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:

Output

```
java -cp /tmp/iMl63e8Gkr/StudentGradeCalculator
Alice's final grade is B

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

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: