1. **BouncingBall**

Write a **GraphicsProgram** named **BouncingBall** in which a ball bounces from the borders of the window. The ball should initially be located in the center. Make the ball move with an initial direction and velocity. You can make use of `getWidth()` and `getHeight()` methods to obtain the screen width and height, respectively. If the `GOval` object name is `ball`, then you can obtain the current x and y location of the object by making use of the `ball.getX()` and `ball.getY()` methods, respectively.

Use an infinite loop to keep the ball bouncing forever. For this, simply use a `while(true)`

You may terminate the program by pressing the red button on the Console view. Play with different velocity values.

2. **Factorial Calculation**

Write a **ConsoleProgram** named **Factorial** that asks the user to enter a number n, and then prints the value of n!, as well as the definition of n! (that is, 1 * 2 * 3 * ... * n) as shown below. Implement **Factorial** using a `for` loop and `while` loop separately.
3. Draw the letter Z using rectangles

Write a GraphicsProgram named DrawZ that draws the letter Z using rectangles of size 10x10px. The output of this program should look like the figure below.

**Extra Challenge:** Parametrize the DrawZ program using a variable \( N \) so that it can draw the letter Z using \( N \) rectangles.