

1. Calculator - Basic Arithmetic

Write a Java program to perform basic arithmetic operations.

- **Class Name:** Calculator
 - **Method 1:** add
 - `public static int add(int a, int b)`
 - Returns: `a + b`
 - **Method 2:** subtract
 - `public static int subtract(int a, int b)`
 - Returns: `a - b`

Example Call:

```
System.out.println(Calculator.add(10, 5));
System.out.println(Calculator.subtract(10, 5));
```

Expected Output:

```
15
5
```

2. Temperature Converter

Write a Java program to convert Celsius to Fahrenheit.

- **Class Name:** TemperatureConverter
- **Method:** `public static double convertToFahrenheit(double celsius)`
 - Returns: `(celsius * 9/5) + 32`

Example Call:

```
System.out.println(TemperatureConverter.convertToFahrenheit(25));
```

Expected Output:

```
77.0
```

3. Geometry - Area of Rectangle

Write a Java program to calculate area of a rectangle.

- **Class Name:** Geometry
- **Method:** `public static double areaOfRectangle(double length, double width)`
 - Returns: `length * width`

Example Call:

```
System.out.println(Geometry.areaOfRectangle(5.0, 3.0));
```

Expected Output:

```
15.0
```

4. Travel Converter - Kilometers to Miles

Write a Java program to convert kilometers to miles.

- **Class Name:** TravelConverter
- **Method:** public static double kmToMiles(double km)
 - Returns: km * 0.621371

Example Call:

```
System.out.println(TravelConverter.kmToMiles(10));
```

Expected Output:

```
6.21371
```

5. Circle Area Calculator

Write a Java program to calculate area of a circle.

- **Class Name:** CircleCalculator
- **Method:** public static double calculateArea(double radius)
 - Returns: 3.1416 * radius * radius

Example Call:

```
System.out.println(CircleCalculator.calculateArea(7));
```

Expected Output:

```
153.9384
```

6. Currency Converter

Write a Java program to convert Indian Rupees to USD.

- **Class Name:** CurrencyConverter
- **Method:** public static double rupeesToUSD(double rupees)
 - Assumption: 1 USD = 83.0 INR
 - Returns: rupees / 83.0

Example Call:

```
System.out.println(CurrencyConverter.rupeesToUSD(8300));
```

Expected Output:

```
100.0
```

7. Bill Calculator - Adding Tax

Write a Java program to calculate total bill with tax.

- **Class Name:** BillCalculator

- **Method:** `public static double calculateTotalWithTax(double amount, double taxPercent)`
 - Returns: `amount + (amount * taxPercent / 100)`

Example Call:

```
System.out.println(BillCalculator.calculateTotalWithTax(1000, 18));
```

Expected Output:

```
1180.0
```

8. String Utility - Length of String

Write a Java program to return length of a string.

- **Class Name:** `StringUtility`
- **Method:** `public static int getLength(String input)`
 - Returns: `input.length()`

Example Call:

```
System.out.println(StringUtility.getLength("Hello"));
```

Expected Output:

```
5
```

9. Time Converter - Hours to Minutes

Write a Java program to convert hours to minutes.

- **Class Name:** `TimeConverter`
- **Method:** `public static int hoursToMinutes(int hours)`
 - Returns: `hours * 60`

Example Call:

```
System.out.println(TimeConverter.hoursToMinutes(2));
```

Expected Output:

```
120
```

10. Rectangle Perimeter

Write a Java program to calculate perimeter of a rectangle.

- **Class Name:** `ShapeCalculator`
- **Method:** `public static double calculatePerimeter(double length, double width)`
 - Returns: `2 * (length + width)`

Example Call:

```
System.out.println(ShapeCalculator.calculatePerimeter(5.0, 3.0));
```

Expected Output:

16.0
