CHIANG MAI UNIVERSITY
College of Arts, Media and Technology
1st Semester / Academic Year 2025
960101 Fundamentals of Programming Logic in Digital Industry

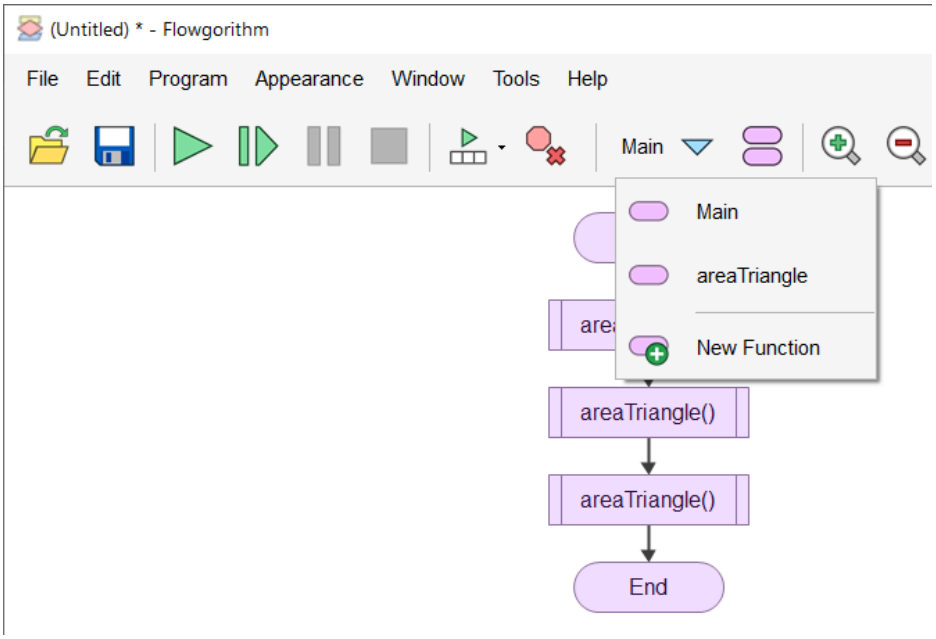
Lab Assignment 11: Function

Name ..... Student ID ..... Section.....

Objectives:

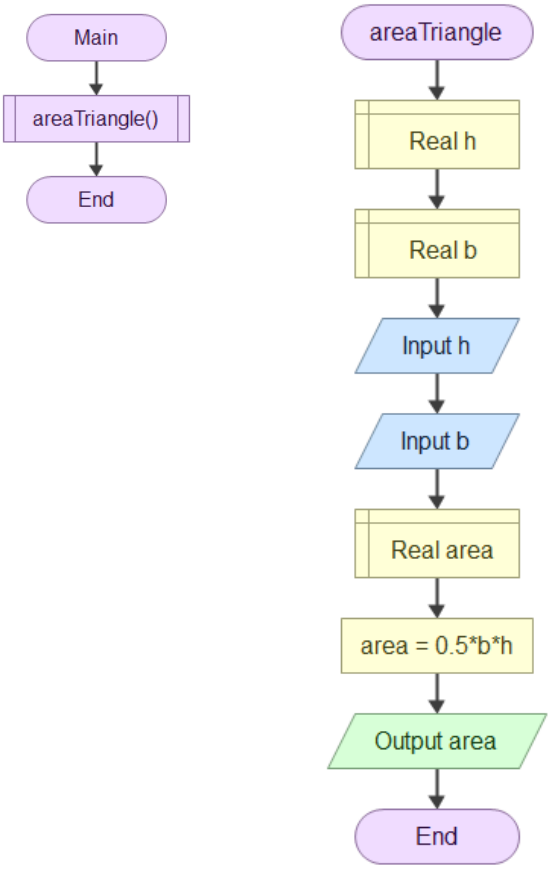
1) Understand the concept of functions.
2) Be able to create a function in Flowgorithm and Thunkable.
3) Be able to pass parameters to the created function, to process something inside the function, and to return a value.

Part 1 – Flowgorithm Tutorial

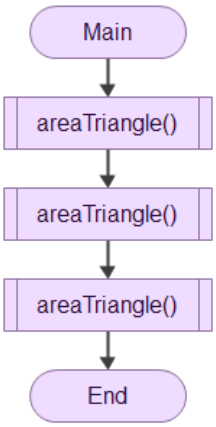


Ex. 1.1 Function without return value and without parameter.

1.1.1 Create a flowchart to calculate the area of triangle while inputs are height and base of triangle **using function without returning and without parameter (areaTriangle())**. Then, display the answer.

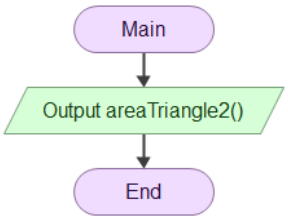


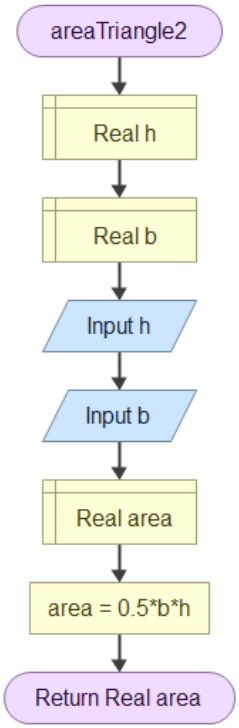
1.1.2 Modify the flowchart to display the area of 3 triangles by calling the **areaTriangle()** <u>function</u> 3 times.



<u>Ex. 1.2</u> Function with return value and without parameter.

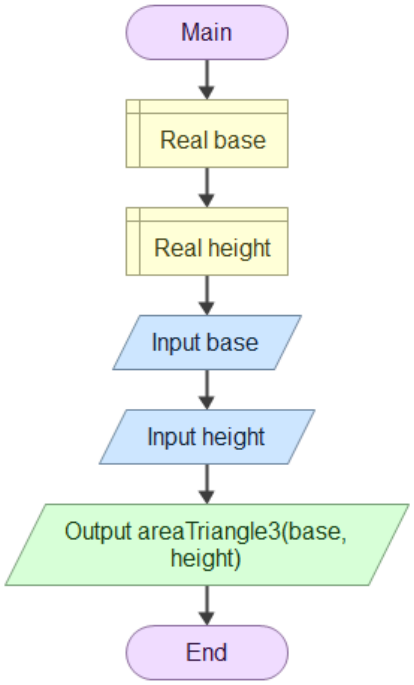
1.2.1 Modify the flowchart from 1.1.2 to use **areaTriangle()** <u>function</u> with returning area of triangle.

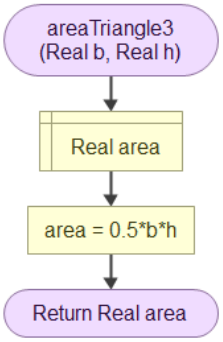




<u>Ex. 1.3</u> Function with return value and with parameter.

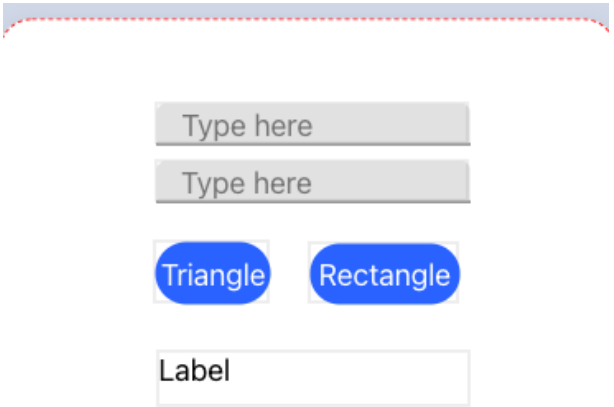
1.3.1 Modify the flowchart from 1.1.2 to use **areaTriangle()** <u>function</u> with returning area of triangle Then, use height and base of the triangle as the parameter of the function.





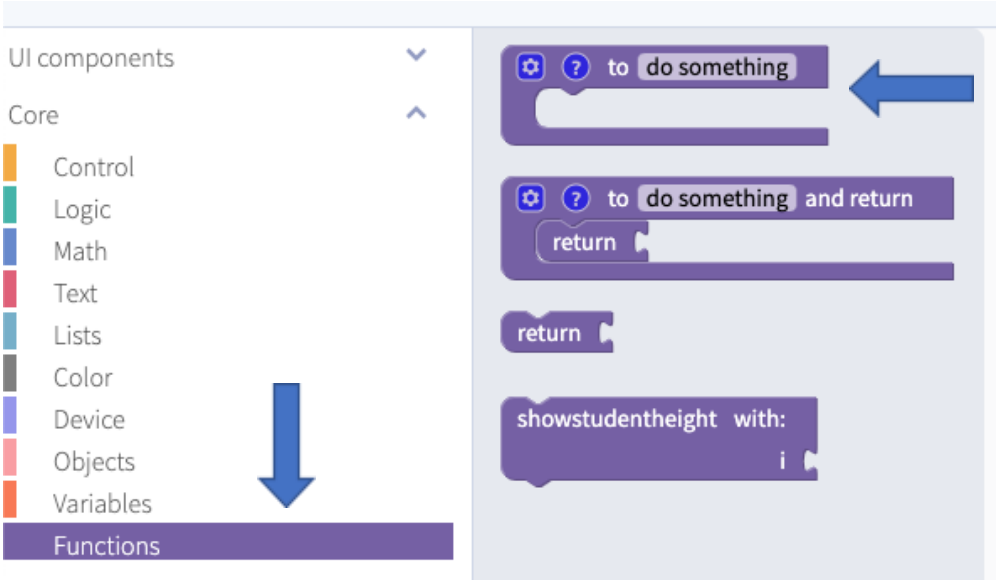
Part 2 – Thunkable Tutorial

Create a program to create 2 buttons, 2 textboxes, 1 label. The program will calculate the area of triangle if the button “Triangle” is clicked or calculate the area of rectangle if the button “Rectangle” is clicked. Then, display the answer in the label.

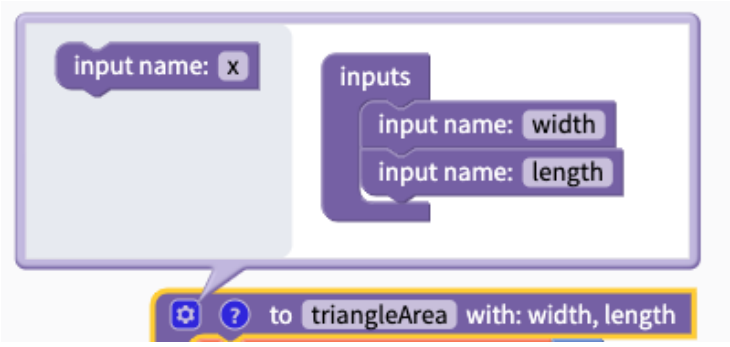


Function without return value

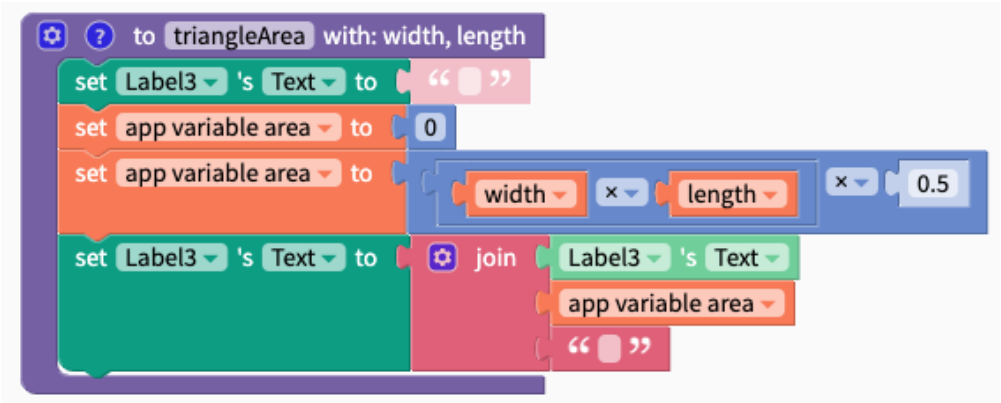
- Create the function without return value



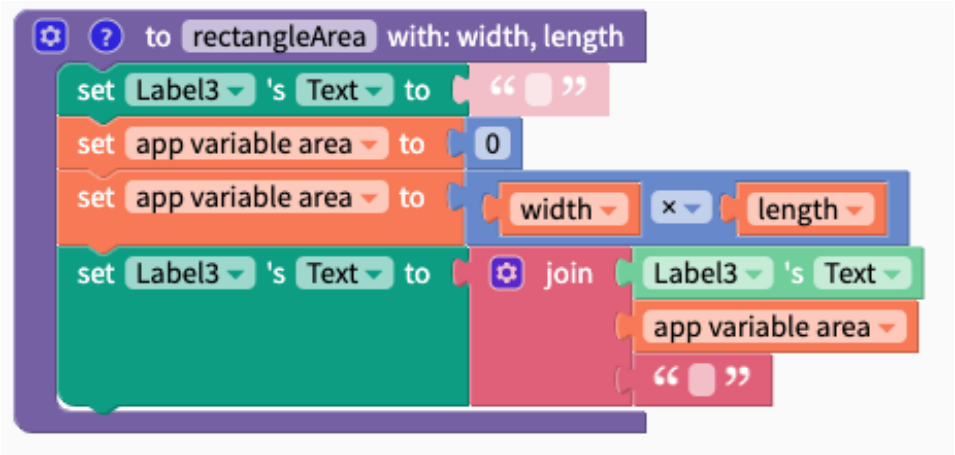
- Specify the input argument by clicking at gear symbol and dragging the input.
- Change the input argument's name



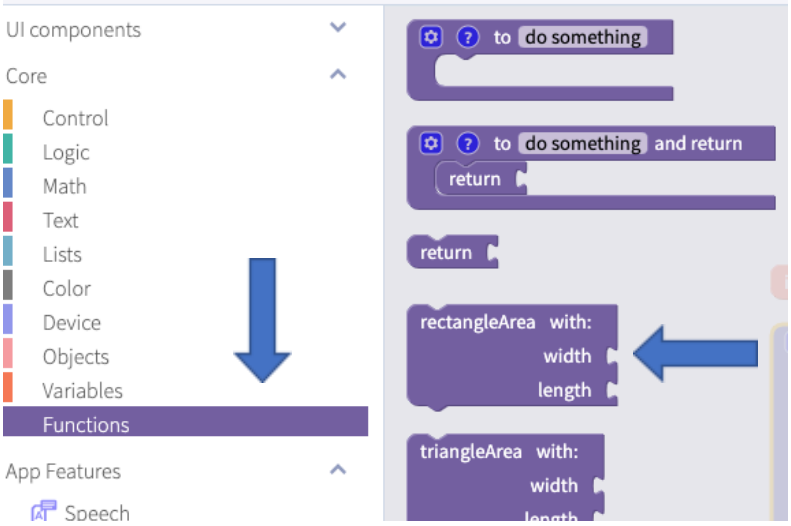
- Create "triangleArea" function



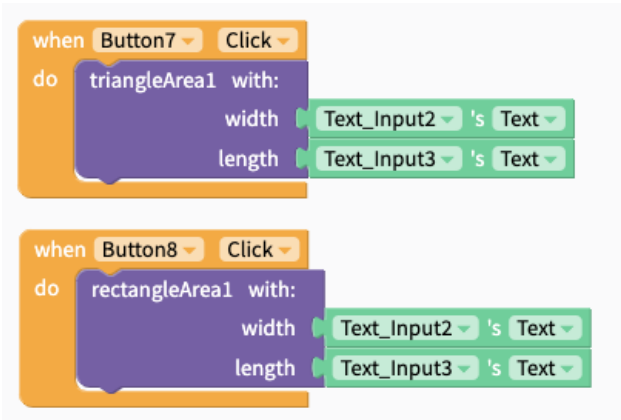
- Create “rectangleArea” function



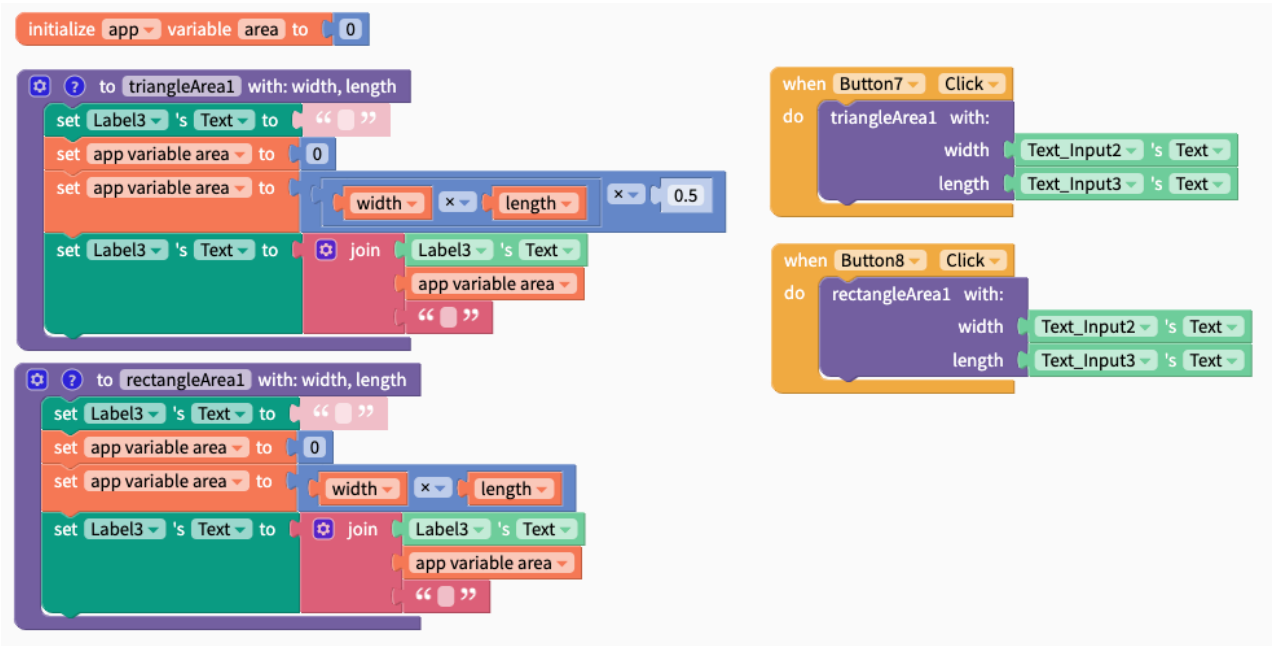
Call function



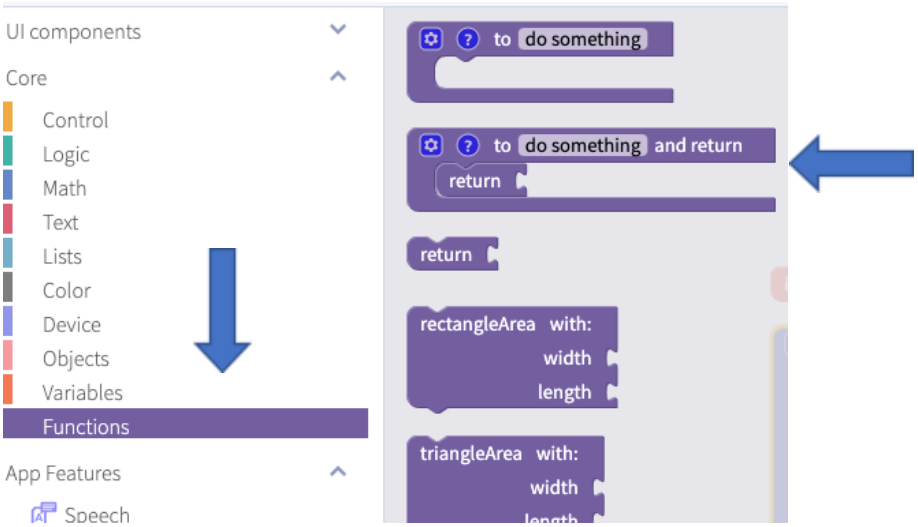
- Call function input the arguments

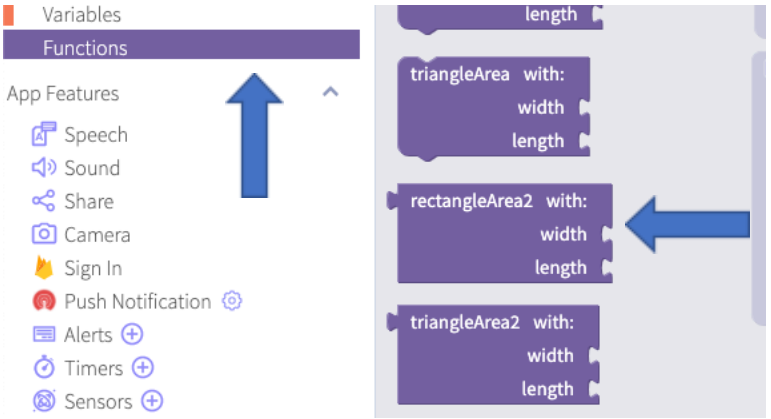


The complete code using function without return value

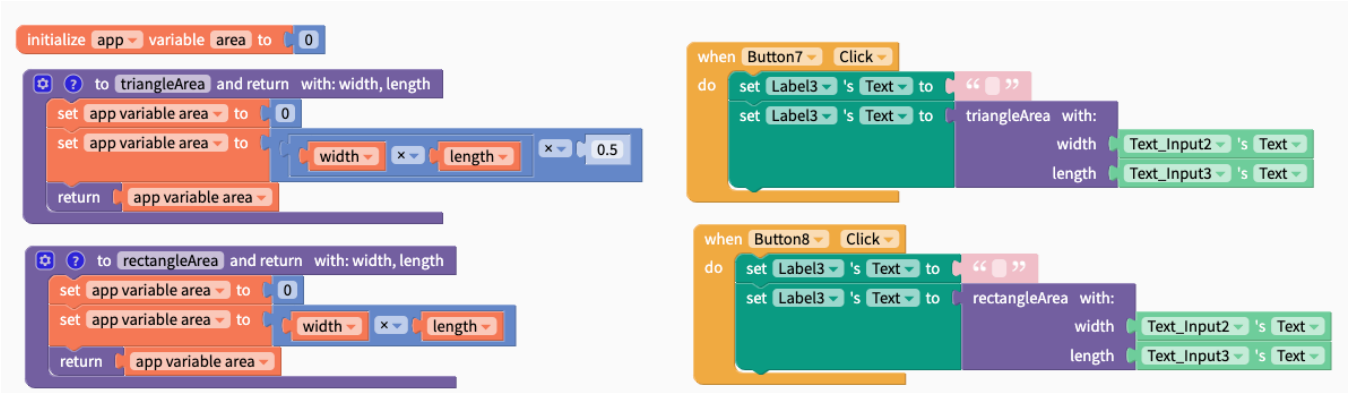


Function with return value





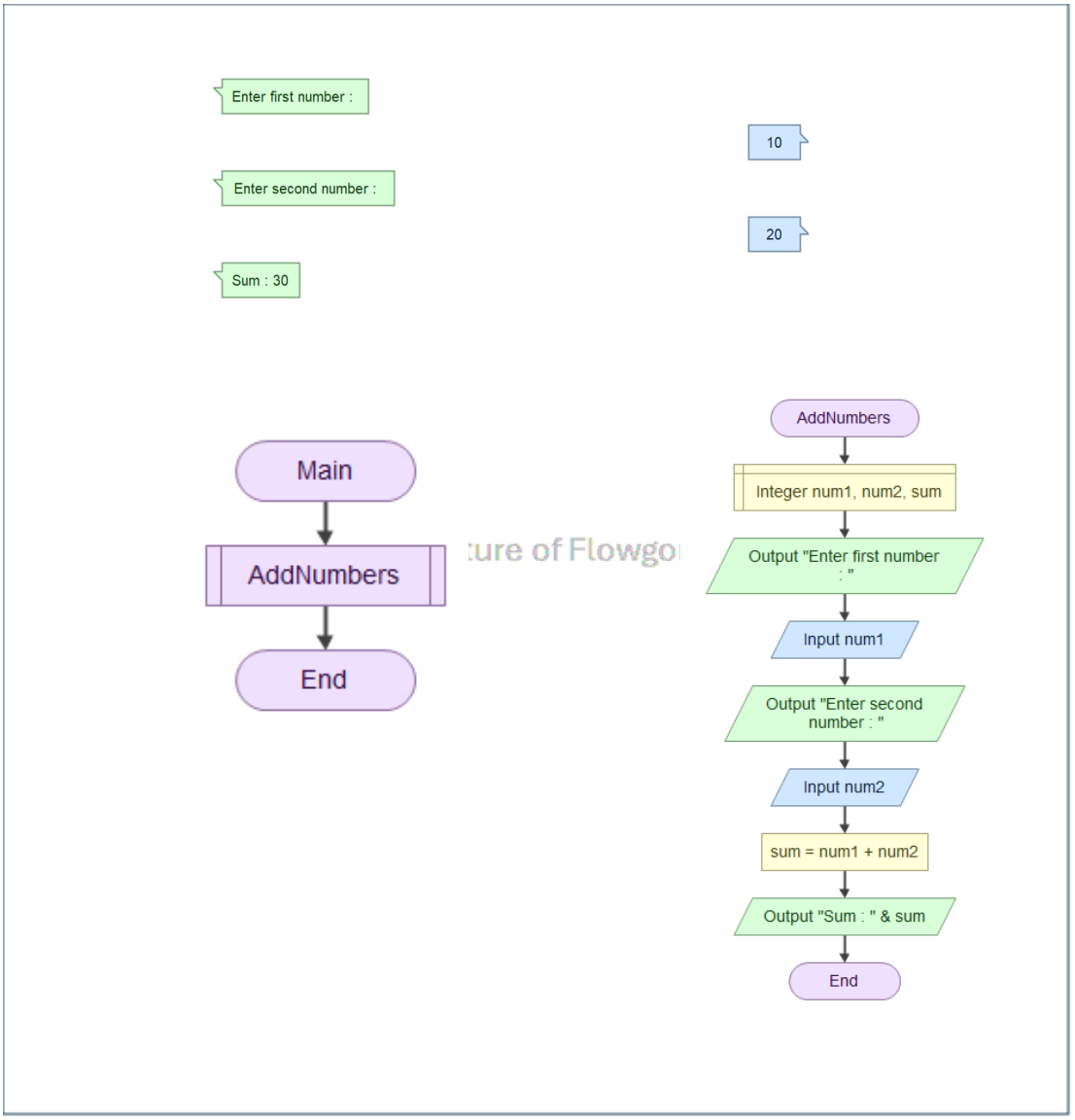
The complete code using function with return value



Part 2 – Problem Sets

1. Create a program to receive 2 integer values and return the addition of the inputs. (**Use Function without return value and without parameter**)

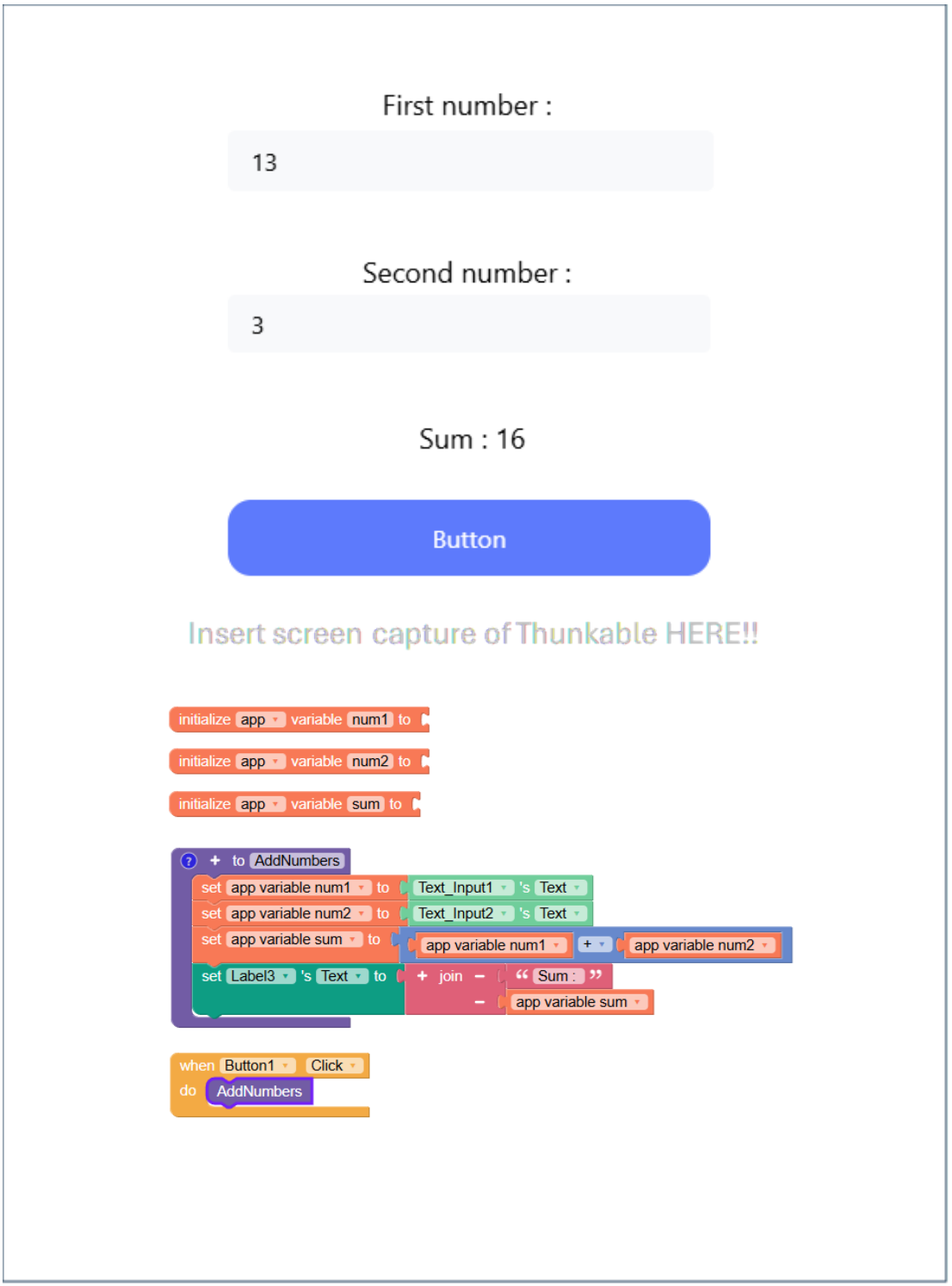
   1.1 Create a flowchart on **Flowgorithm.**
   Answer:



2.

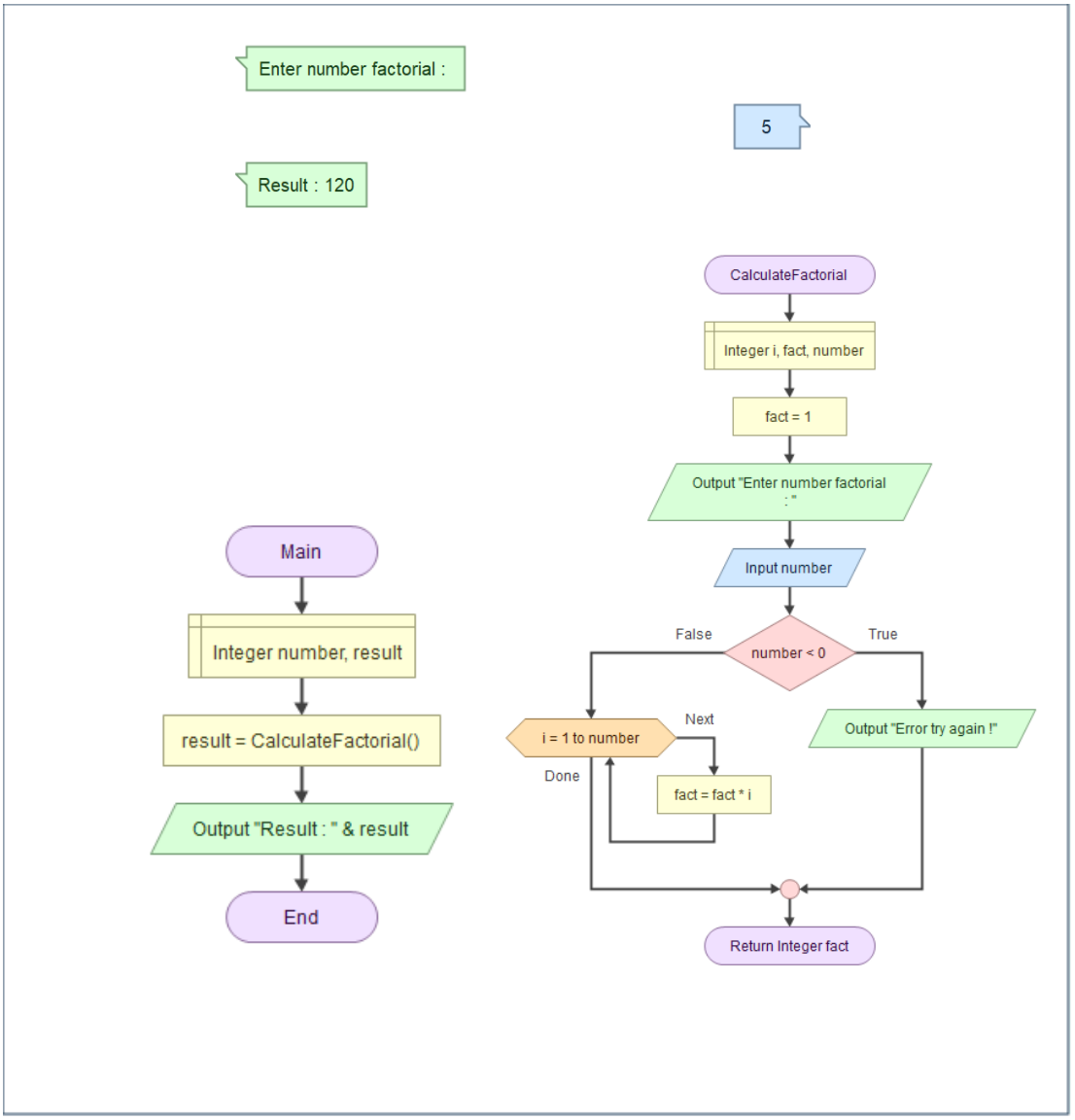
1.2 Create a program on **Thunkable**.

Answer:



2. Create a program to calculate the factorial of input. (**Use Function with return value and without parameter**)

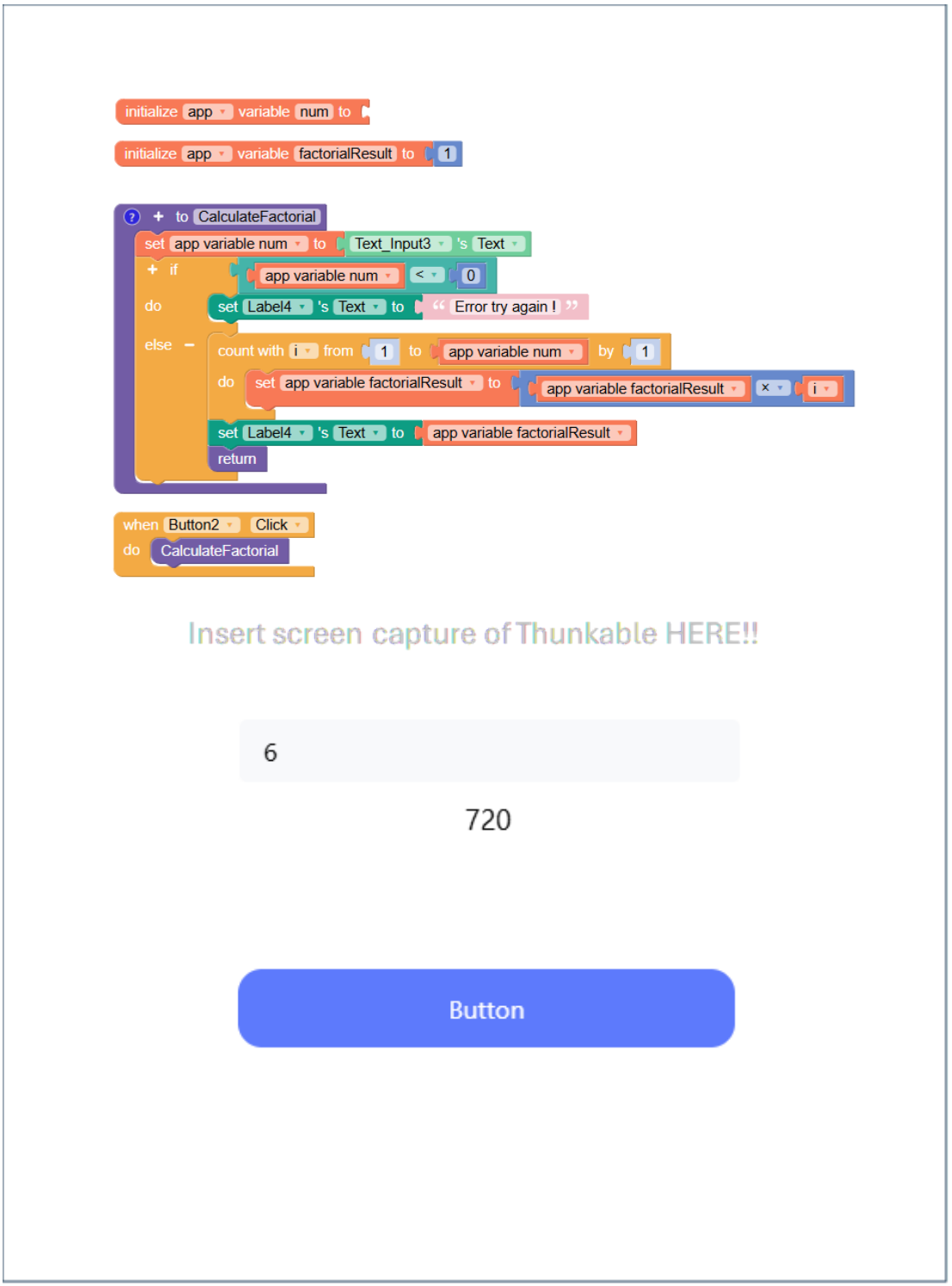
   2.1 Create a flowchart on **Flowgorithm.**
   Answer:



3.

2.2 Create a program on **Thunkable**.

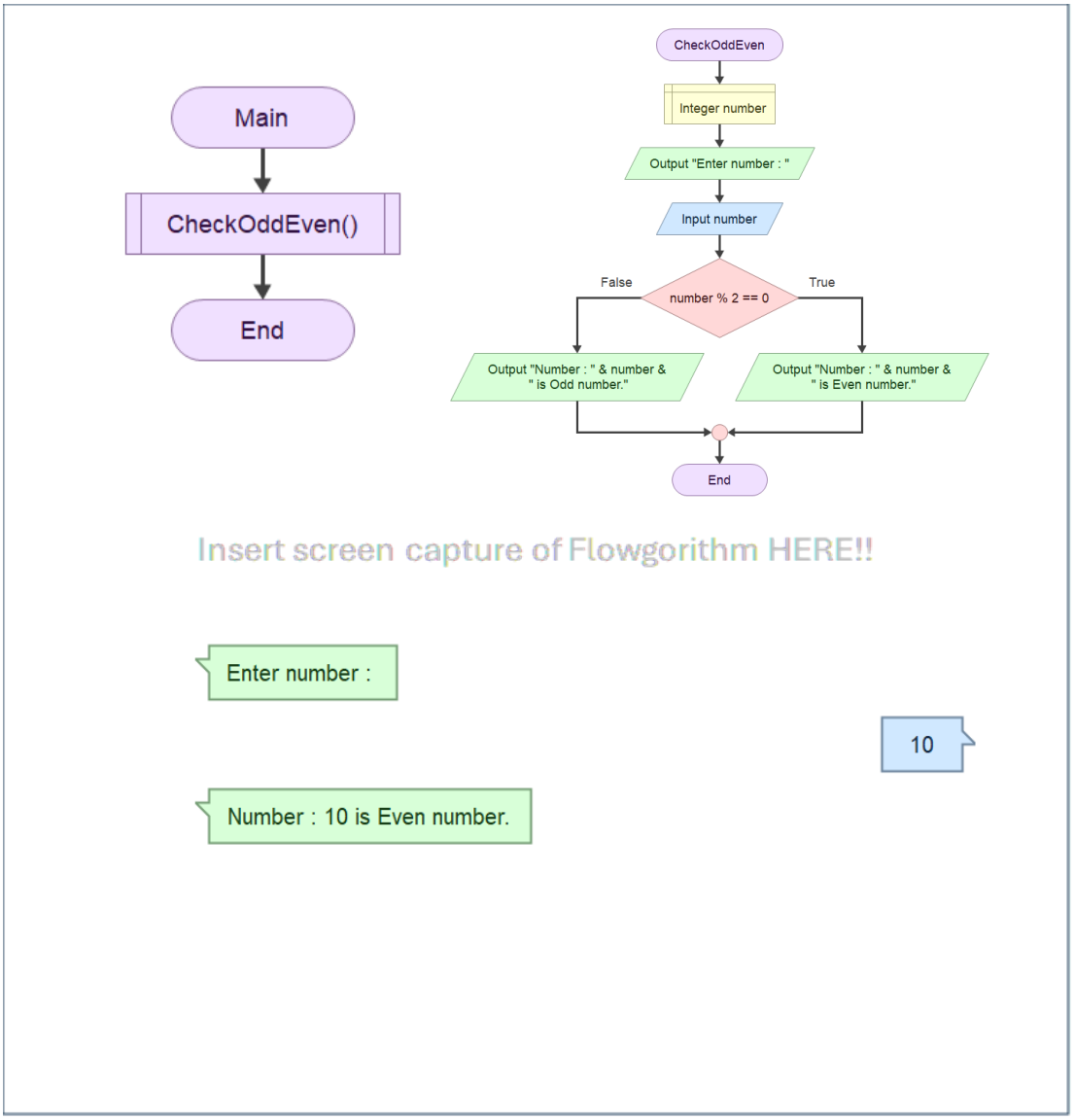
Answer:



3. Create a program to determine if a number is odd number, or not. (**Use Function without return value and with parameter**)

   3.1 Create a flowchart on **Flowgorithm.**

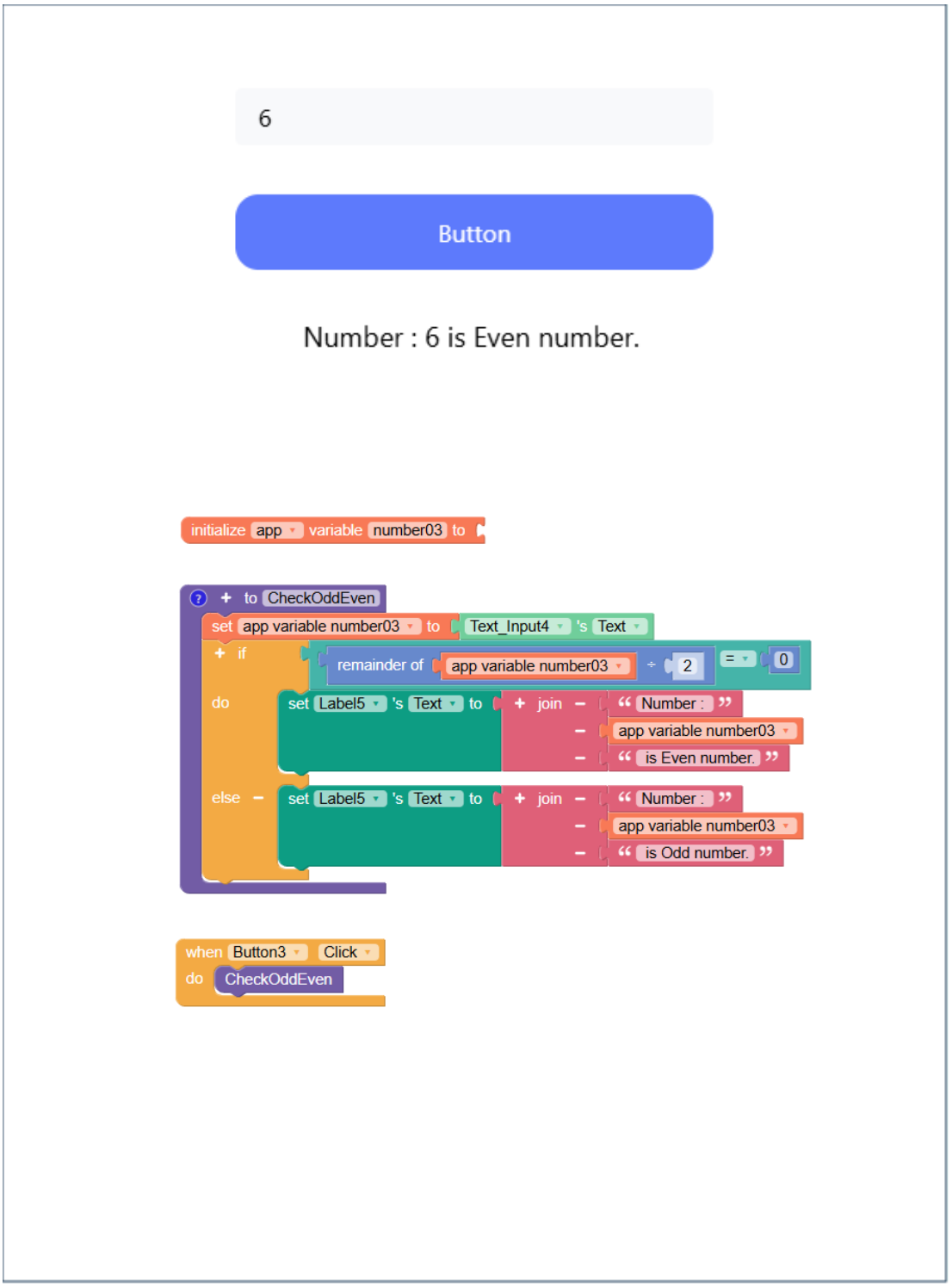
   Answer:



4.

3.2 Create a program on **Thunkable**.

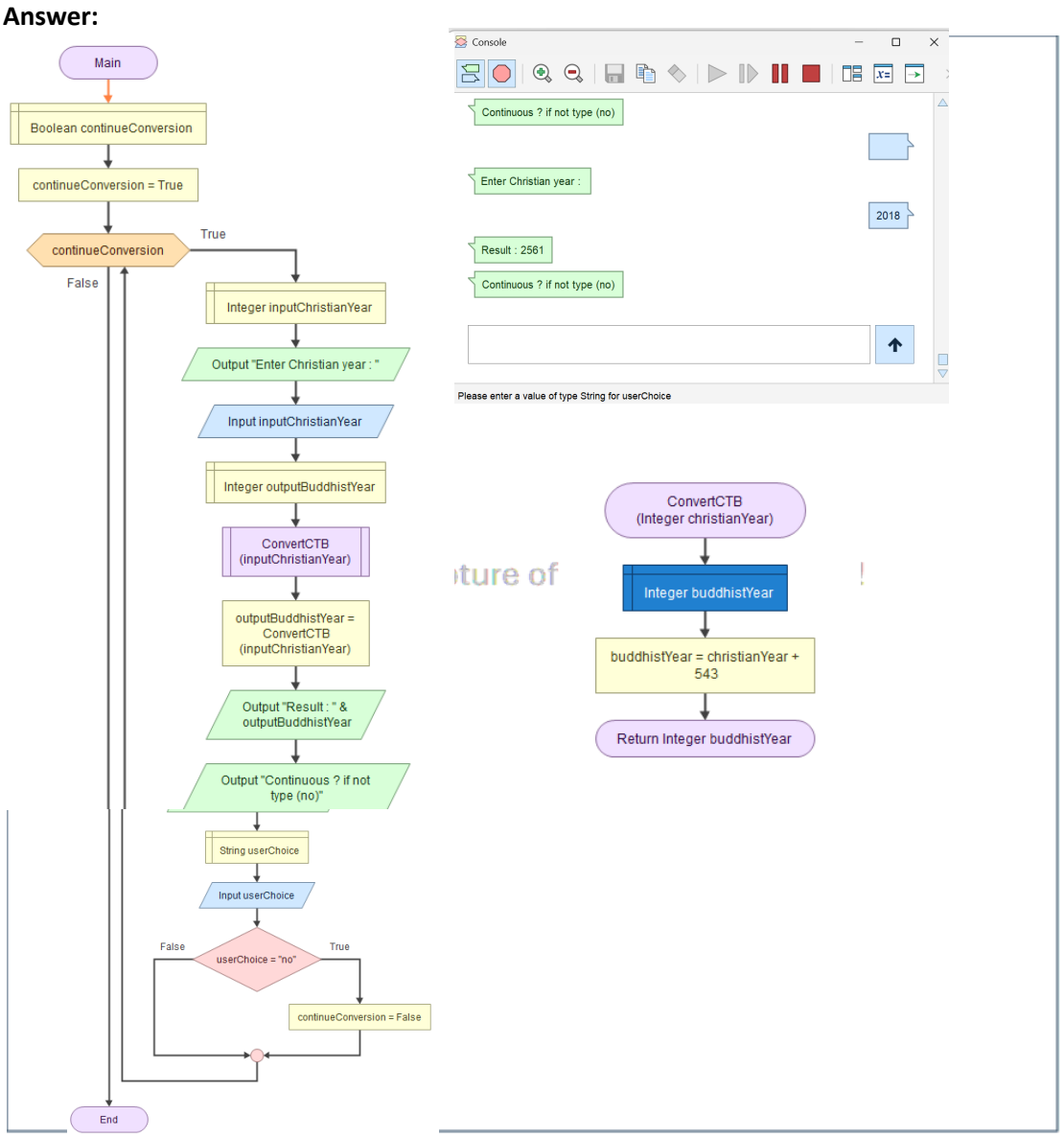
Answer:



4. Create a flowchart on **Flowgorithm** <u>with a function</u> that convert Christian year to Buddhism year. The function must receive a parameter and return an output. The program must be able to covert multiple years at the same time.

   Hint: you need to determine inputs, outputs, and the process of the year conversion. you need to know which parts should be grouped as a function.

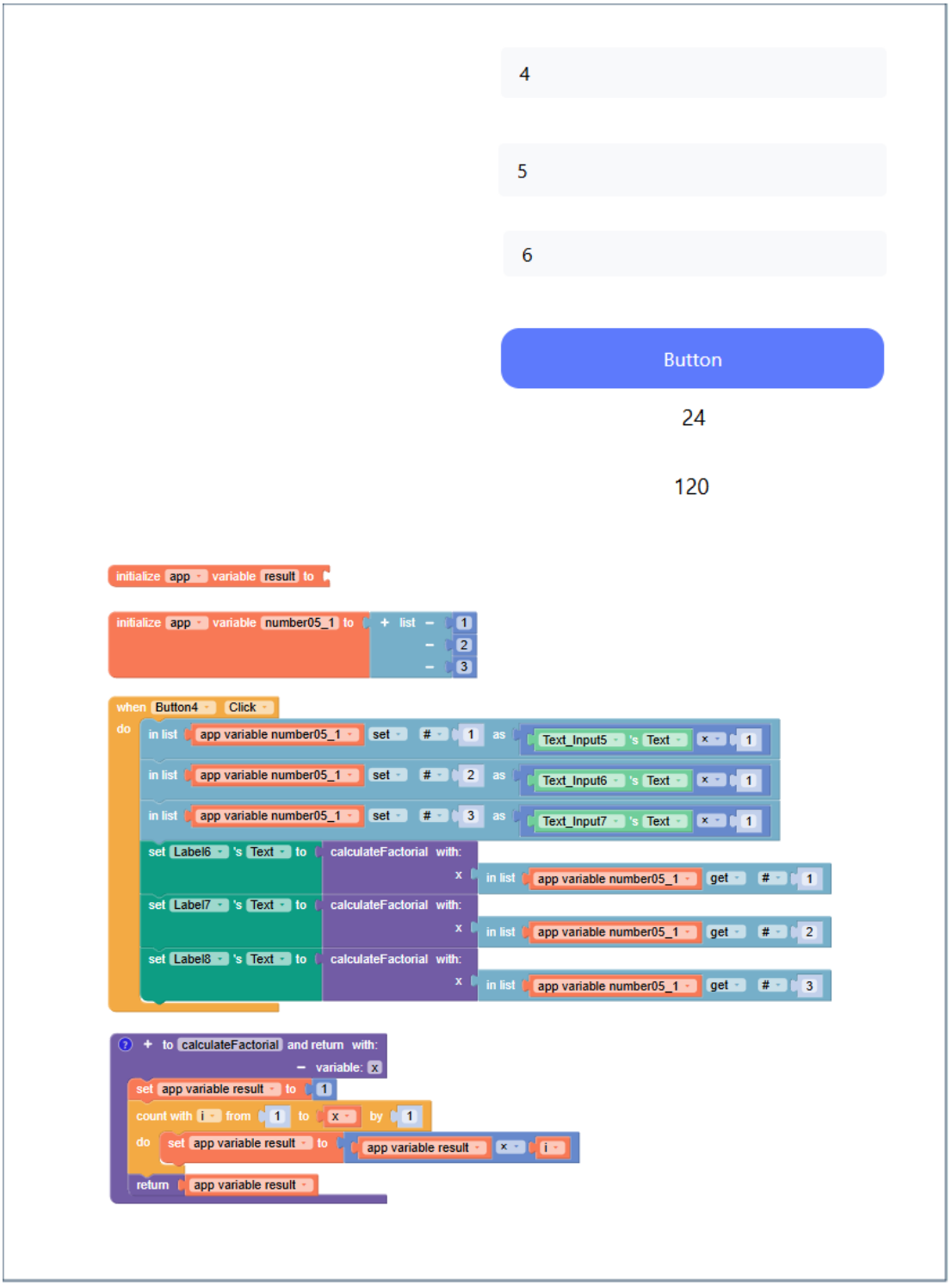
   Answer:



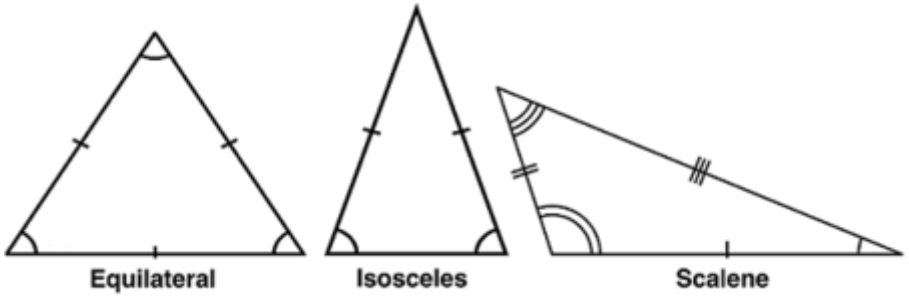
5.

5. Create a program on **Thunkable** <u>with a function</u> that calculate the factorial value. The function must receive a parameter and return an output. The program must be able to <u>calculate multiple factorial</u> values at the same time.
   Hint: you need to determine inputs, outputs, and the process of the factorial value.
   you need to know which parts should be grouped as a function.

   Answer:



6. Create a program on **Thunkable** with a function that checks whether the triangle is an equilateral triangle, isosceles triangle, or scalene triangle. The function must return the word “equilateral triangle”, “isosceles triangle”, or “scalene triangle” to the location that function is called. The program must be able to <u>check multiple triangles</u> at the same time.



Answer: