SQL-Based Analysis of Student Academic Data

ANALYSIS

➤ Fetch the details of the youngest student.

SELECT * FROM student ORDER BY age desc limit 1;

school	sex	age	address	famsize	Parrent_status	Mother_edu
SM	F	25	NULL	NULL	NULL	NULL

o Here, the youngest student is 22 years old.

➤ How many students are there of each gender?
SELECT sex, count(*) as Total FROM student GROUP BY sex;

sex	Total
F	210
M	187

o Here, there are 210 female students and 187 male students.

➤ What's the total count of residential addresses for the students?
SELECT address,count(*) as Count FROM student where address='R' GROUP BY address ;

address	Count
R	88

o Here, there are 88 residential addresses for the students.

➢ How many parents of students are living together?

SELECT Parrent_status,count(*) as Count FROM student where Parrent_status='T' GROUP BY Parrent_status ;

Parrent_status	Count
T	354

o Here, there are 354 students whose parents are living together.

➢ Which school has the most students?

SELECT school,count(*) as Count FROM student GROUP BY school ORDER BY Count desc limit 1 ;

school	Count
GP	349

o GP school has the highest number of students, with a total of 349.

➢ What is the average health status of the students?

SELECT avg(health_status) as avg_health_status FROM student;

	avg_health_status
▶	3.5544

○ Here, the average student health score is 3.5544.

➢ How many students have mothers with higher education?

SELECT Mother_edu,count(*) as count FROM student GROUP BY Mother_edu ORDER BY count desc limit 1;

	Mother_edu	count
▶	4	131

○ Here, there are 131 students whose mothers have higher education.

➢ What is the number of students whose mothers are not employed?

SELECT Mother_job,count(*) as count FROM student Where Mother_job='at_home' GROUP BY Mother_job ;

	Mother_job	count
▶	at_home	59

○ There are 59 students whose mothers are at home.

➤ Which student has taken more leave?

SELECT* FROM student ORDER BY absences desc limit 1;

school	sex	age	address	famsize	Parrent_status	Mother_edu	Father_edu	Mother_job	Father_job	reason_to_chose_school	guardian	traveltime	weekly_studytime	failures	extra_edu_supp
GP	F	18	R	GT3	A	3	2	other	services	home	mother	2	2	0	no

internet_access	romantic_relationship	Family_quality_reln	freetime_after_school	goout_with_friends	workday_alcohol_consum	weekend_alcohol_consum	health_status	absences	G1	G2	G3
yes	yes	4	1	1	1	1	5	75	10	9	9

o Here, a female student took the most leave, totaling 75 leaves.

➤ What is the number of students who have guardians other than their parents?

SELECT guardian,count(*) as count FROM student Where guardian='other' GROUP BY guardian;

guardian	count
▶ other	32

o Here, 32 students have guardians other than their parents.

➤ How many students are without family support?

SELECT family_edu_supp,count(*) as count FROM student WHERE family_edu_supp='no' GROUP BY family_edu_supp ;

	family_edu_supp	count
▶	no	153

o There are 153 students without family support.

➢ What is the total number of students participating in extracurricular activities?

SELECT extra_curr_activities, count(*) as count FROM student WHERE extra_curr_activities='yes' GROUP BY extra_curr_activities ;

	extra_curr_activities	count
▶	yes	201

o There are 201 students participating in extracurricular activities.

➢ Number of students based on age level.

SELECT

  CASE

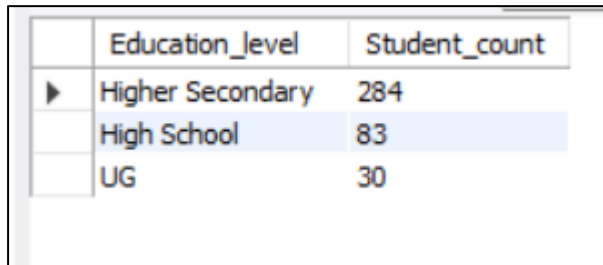WHEN age<16 THEN "High School"

WHEN age between 16 and 18 THEN "Higher Secondary"

ELSE "UG"

END as Education_level,

count(*) as Student_count FROM student GROUP BY
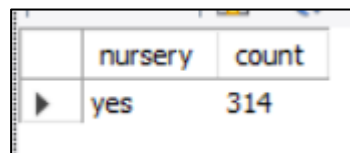Education_level;

	Education_level	Student_count
▶	Higher Secondary	284
	High School	83
	UG	30

- o There are 284 higher secondary students, 83 high school students, and 30 undergraduate (UG) students.

- ➤ How many students in these schools started in nursery?
  SELECT nursery, count(*) as count FROM student WHERE nursery='yes' GROUP BY nursery ;

	nursery	count
▶	yes	314

- o There are 314 students in this school who started in nursery.

- ➤ How many male and female students chose the school for each reason?
  SELECT sex,reason_to_chose_school,count(*) as count FROM student GROUP BY sex,reason_to_chose_school;

sex	reason_to_chose_school	count
F	course	72
F	other	18
F	home	53
M	reputation	40
M	home	56
F	reputation	65
M	course	73
M	other	18
F	NULL	2

○ When choosing a school, 72 females and 73 males selected it for its course offerings; 65 females and 40 males chose it for its reputation; 53 females and 56 males for its proximity to home; and 18 females and 18 males cited other reasons.

- **PROCEDURE-1**

DELIMITER //

CREATE PROCEDURE GetStudents(IN reason VARCHAR(25))

BEGIN

SELECT * FROM Student WHERE reason_to_chose_school = reason;

END //

DELIMITER ;

CALL GetStudents('Course');

school	sex	age	address	famsize	Parrent_status	Mother_edu	Father_edu	Mother_job	Father_job	reason_to_chose_school	guardian	traveltime	weekly_studytime	failures	extra_edu_supp	famil
GP	F	18	U	GT3	A	4	4	at_home	teacher	course	mother	2	2	0	yes	no
GP	F	17	U	GT3	T	1	1	at_home	other	course	father	1	2	0	no	yes
GP	F	15	U	LE3	T	1	1	at_home	other	other	mother	1	2	3	yes	no
GP	F	15	U	GT3	T	4	2	health	services	home	mother	1	3	0	no	yes
GP	F	16	U	GT3	T	3	3	other	other	home	father	1	2	0	no	yes
GP	M	16	U	LE3	T	4	3	services	other	reputation	mother	1	2	0	no	yes
GP	M	16	U	LE3	T	2	2	other	other	home	mother	1	2	0	no	no
GP	F	17	U	GT3	A	4	4	other	teacher	home	mother	2	2	0	yes	yes
GP	M	15	U	LE3	A	3	2	services	other	home	mother	1	2	0	no	yes
GP	M	15	U	GT3	T	3	4	other	other	home	mother	1	2	0	no	yes
GP	F	15	U	GT3	T	4	4	teacher	health	reputation	mother	1	2	0	no	yes
GP	F	15	U	GT3	T	2	1	services	other	reputation	father	3	3	0	no	yes
GP	M	15	U	LE3	T	4	4	health	services	course	father	1	1	0	no	yes
GP	M	15	U	GT3	T	4	3	teacher	other	course	mother	2	2	0	no	yes
GP	M	15	U	GT3	A	2	2	other	other	home	other	1	3	0	no	yes
GP	F	16	U	GT3	T	4	4	health	other	home	mother	1	1	0	no	yes
GP	F	16	U	GT3	T	4	4	services	services	reputation	mother	1	3	0	no	yes
GP	F	16	U	GT3	T	3	3	other	other	reputation	mother	3	2	0	yes	yes
GP	M	17	U	GT3	T	3	2	services	services	course	mother	1	1	3	no	yes
GP	M	16	U	LE3	T	4	3	health	other	home	father	1	1	0	no	no
GP	M	15	U	GT3	T	4	3	teacher	other	reputation	mother	1	2	0	no	no
GP	M	15	U	GT3	T	4	4	health	health	other	father	1	1	0	no	yes
GP	M	16	U	LE3	T	4	2	teacher	other	course	mother	1	2	0	no	no
GP	M	16	U	LE3	T	2	2	other	other	reputation	mother	2	2	0	no	yes

o There are 145 students who were chosen by course.

• PROCEDURE-2

DELIMITER//

create procedure max_travel_time (out max_travel INT)

BEGIN

SELECT max(traveltime) into max_travel FROM student ;

END //

DELIMITER ;

call max_travel_time(@M);

SELECT @M;

	@M
▶	4

o Here maximum taveltime of student is 4.

• TRIGGER

DELIMITER //

CREATE trigger before_school_insert before insert on student

for each row

BEGIN

if new.age<0 or new.age>80 then

    set new.age="25";

    END if;

END //

DELIMITER;

INSERT into student(school,sex,age) values("SM","F",100);

SELECT school,sex,age FROM student WHERE school="SM";

	school	sex	age
▶	SM	F	0
	SM	F	25

o Here, a new row has been inserted. The school is SM, the sex is Female, and the age is 25.