

# Imperative programming in Scratch

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# 0. Content of this video

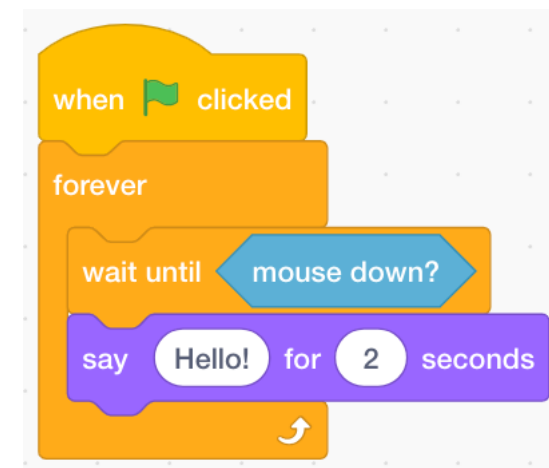
## 1. Imperative programming

## 2. Introduction to Scratch



## 3. Scratch programs:

- Hello world
- React to the mouse
- Count to 9



# 1. Imperative programming



## •Ingredients:

- 50 g yeast
- 600 ml lukewarm water
- Approx. 1 kg wheat flour
- 1 tsp salt
- 2 tbs oil

## •Directions:

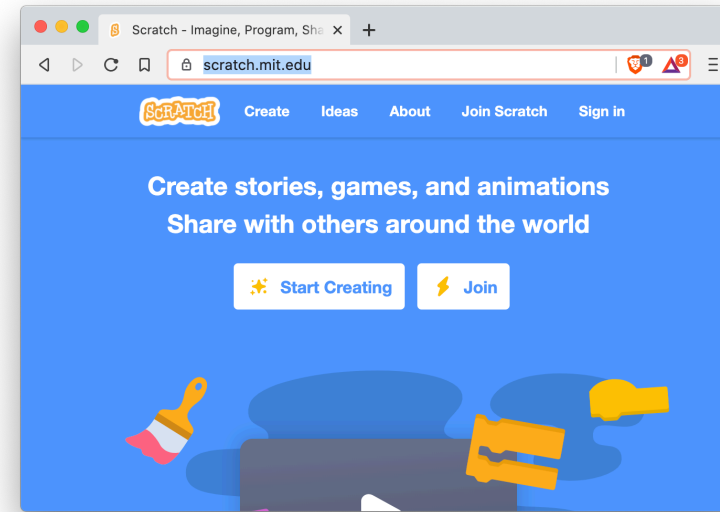
- Dissolve the yeast in the water in a bowl.
- Add salt and oil.
- Slowly add most of the flour until the dough is wet to touch but does not stick to the bowl.
- Knead the dough thoroughly with more flour on the table.
- Return the dough to the bowl, cover with a clean cloth, and let it rise to double size, typically 30 minutes.
- Collapse the dough by punching it a couple of times, divide it into 16 buns, and place them on baking paper on a sheet pan.
- Cover and let it rise again to double size, typically 30 minutes
- Bake at 200° Celsius for approx. 25 minutes

## 2. Introduction to Scratch

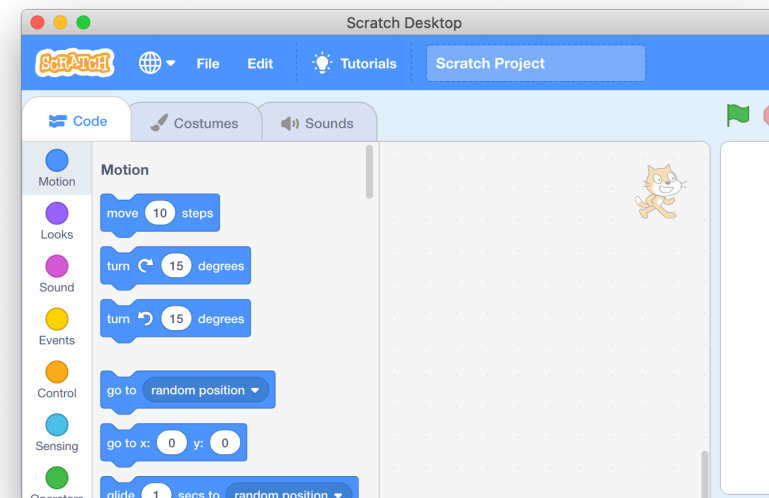


- Style: Block-based visual programming language
- Target: primarily at children
- History: First version in 2003 by the MIT Media Lab's Lifelong Kindergarten group together with Playful Invention Company in Montreal.

Web version: <https://scratch.mit.edu/>



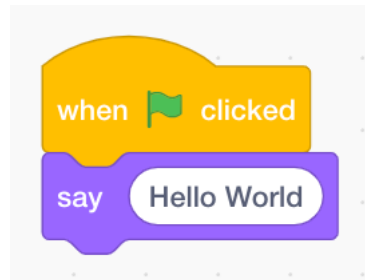
Desktop version



### 3. Scratch programs

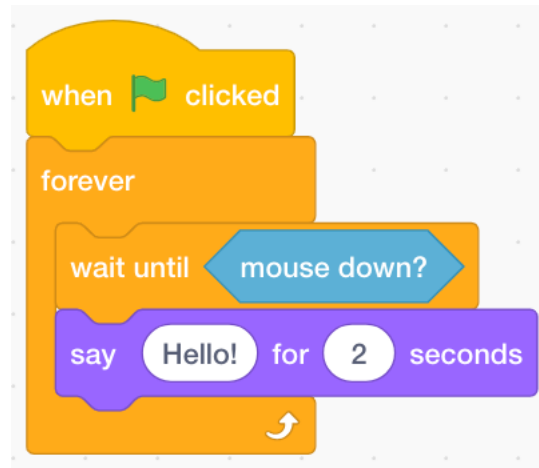
#### Hello World

Description: Print "Hello World" to the screen



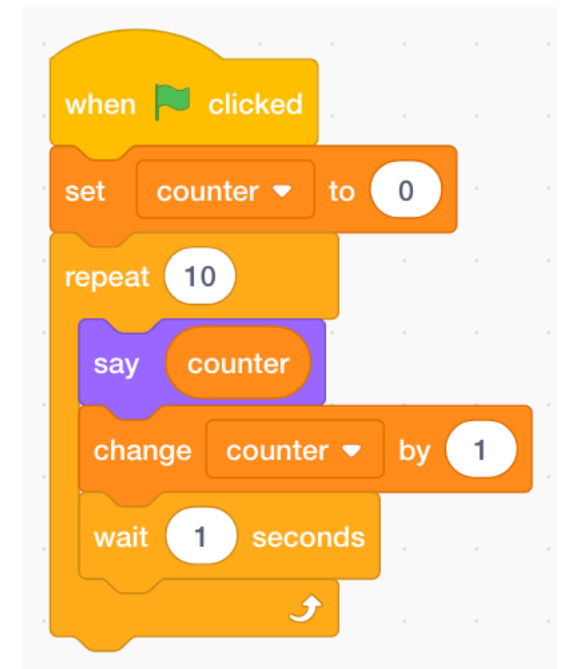
#### React to the mouse

Say "Hello" every time the left mouse button is pressed.



#### Count 0 to 9

Print the numbers 0 to 9 to the screen





# Summary

- Imperative programming is like a cooking recipes
- Scratch follows the imperative programming paradigm
- You have seen the Scratch blocks for:
  - Output (say)
  - Loops (forever and repeat)
  - Conditions (wait until)
  - Input (when and mouse down)
  - Variables (counter)
  - Assignments (set)
  - Expressions (change)
  - Parameters

