineering	Y	1
history	Y	2
CS	N	2
CS	Y	5
biology	Y	1
marine biology	N	1
EE	Y	1
biology	N	1
bioengineering	N	1
history	N	1
psychology	Y	1

27. Find out the acceptance rate for each college. (Acceptance Rate is the percentage of the number application accepted w. r. t. the number of application received)

Ans: select cname, count(case when decision='Y' then 1 END) / count(decision) * 100 as acceptance_rate from apply group by cname;

CNAME	ACCEPTANCE_RATE
Berkeley	66.666666666666666666666666666666666666667
Cornell	50
Stanford	66.666666666666666666666666666666666666667
MIT	50