Skeleton Code

```
import java.util.Scanner;

public class BasicJavaTutorial {
    Scanner scanner = new Scanner(System.in);

    public static void main(String[] args) {

        new BasicJavaTutorial();
    }

    public BasicJavaTutorial() {
        runMenu();
    }

    public void runMenu() {
        int choice;

        // Menu-driven program
        do {
            System.out.println("\nMenu:");
            System.out.println("1. Calculate months from age");
            System.out.println("2. Print stars in a line");
            System.out.println("3. Display times table");
            System.out.println("4. Calculate the area of a right-angled triangle");
            System.out.println("5. Exit");
            System.out.print("Enter your choice: ");
            choice = scanner.nextInt();

            switch (choice) {
                case 1 -> calculateMonthsFromAge();
                case 2 -> printStars();
                case 3 -> displayTimesTable();
                case 4 -> calculateTriangleArea();
                case 5 -> System.out.println("Exiting... Goodbye!");
                default -> System.out.println("Invalid choice. Please try again.");
            }
        } while (choice != 5);

        scanner.close();
    }

    public void calculateMonthsFromAge() {
        // Implement this method in Task 1
    }

    public void printStars() {
        // Implement this method in Task 2
    }

    public void displayTimesTable() {
        // Implement this method in Task 3
    }

    public static void calculateTriangleArea() {
        // Implement this method in Task 4
    }
}
```

Tutorial: Basic Java Programming

Overview

This tutorial will guide you through creating a menu-driven Java program. You'll implement various methods to practice core programming concepts such as input/output, loops, and calculations. By the end of the tutorial, you'll have a deeper understanding of basic Java programming and method creation.

Scenario

You will build a program that allows users to select different options from a menu. Each option will call a method to perform a specific task. The skeleton code is provided to you with the menu system already implemented. Your task is to create the methods for each option.

Tasks

Task 1: Calculate Months from Age

Objective: Write a method to calculate the number of months from a given age in years.

Instructions:

1. Prompt the user to enter their age in years.
2. Calculate the age in months (years × 12).
3. Print the result to the console.

Example Input:

```
Enter your age in years: 25
```

Example Output:

```
You are approximately 300 months old.
```

Task 2: Print Stars in a Line

Objective: Write a method to print a specified number of stars in a single line.

Instructions:

1. Prompt the user to enter the number of stars to print.
2. Use a loop to print the stars on the same line.
3. Print a newline after the stars.

Example Input:

```
Enter the number of stars: 5
```

Example Output:

```
*****
```

Task 3: Display Times Table

Objective: Write a method to display the times table for a given number.

Instructions:

1. Prompt the user to enter a number.
2. Use a loop to calculate and display the times table for the entered number (up to 10).

Example Input:

```
Enter a number: 3
```

Example Output:

```
3 x 1 = 3
3 x 2 = 6
3 x 3 = 9
...
3 x 10 = 30
```

Task 4: Calculate the Area of a Right-Angled Triangle

Objective: Write a method to calculate the area of a right-angled triangle.

Instructions:

1. Prompt the user to enter the base of the triangle.
2. Prompt the user to enter the height of the triangle.
3. Calculate the area using the formula:

   ```
   Area = 0.5 × base × height
   ```

4. Print the result.

Example Input:

```
Enter the base of the triangle: 5
Enter the height of the triangle: 4
```

Example Output:

```
The area of the triangle is: 10.0
```

Extension Ideas

1. **Perimeter of a Rectangle:** Add an option to calculate the perimeter of a rectangle.
2. **Full Tables:** Add an option to print the full Times table
3. **Guess the Number Game:** Add an option for a simple guessing game.
4. **Custom Patterns:** Allow the user to print other shapes (e.g., a triangle of stars).
