**Factorial\_Using\_Loops**

**Overview**

This class calculates the factorial of a number using loops. It prompts the user for input, computes the factorial of the given number, and continues to do so until the user decides to stop by entering **-1**.

**Methods**

# **static long factorial (int num)**

**Purpose:**

* Computes the factorial of a given positive integer.

**Parameters:**

* **int num:** The integer for which the factorial needs to be computed.

**Returns:**

* **long:** The factorial of the input number.

**Description:**

* Initializes a variable **fact** to **1**.
* Uses a for loop to multiply fact by each integer from 1 to num.
* Returns the computed factorial.

# **public static void main (String [] args)**

**Purpose:**

* Main entry point of the program. Handles user input, calls the factorial method, and displays the result.

**Description:**

* **Creates** a **Scanner** object to read **user input**.
* Enters an **infinite loop** to repeatedly prompt the user for input.
* Asks the user to **enter** a number or **-1** to stop.
* If the user inputs **-1**, the loop **exits**, and the program **terminates**.
* For other **inputs**, calculates the factorial using the factorial method and prints the result.
* **Closes** the **Scanner** object to release resources once the loop exits.

# **Usage**

**Start the Program:**

Run the class. The program will prompt you to enter a number.

**Input Numbers:**

Enter a **positive integer** to **compute** its **factorial**.

To **stop** the program, **enter -1**.

**Output:**

The program will **display** the factorial of the entered number in the format: Factorial of **“number”** is => **“result”**.

If **-1** is entered, the program will **exit**.

# **Example**

**Input:** 5

**Output:** Factorial of **5** is => **120**

**Input:** -1

**Output:** (Program exits)