

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:

```
public class StudentGrade {  
    public static void main(String[] args) {  
        String studentName = "RANI";  
        int assignmentScore = 55;  
        int midtermScore = 68;  
        int finalExamScore = 92;  
        String finalGrade;  
  
        double totalScore = (assignmentScore * 0.4) + (midtermScore * 0.2) + (finalExamScore *  
0.4);  
  
        if (totalScore >= 90) {  
            finalGrade = "A";  
        } else if (totalScore >= 80) {  
            finalGrade = "B";  
        } else if (totalScore >= 70) {  
            finalGrade = "C";  
        }  
    }  
}
```

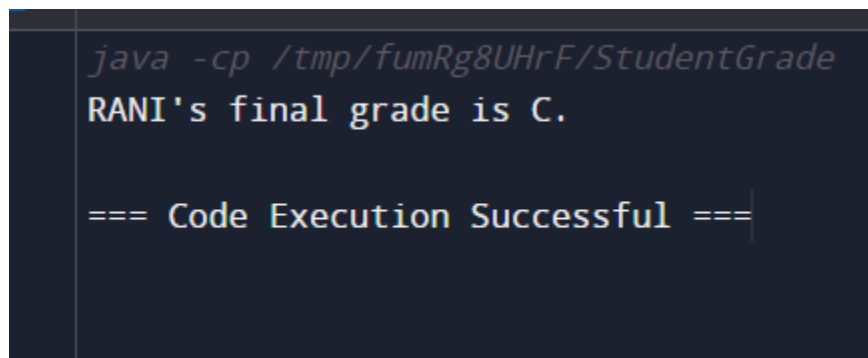
```

    } else if (totalScore >= 60) {
        finalGrade = "D";
    } else {
        finalGrade = "F";
    }

    System.out.println(studentName + "'s final grade is " + finalGrade + ".");
}
}

```

OUTPUT:



```

java -cp /tmp/fumRg8UHrF/StudentGrade
RANI's final grade is C.

=== 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 CarMileage {  
    public static void main(String[] args) {  
        String carModel = "Toyota Camry";  
        double distanceTraveled = 500;  
        double fuelConsumed = 15;  
        double mileage;  
  
        mileage = distanceTraveled / fuelConsumed;  
  
        System.out.println("The mileage of " + carModel + " is " + mileage + " miles per gallon.");  
    }  
}
```

OUTPUT:

```
java -cp /tmp/iwSHwsM6s1/CarMileage  
The mileage of Toyota Camry is 33.33333333333336 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;

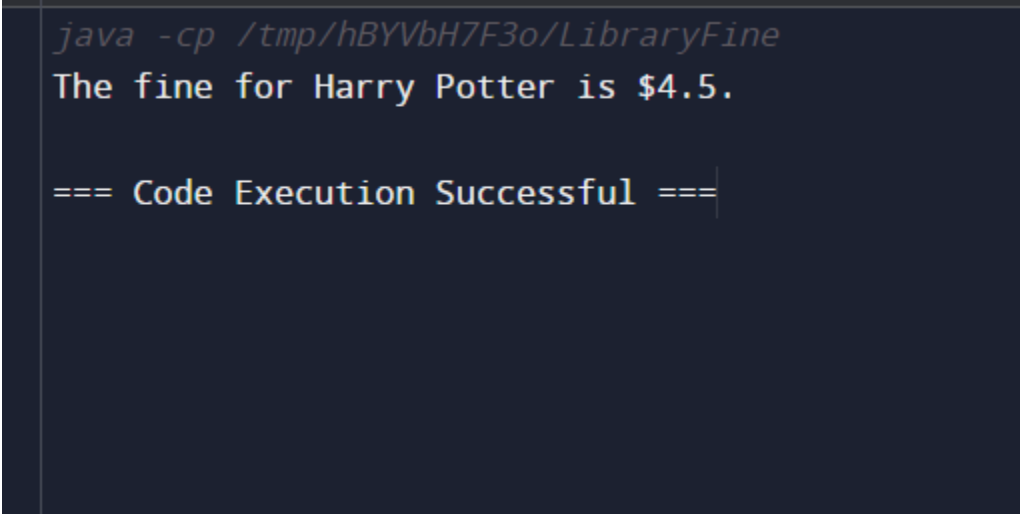
finePerDay = 0.50;

// Expected Output: The fine for Harry Potter is \$2.50.

PROGRAM:

```
public class LibraryFine {  
    public static void main(String[] args) {  
        String bookTitle = "Harry Potter";  
        int daysOverdue = 9;  
        double finePerDay = 0.50;  
        double totalFine;  
  
        totalFine = daysOverdue * finePerDay;  
  
        System.out.println("The fine for " + bookTitle + " is $" + totalFine + ".");  
    }  
}
```

OUTPUT:

A screenshot of a terminal window with a dark background. The first line shows a Java command: `java -cp /tmp/hBYVbH7F3o/LibraryFine`. The second line shows the output: `The fine for Harry Potter is $4.5.`. The third line shows a success message: `=== Code Execution Successful ===`.

```
java -cp /tmp/hBYVbH7F3o/LibraryFine  
The fine for Harry Potter is $4.5.  
  
=== Code Execution Successful ===
```