ABC college wants to develop a University Management System (UMS) to store information on students who join their college. The database should contain

• Student’s personal information as well as student’s academic details.

• It should store information on subjects taught at the university in various departments.

• It should also store marks obtained by each student in each semester subject wise as well as the GPA for each semester.

* create table student(reg\_no int(20) primary key, name varchar(20) not null, branch varchar(20) not null, contact int(20) not null, dob date not null, date\_of\_joining date not null, address varchar(50) not null, email\_id varchar(50) not null);

Query OK, 0 rows affected, 2 warnings (0.22 sec)

mysql> desc student;

+-----------------+-------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+-----------------+-------------+------+-----+---------+-------+

| reg\_no | int | NO | PRI | NULL | |

| name | varchar(20) | NO | | NULL | |

| branch | varchar(20) | NO | | NULL | |

| contact | int | NO | | NULL | |

| dob | date | NO | | NULL | |

| date\_of\_joining | date | NO | | NULL | |

| address | varchar(50) | NO | | NULL | |

| email\_id | varchar(50) | NO | | NULL | |

+-----------------+-------------+------+-----+---------+-------+

* create table subject(sub\_code varchar(20) primary key, sub1 int(5) not null, sub2 int(5) not null, sub3 int(5) not null, sem int(5) not null, reg\_no int, foreign key(reg\_no) references student(reg\_no));

mysql> desc subject;

+----------+-------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+----------+-------------+------+-----+---------+-------+

| sub\_code | varchar(20) | NO | PRI | NULL | |

| sub1 | int | NO | | NULL | |

| sub2 | int | NO | | NULL | |

| sub3 | int | NO | | NULL | |

| sem | int | NO | | NULL | |

| reg\_no | int | YES | MUL | NULL | |

+----------+-------------+------+-----+---------+-------+

6 rows in set (0.00 sec)

mysql> insert into student values(1, 'vaishnavi', 'BCA', 7507835, '2003-05-24', '2022-11-08', 'pune', 'vaishnavi@gmail.com');

Query OK, 1 row affected (0.07 sec)

mysql> select \* from student;

+--------+-----------+--------+---------+------------+-----------------+---------+---------------------+

| reg\_no | name | branch | contact | dob | date\_of\_joining | address | email\_id |

+--------+-----------+--------+---------+------------+-----------------+---------+---------------------+

| 1 | vaishnavi | BCA | 7507835 | 2003-05-24 | 2022-11-08 | pune | vaishnavi@gmail.com |

+--------+-----------+--------+---------+------------+-----------------+---------+---------------------+

1 row in set (0.00 sec)

mysql> insert into subject values('BCA-101',85,88,76,5,1);

Query OK, 1 row affected (0.13 sec)

mysql> select \* from subject;

+----------+------+------+------+-----+--------+

| sub\_code | sub1 | sub2 | sub3 | sem | reg\_no |

+----------+------+------+------+-----+--------+

| BCA-101 | 85 | 88 | 76 | 5 | 1 |

+----------+------+------+------+-----+--------+

1 row in set (0.00 sec)

mysql> insert into student values(2, 'priya', 'BCA', 998541, '2002-05-07', '2014-10-09', 'pune', 'priya@gmail.com');

Query OK, 1 row affected (0.08 sec)

mysql> select \* from student;

+--------+-----------+--------+---------+------------+-----------------+---------+---------------------+

| reg\_no | name | branch | contact | dob | date\_of\_joining | address | email\_id |

+--------+-----------+--------+---------+------------+-----------------+---------+---------------------+

| 1 | vaishnavi | BCA | 7507835 | 2003-05-24 | 2022-11-08 | pune | vaishnavi@gmail.com |

| 2 | priya | BCA | 998541 | 2002-05-07 | 2014-10-09 | pune | priya@gmail.com |

+--------+-----------+--------+---------+------------+-----------------+---------+---------------------+

2 rows in set (0.00 sec)

mysql> insert into subject values('BCA-102',95,80,60,5,2);

Query OK, 1 row affected (0.26 sec)

mysql> select \* from subject;

+----------+------+------+------+-----+--------+

| sub\_code | sub1 | sub2 | sub3 | sem | reg\_no |

+----------+------+------+------+-----+--------+

| BCA-101 | 85 | 88 | 76 | 5 | 1 |

| BCA-102 | 95 | 80 | 60 | 5 | 2 |

+----------+------+------+------+-----+--------+

2 rows in set (0.00 sec)

mysql> insert into student values(3, 'priti', 'BCA', 745451, '2000-06-17', '2012-11-09', 'pune', 'priti@gmail.com');

Query OK, 1 row affected (0.10 sec)

mysql> select \* from student;

+--------+-----------+--------+---------+------------+-----------------+---------+---------------------+

| reg\_no | name | branch | contact | dob | date\_of\_joining | address | email\_id |

+--------+-----------+--------+---------+------------+-----------------+---------+---------------------+

| 1 | vaishnavi | BCA | 7507835 | 2003-05-24 | 2022-11-08 | pune | vaishnavi@gmail.com |

| 2 | priya | BCA | 998541 | 2002-05-07 | 2014-10-09 | pune | priya@gmail.com |

| 3 | priti | BCA | 745451 | 2000-06-17 | 2012-11-09 | pune | priti@gmail.com |

+--------+-----------+--------+---------+------------+-----------------+---------+---------------------+

3 rows in set (0.00 sec)

mysql> insert into subject values('BCA-103',67,55,76,5,3);

Query OK, 1 row affected (0.07 sec)

mysql> select \* from subject;

+----------+------+------+------+-----+--------+

| sub\_code | sub1 | sub2 | sub3 | sem | reg\_no |

+----------+------+------+------+-----+--------+

| BCA-101 | 85 | 88 | 76 | 5 | 1 |

| BCA-102 | 95 | 80 | 60 | 5 | 2 |

| BCA-103 | 67 | 55 | 76 | 5 | 3 |

+----------+------+------+------+-----+--------+

3 rows in set (0.00 sec)

mysql> insert into student values(4, 'shweta', 'BCA', 998546, '2001-04-09', '2011-07-02', 'pune', 'shweta@gmail.com');

Query OK, 1 row affected (0.08 sec)

mysql> select \* from student;

+--------+-----------+--------+---------+------------+-----------------+---------+---------------------+

| reg\_no | name | branch | contact | dob | date\_of\_joining | address | email\_id |

+--------+-----------+--------+---------+------------+-----------------+---------+---------------------+

| 1 | vaishnavi | BCA | 7507835 | 2003-05-24 | 2022-11-08 | pune | vaishnavi@gmail.com |

| 2 | priya | BCA | 998541 | 2002-05-07 | 2014-10-09 | pune | priya@gmail.com |

| 3 | priti | BCA | 745451 | 2000-06-17 | 2012-11-09 | pune | priti@gmail.com |

| 4 | shweta | BCA | 998546 | 2001-04-09 | 2011-07-02 | pune | shweta@gmail.com |

+--------+-----------+--------+---------+------------+-----------------+---------+---------------------+

4 rows in set (0.00 sec)

mysql> insert into subject values('BCA-104',88,65,46,5,4);

Query OK, 1 row affected (0.05 sec)

mysql> select \* from subject;

+----------+------+------+------+-----+--------+

| sub\_code | sub1 | sub2 | sub3 | sem | reg\_no |

+----------+------+------+------+-----+--------+

| BCA-101 | 85 | 88 | 76 | 5 | 1 |

| BCA-102 | 95 | 80 | 60 | 5 | 2 |

| BCA-103 | 67 | 55 | 76 | 5 | 3 |

| BCA-104 | 88 | 65 | 46 | 5 | 4 |

+----------+------+------+------+-----+--------+

4 rows in set (0.00 sec)

mysql> insert into student values(5, 'kajal', 'BCA', 98220468, '2004-06-15', '2022-08-12', 'kolkata', 'kajal@gmail.com');

Query OK, 1 row affected (0.05 sec)

mysql> select \* from student;

+--------+-----------+--------+----------+------------+-----------------+---------+---------------------+

| reg\_no | name | branch | contact | dob | date\_of\_joining | address | email\_id |

+--------+-----------+--------+----------+------------+-----------------+---------+---------------------+

| 1 | vaishnavi | BCA | 7507835 | 2003-05-24 | 2022-11-08 | pune | vaishnavi@gmail.com |

| 2 | priya | BCA | 998541 | 2002-05-07 | 2014-10-09 | pune | priya@gmail.com |

| 3 | priti | BCA | 745451 | 2000-06-17 | 2012-11-09 | pune | priti@gmail.com |

| 4 | shweta | BCA | 998546 | 2001-04-09 | 2011-07-02 | pune | shweta@gmail.com |

| 5 | kajal | BCA | 98220468 | 2004-06-15 | 2022-08-12 | kolkata | kajal@gmail.com |

+--------+-----------+--------+----------+------------+-----------------+---------+---------------------+

5 rows in set (0.00 sec)

mysql> insert into subject values('BCA-105',82,76,99,5,5);

Query OK, 1 row affected (0.05 sec)

mysql> select \* from subject;

+----------+------+------+------+-----+--------+

| sub\_code | sub1 | sub2 | sub3 | sem | reg\_no |

+----------+------+------+------+-----+--------+

| BCA-101 | 85 | 88 | 76 | 5 | 1 |

| BCA-102 | 95 | 80 | 60 | 5 | 2 |

| BCA-103 | 67 | 55 | 76 | 5 | 3 |

| BCA-104 | 88 | 65 | 46 | 5 | 4 |

| BCA-105 | 82 | 76 | 99 | 5 | 5 |

+----------+------+------+------+-----+--------+

5 rows in set (0.00 sec)

* mysql> select sub\_code, sum(sub1 +sub2+sub3) as total\_marks from Subject group by sub\_code;

+----------+-------------+

| sub\_code | total\_marks |

+----------+-------------+

| BCA-101 | 249 |

| BCA-102 | 235 |

| BCA-103 | 198 |

| BCA-104 | 199 |

| BCA-105 | 257 |

+----------+-------------+

* select sub\_code,(sub1+sub2+sub3)/3 as average from Subject GROUP BY sub\_code;

+----------+---------+

| sub\_code | average |

+----------+---------+

| BCA-101 | 83.0000 |

| BCA-102 | 78.3333 |

| BCA-103 | 66.0000 |

| BCA-104 | 66.3333 |

| BCA-105 | 85.6667 |

+----------+---------+

5 rows in set (0.04 sec)

* select sub\_code,((sub1+sub2+sub3)/300)\*100 as percentage from Subject GROUP BY sub\_code;

+----------+------------+

| sub\_code | percentage |

+----------+------------+

| BCA-101 | 83.0000 |

| BCA-102 | 78.3333 |

| BCA-103 | 66.0000 |

| BCA-104 | 66.3333 |

| BCA-105 | 85.6667 |

+----------+------------+

5 rows in set (0.00 sec)

* mysql> SELECT student.name, subject.sem, subject.sub\_code, ((subject.sub1+ subject.sub2+ subject.sub3) / 300) \* 100 AS percentage, student.branch FROM student

-> INNER JOIN subject ON student.reg\_no = subject.reg\_no;

+-----------+-----+----------+------------+--------+

| name | sem | sub\_code | percentage | branch |

+-----------+-----+----------+------------+--------+

| vaishnavi | 5 | BCA-101 | 83.0000 | BCA |

| priya | 5 | BCA-102 | 78.3333 | BCA |

| priti | 5 | BCA-103 | 66.0000 | BCA |

| shweta | 5 | BCA-104 | 66.3333 | BCA |

| kajal | 5 | BCA-105 | 85.6667 | BCA |

+-----------+-----+----------+------------+--------+