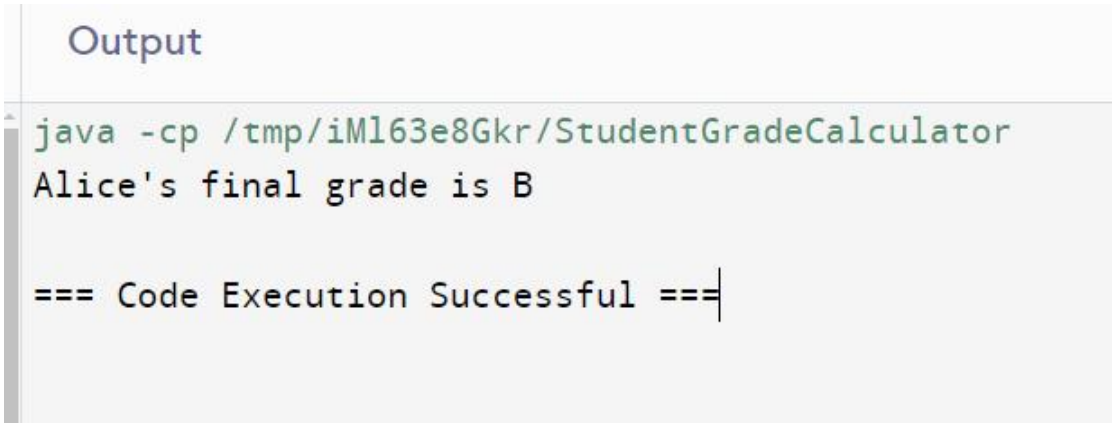
Assignment 6

1.Write a Java program to calculate the final grade of a student based on their scores in assignments, midterm, and final exam.
Variables: String studentName, int assignmentScore, int midtermScore, int finalExamScore, String finalGrade
Test case
// Input
studentName = "Alice";
assignmentScore = 85;
midtermScore = 78;
finalExamScore = 92;
// Expected Output: Alice's final grade is B.
Program:

```
import java.util.Scanner;
public class StudentGradeCalculator {
   public static void main(String[] args) {
      String studentName;
      int assignmentScore;
      int midtermScore;
      int finalExamScore;
      String finalGrade;
      studentName = "Alice";
      assignmentScore = 85;
      midtermScore = 78;
      finalExamScore = 92;
      finalGrade = calculateFinalGrade(assignmentScore, midtermScore, finalExamScore);
      System.out.println(studentName + "'s final grade is " + finalGrade);
   }
   public static String calculateFinalGrade(int assignmentScore, int midtermScore, int finalExamScore)
{
      double averageScore = (assignmentScore + midtermScore + finalExamScore) / 3.0;
      if (averageScore >= 90) {
         return "A";
      } else if (averageScore >= 80) {
         return "B";
      } else if (averageScore >= 70) {
         return "C";
      } else if (averageScore >= 60) {
         return "D";
      } else {
         return "F";
      }
   }
}
```

Output:



2. Write a Java program to calculate the mileage of a car given the distance traveled and fuel consumed.
Variables: String carModel, double distanceTraveled, double fuelConsumed, double mileage
Test Case:
// Input
carModel = "Toyota Camry";
distanceTraveled = 300;
fuelConsumed = 15;
// Expected Output: The mileage of Toyota Camry is 20.0 miles per gallon.
Program:

```
public class CarMileageCalculator {
   public static void main(String[] args) {
      String carModel;
      double distanceTraveled;
      double fuelConsumed;
      double mileage;
      carModel = "Toyota Camry";
      distanceTraveled = 300;
      fuelConsumed = 15;
      mileage = calculateMileage(distanceTraveled, fuelConsumed);
      System.out.println("The mileage of " + carModel + " is " + mileage + " miles per gallon");
   }
   public static double calculateMileage(double distanceTraveled, double fuelConsumed) {
      return distanceTraveled / fuelConsumed;
   }
}
```

Output:

Output

```
java -cp /tmp/sqbLteWhwB/CarMileageCalculator
The mileage of Toyota Camry is 20.0 miles per gallon

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

3. Write a Java program to calculate the fine for overdue books in a library. The fine is calculated based on the number of days overdue.
Variables: String bookTitle, int daysOverdue, double finePerDay, double totalFine
Test Case:
// Input
bookTitle = "Harry Potter";
daysOverdue = 5;
finePerDay = 0.50;
// Expected Output: The fine for Harry Potter is $2.50.
Program:

```
public class LibraryFineCalculator {
   public static void main(String[] args) {
      String bookTitle;
      int daysOverdue;
      double finePerDay;
      double totalFine;
      bookTitle = "Harry Potter";
      daysOverdue = 5;
      finePerDay = 0.50;
      totalFine = calculateTotalFine(daysOverdue, finePerDay);
      System.out.printf("The fine for %s is $%.2f%n", bookTitle, totalFine);
   }
   public static double calculateTotalFine(int daysOverdue, double finePerDay) {
      return daysOverdue * finePerDay;
   }
}
```

Output:

Output

```
java -cp /tmp/K47bO2vjWD/LibraryFineCalculator
The fine for Harry Potter is $2.50

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