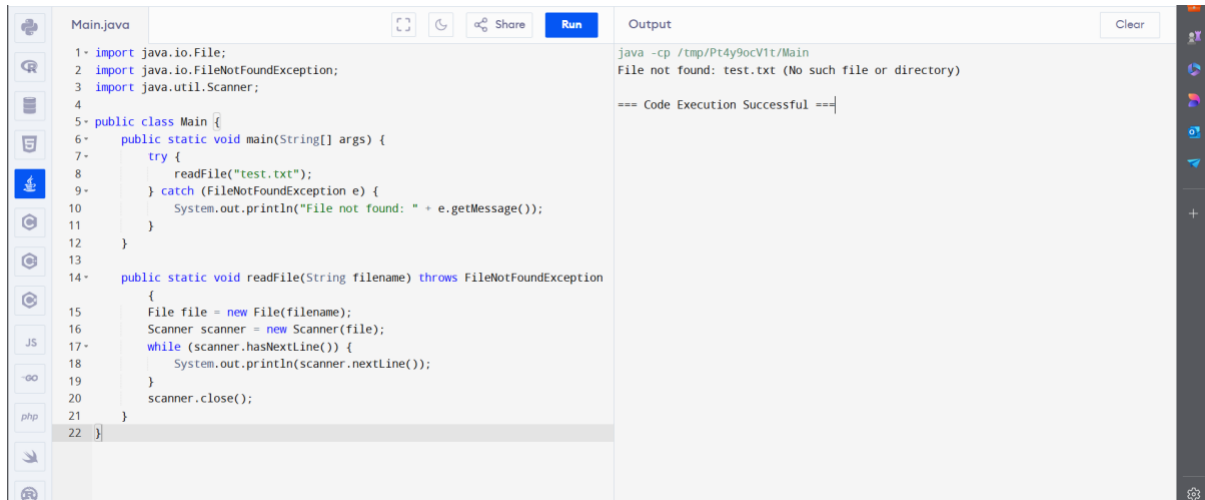


## JAVA ASSIGNMENT 6

1) Write a Java program to create a method that reads a file and throws an exception if the file is not found




```
1- import java.io.File;
2- import java.io.FileNotFoundException;
3- import java.util.Scanner;
4
5- public class Main {
6-     public static void main(String[] args) {
7-         try {
8-             readFile("test.txt");
9-         } catch (FileNotFoundException e) {
10-             System.out.println("File not found: " + e.getMessage());
11-         }
12-     }
13
14-     public static void readFile(String filename) throws FileNotFoundException
15-     {
16-         File file = new File(filename);
17-         Scanner scanner = new Scanner(file);
18-         while (scanner.hasNextLine()) {
19-             System.out.println(scanner.nextLine());
20-         }
21-         scanner.close();
22-     }
23 }
```

Output

```
java -cp /tmp/Pt4y9ocV1t/Main
File not found: test.txt (No such file or directory)

=== Code Execution Successful ===
```

2) Write a Java program to create a class called Student with private instance variables student\_id, student\_name, and grades. Provide public getter and setter methods to access and modify the student\_id and student\_name variables. However, provide a method called addGrade() that allows adding a grade to the grades variable while performing additional Validation.



```
1- import java.util.ArrayList;
2- import java.util.List;
3
4- public class Student {
5-     private String student_id;
6-     private String student_name;
7-     private List<Double> grades;
8
9-     public Student(String student_id, String student_name) {
10-         this.student_id = student_id;
11-         this.student_name = student_name;
12-         this.grades = new ArrayList<>();
13-     }
14
15-     public String getStudent_id() {
16-         return student_id;
17-     }
18
19-     public void setStudent_id(String student_id) {
20-         this.student_id = student_id;
21-     }
22
23-     public String getStudent_name() {
24-         return student_name;
25-     }
26
27-     public void setStudent_name(String student_name) {
```

Output

```
java -cp /tmp/Pt4y9ocV1t/Main
File not found: test.txt (No such file or directory)

=== Code Execution Successful ===
```

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Main.java

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```
public List<Double> getGrades() {
    return grades;
}

public void addGrade(double grade) {
    if (grade >= 0.0 && grade <= 100.0) {
        grades.add(grade);
    } else {
        System.out.println("Invalid grade. Grade must be between 0.0 and 100.0.");
    }
}

public static void main(String[] args) {
    Student student = new Student("S1234", "John Doe");
    student.addGrade(90.5);
    student.addGrade(85.0);
    student.addGrade(-10.0); // Invalid grade
    student.addGrade(110.0); // Invalid grade

    System.out.println("Student ID: " + student.getStudent_id());
    System.out.println("Student Name: " + student.getStudent_name());
    System.out.println("Grades: " + student.getGrades());
}
```

Output

Clear

java -cp /tmp/Pt4y9ocV1t/Main
File not found: test.txt (No such file or directory)

=== Code Execution Successful ===

OUTPUT:

```
java -cp /tmp/mqNTHf62bR/Student
Invalid grade. Grade must be between 0.0 and 100.0.
Invalid grade. Grade must be between 0.0 and 100.0.
Student ID: S1234
Student Name: John Doe
Grades: [90.5, 85.0]
```

=== Code Execution Successful ===

3) Write a JavaFX application with a text input field and a button. When the button is clicked, display the text entered in the input field in a label.

The screenshot displays the Programiz Online Java Compiler interface. The top header includes the Programiz logo, a navigation bar with 'Premium Coding Courses by Programiz', and a 'Programiz PRO' button. The main workspace is divided into two panels: 'Main.java' on the left and 'Output' on the right.

**Main.java Code:**

```
1- import javafx.application.Application;
2- import javafx.geometry.Insets;
3- import javafx.geometry.Pos;
4- import javafx.scene.Scene;
5- import javafx.scene.control.Button;
6- import javafx.scene.control.Label;
7- import javafx.scene.control.TextField;
8- import javafx.scene.layout.VBox;
9- import javafx.stage.Stage;
10
11- public class JavaFXApp extends Application {
12
13-     @Override
14-     public void start(Stage primaryStage) {
15-         // Create a vertical box layout
16-         VBox root = new VBox(10);
17-         root.setPadding(new Insets(10));
18-         root.setAlignment(Pos.CENTER);
19
20-         // Create a text field
21-         TextField textField = new TextField();
22-         textField.setPromptText("Enter some text");
23
24-         // Create a label to display the text
25-         Label label = new Label();
26
27-         // Create a button
28-         Button button = new Button("Display Text");
29-         button.setOnAction(event -> {
30-             // Get the text from the text field and display it in the label
31-             String text = textField.getText();
32-             label.setText(text);
33-         });
34
35-         // Add the text field, button, and label to the layout
36-         root.getChildren().addAll(textField, button, label);
37
38-         // Create a scene and set it to the stage
39-         Scene scene = new Scene(root, 300, 200);
40-         primaryStage.setTitle("JavaFX App");
41-         primaryStage.setScene(scene);
42-         primaryStage.show();
43-     }
44
45-     public static void main(String[] args) {
46-         launch(args);
47-     }
48- }
```

**Output:**

```
java -cp /tmp/mqNTHf6ZbR/Student
Invalid grade. Grade must be between 0.0 and 100.0.
Invalid grade. Grade must be between 0.0 and 100.0.
Student ID: S1234
Student Name: John Doe
Grades: [90.5, 85.0]

=== Code Execution Successful ===
```