

**Problem statement:**

Write programs in Java to create three-tier applications using JSP and Databases

1. for conducting on-line examination.
2. for displaying student mark list. Assume that student information is available in database which has been stored in a database server.

I. Procedure for creating design of client and server program

1. Design the HTML page (Exam\_Client.html) with the following
  - i) Create a form to get the input from the user.
  - ii) Use radio buttons to make various options for the questions.
  - iii) Set the URL of the server (Exam\_Server.jsp) as the value of the action attribute.
  - iv) Use submit button to invoke the server and send the form data to the server.
2. Create the JSP file with the following
  - i) Read the input from the client.
  - ii) Retrieve the answers from the database.
  - iii) Match the answers from the user with the correct answers from the database table.
  - iv) For each correct answer increment the mark by 1.
  - v) Server displays the mark and result to the client as a response.

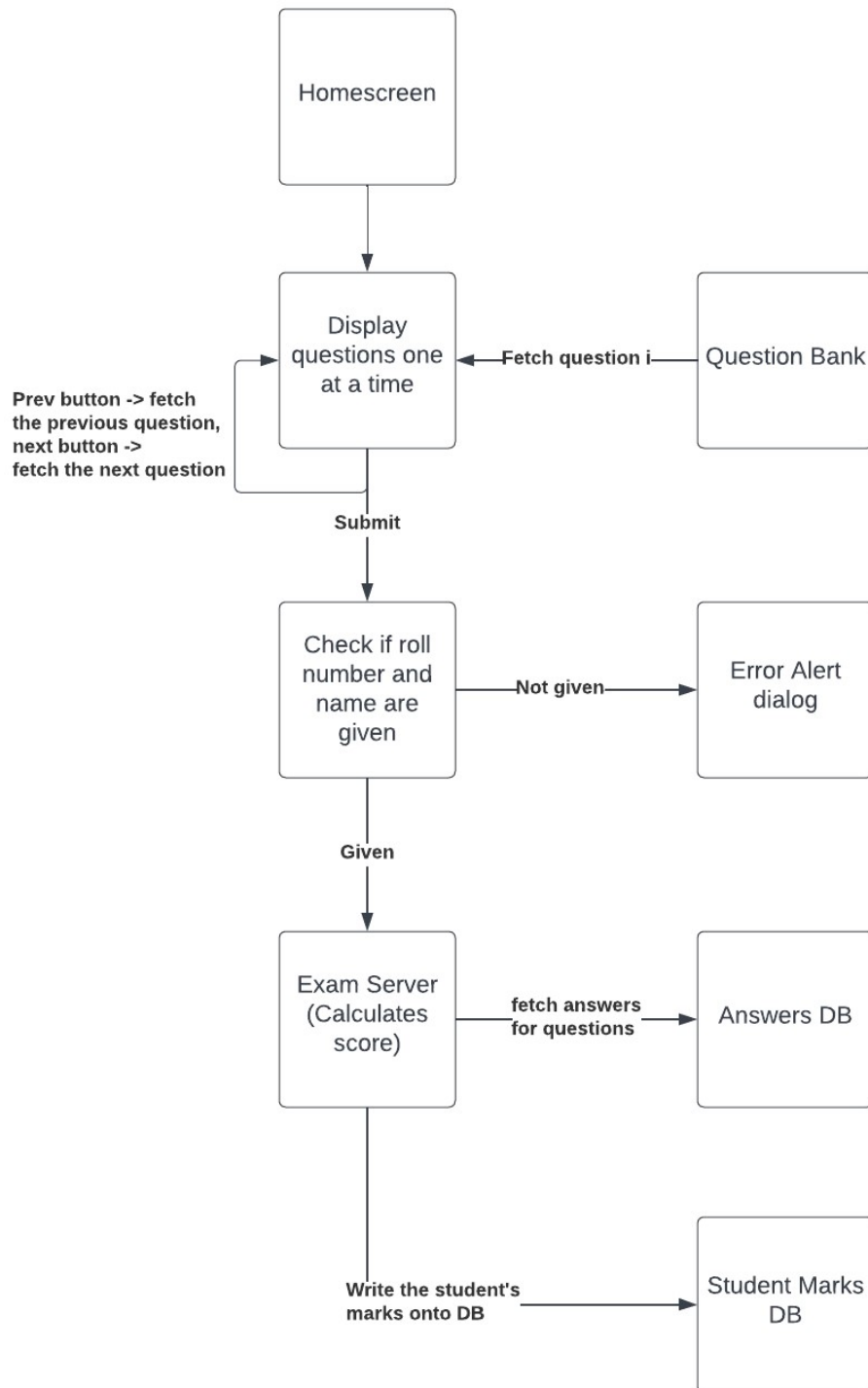
II. Form Design

Step 1: Create a database in MS-Access or MySQL. For instance, you have to create a student database (min 15 students) in MS-Access or MySQL. Inside this database create a table with following fields.

Step 2: Write a JSP document as following form format with style CSS format to conduct online exam and Validation (The form validation is also done in above JSP script)

Step3: After inputting the data appropriately, Click the finish button. And a Mark sheet will be displayed with style CSS format as follows and also update the table in database.

## Design: (Block diagram)



## Tool used:

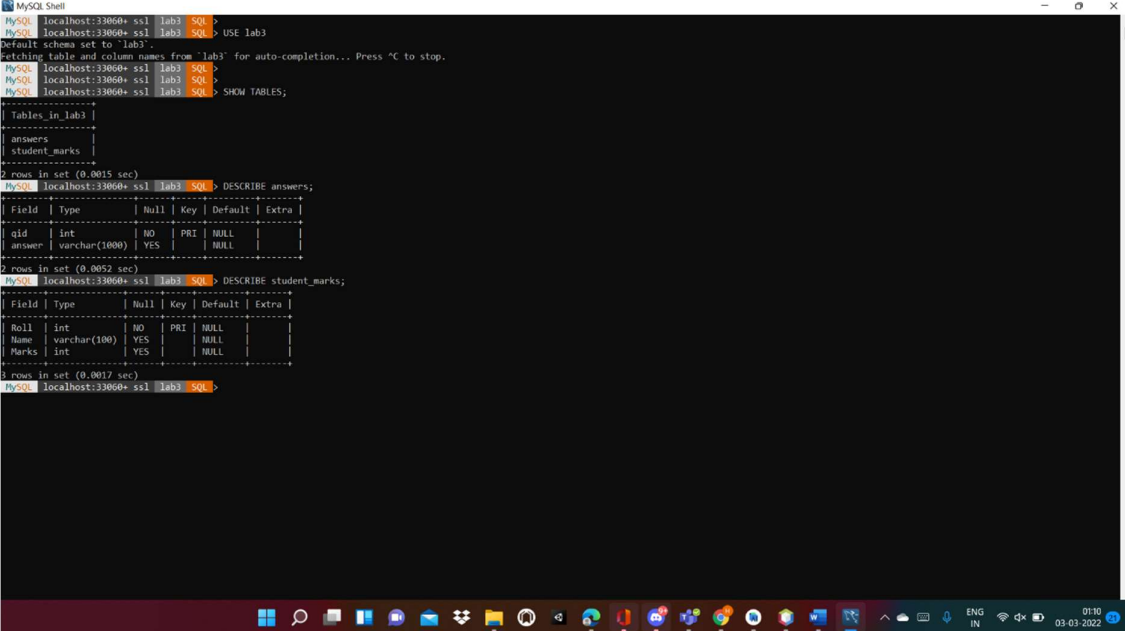
- Apache Tomcat
- NetBeans IDE
- Java JDK
- MySQL
- JSP
- HTML
- CSS
- Javascript

## Code:

<https://drive.google.com/drive/folders/1VtAZnXSYqiO8Dz6VLzxZ48OtIxxQ59Vm?usp=sharing>

## Screenshots of application:

Database structure:



```
MySQL Shell
mysql> localhost:33060> ssl lab3 SQL >
mysql> localhost:33060> ssl lab3 SQL > USE lab3
Default schema set to 'lab3'.
mysql> localhost:33060> ssl lab3 SQL >
mysql> localhost:33060> ssl lab3 SQL > SHOW TABLES;
+-----+
| Tables_in_lab3 |
+-----+
| answers        |
| student_marks  |
+-----+
2 rows in set (0.0015 sec)

mysql> localhost:33060> ssl lab3 SQL > DESCRIBE answers;
+-----+
| Field | Type          | Null | Key | Default | Extra |
+-----+
| qid   | int           | NO   | PRI | NULL    |       |
| answer | varchar(1000) | YES  |     | NULL    |       |
+-----+
2 rows in set (0.0052 sec)

mysql> localhost:33060> ssl lab3 SQL > DESCRIBE student_marks;
+-----+
| Field | Type          | Null | Key | Default | Extra |
+-----+
| Roll  | int           | NO   | PRI | NULL    |       |
| Name  | varchar(100)  | YES  |     | NULL    |       |
| Marks | int           | YES  |     | NULL    |       |
+-----+
3 rows in set (0.0017 sec)

mysql> localhost:33060> ssl lab3 SQL >
```

Answers Table:

```
MySQL Shell
mysql> use lab3;
mysql> describe answers;
+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+
| qid   | int  | NO   | PRI | NULL    |       |
| answer | varchar(1000) | YES |     | NULL    |       |
+-----+
2 rows in set (0.0015 sec)

mysql> describe student_marks;
+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+
| Roll  | int  | NO   | PRI | NULL    |       |
| Name  | varchar(100) | YES |     | NULL    |       |
| Marks | int  | YES  |     | NULL    |       |
+-----+
3 rows in set (0.0017 sec)

mysql> select * from answers;
+----+-----+
| qid | answer |
+----+-----+
| 1   | All mentioned above |
| 2   | True |
| 3   | GET method |
| 4   | All of the above |
| 5   | writing-mode |
+----+-----+
5 rows in set (0.0254 sec)

mysql>
```

Students Table:

```
MySQL Shell
mysql> insert into student_marks values(1, "Ram", 3);
Query OK, 1 row affected (0.0066 sec)

mysql> insert into student_marks values(2, "Aman", 2);
Query OK, 1 row affected (0.0067 sec)

mysql> insert into student_marks values(3, "Rajan", 4);
Query OK, 1 row affected (0.0059 sec)

mysql> insert into student_marks values(4, "Kumar", 5);
Query OK, 1 row affected (0.0057 sec)

mysql> insert into student_marks values(5, "Priya", 4);
Query OK, 1 row affected (0.0054 sec)

mysql> insert into student_marks values(6, "Kavya", 3);
Query OK, 1 row affected (0.0094 sec)

mysql> insert into student_marks values(7, "Rahul", 0);
Query OK, 1 row affected (0.0070 sec)

mysql> insert into student_marks values(8, "Ganesh", 1);
Query OK, 1 row affected (0.0048 sec)

mysql> insert into student_marks values(9, "Sai", 4);
Query OK, 1 row affected (0.0064 sec)

mysql> insert into student_marks values(10, "Varun", 2);
Query OK, 1 row affected (0.0075 sec)

mysql> insert into student_marks values(11, "Ankur", 1);
Query OK, 1 row affected (0.0060 sec)

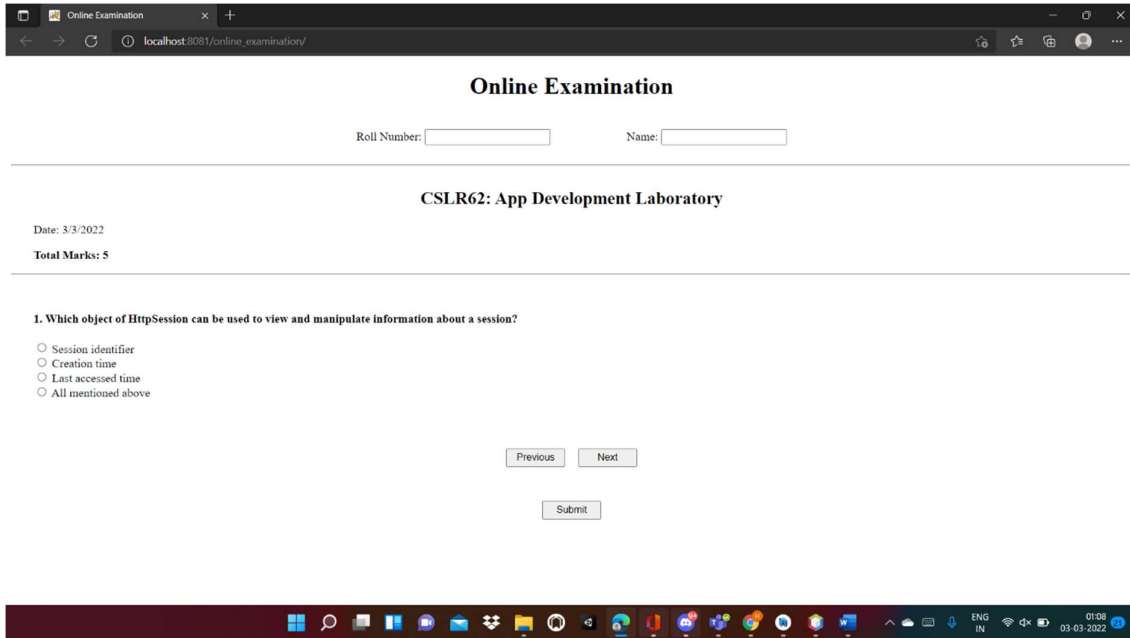
mysql> insert into student_marks values(12, "Vaasu", 3);
Query OK, 1 row affected (0.0070 sec)

mysql> insert into student_marks values(13, "Gokul", 3);
Query OK, 1 row affected (0.0065 sec)

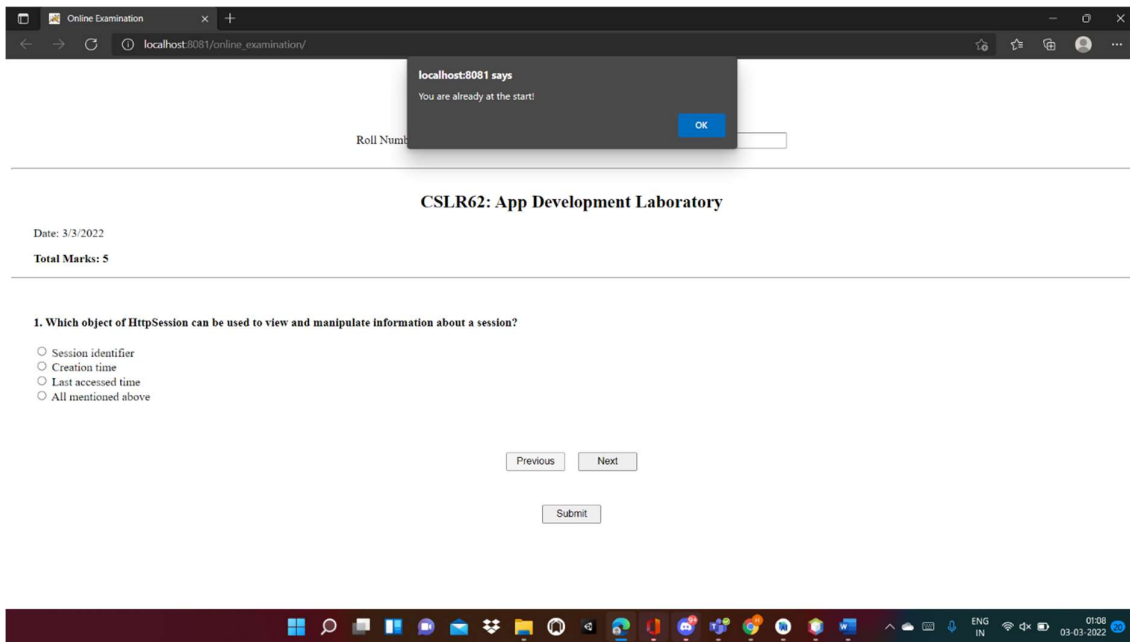
mysql> insert into student_marks values(14, "Anand", 2);
Query OK, 1 row affected (0.0062 sec)

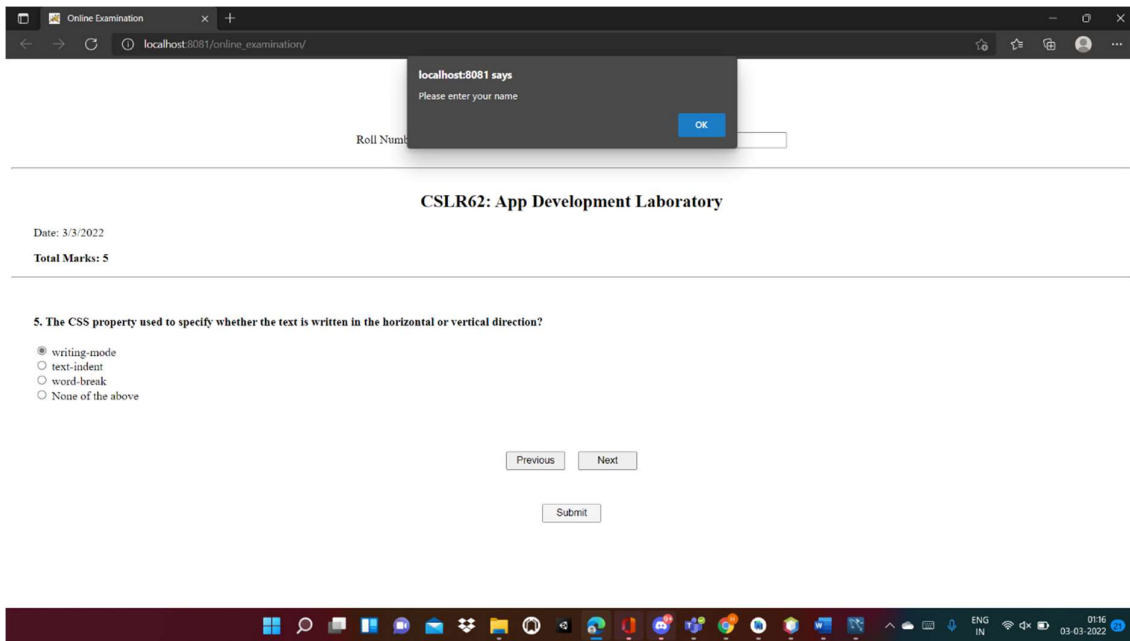
mysql> insert into student_marks values(15, "Sanjeev", 1);
Query OK, 1 row affected (0.0067 sec)

mysql> select * from student_marks;
+----+-----+-----+
| Roll | Name | Marks |
+----+-----+-----+
| 1   | Ram | 3 |
| 2   | Aman | 2 |
| 3   | Rajan | 4 |
| 4   | Kumar | 5 |
| 5   | Priya | 4 |
| 6   | Kavya | 3 |
| 7   | Rahul | 0 |
| 8   | Ganesh | 1 |
| 9   | Sai | 4 |
| 10  | Varun | 2 |
| 11  | Ankur | 1 |
| 12  | Vaasu | 3 |
| 13  | Gokul | 3 |
| 14  | Anand | 2 |
| 15  | Sanjeev | 1 |
+----+-----+-----+
```

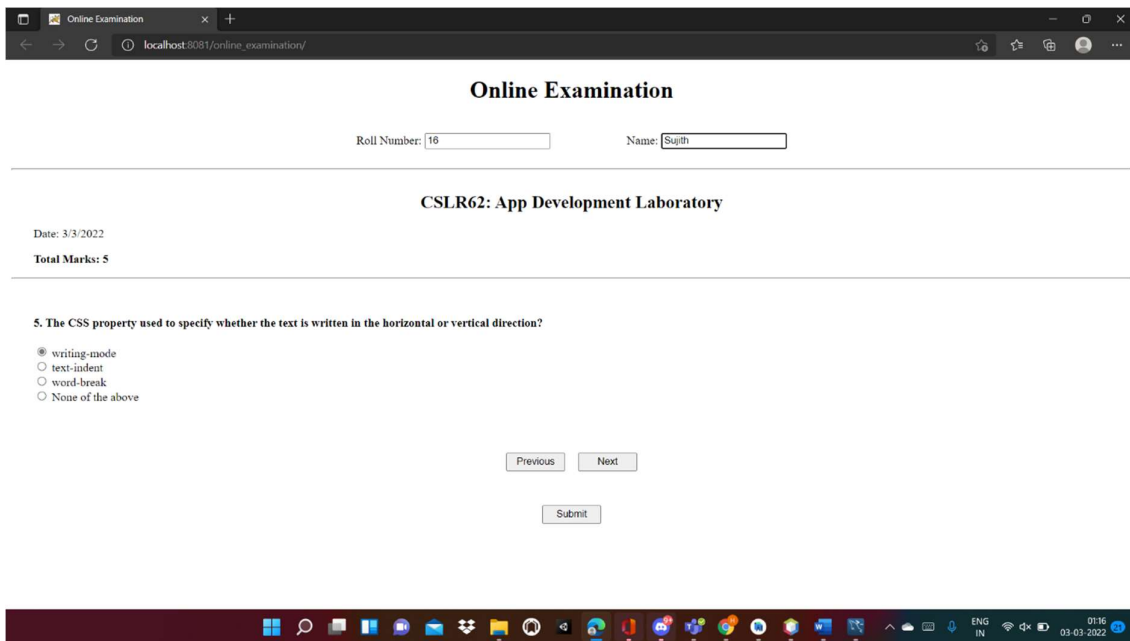


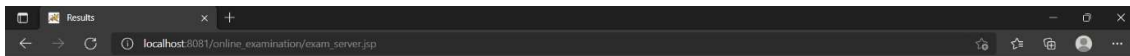
Clicking previous from first question:





Test taken by New user:





## Marks Scored

Roll	16
Name	Sujith
Marks	2



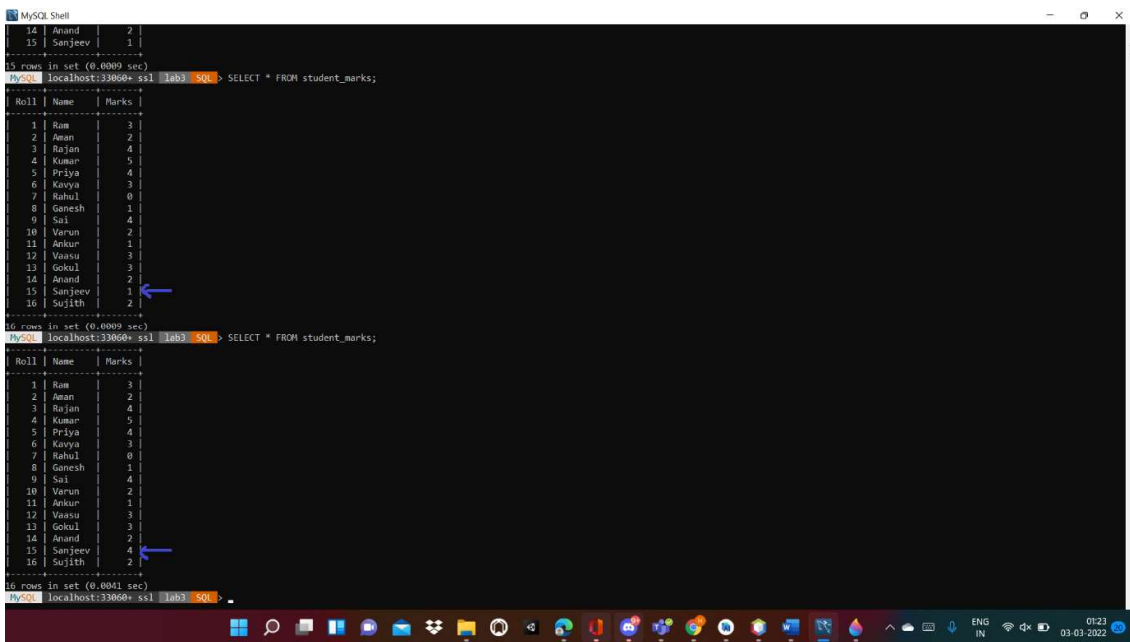
```
MySQL Shell
mysql> localhost:33060> ssl | lab3 SQL> INSERT INTO student_marks VALUES(15, "Sanjeev", 1);
Query OK, 1 row affected (0.0007 sec)
mysql> localhost:33060> ssl | lab3 SQL> SELECT * FROM student_marks;
+----+-----+-----+
| Roll | Name | Marks |
+----+-----+-----+
| 1 | Ram | 3 |
| 2 | Aman | 2 |
| 3 | Rajan | 4 |
| 4 | Kumar | 5 |
| 5 | Priya | 4 |
| 6 | Kavya | 3 |
| 7 | Rahul | 0 |
| 8 | Ganesh | 1 |
| 9 | Sai | 4 |
| 10 | Varun | 2 |
| 11 | Ankur | 1 |
| 12 | Vaasu | 3 |
| 13 | Gokul | 3 |
| 14 | Anand | 2 |
| 15 | Sanjeev | 1 |
+----+-----+-----+
15 rows in set (0.0009 sec)
mysql> localhost:33060> ssl | lab3 SQL> SELECT * FROM student_marks;
+----+-----+-----+
| Roll | Name | Marks |
+----+-----+-----+
| 1 | Ram | 3 |
| 2 | Aman | 2 |
| 3 | Rajan | 4 |
| 4 | Kumar | 5 |
| 5 | Priya | 4 |
| 6 | Kavya | 3 |
| 7 | Rahul | 0 |
| 8 | Ganesh | 1 |
| 9 | Sai | 4 |
| 10 | Varun | 2 |
| 11 | Ankur | 1 |
| 12 | Vaasu | 3 |
| 13 | Gokul | 3 |
| 14 | Anand | 2 |
| 15 | Sanjeev | 1 |
| 16 | Sujith | 2 |
+----+-----+-----+
16 rows in set (0.0009 sec)
mysql> localhost:33060> ssl | lab3 SQL>
```

Test taken by existing user:



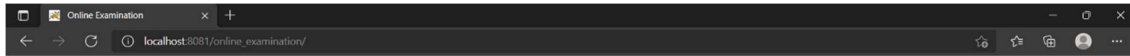
### Marks Scored

Roll	15
Name	Sanjeev
Marks	4



Test taken by existing user but gives wrong name/roll number:





## Online Examination

Roll Number:  Name:

### CSLR62: App Development Laboratory

Date: 3/3/2022

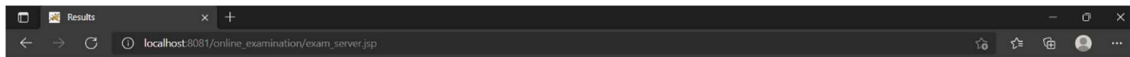
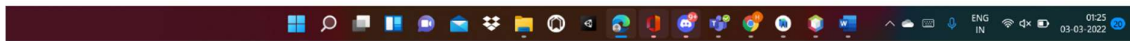
Total Marks: 5

5. The CSS property used to specify whether the text is written in the horizontal or vertical direction?

- ☐ writing-mode
- ☐ text-indent
- ☐ word-break
- ☒ None of the above

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## Marks Scored

Roll	15
Name	Hi
Marks	0

