Imperative programming in Scratch

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0. Content of this video
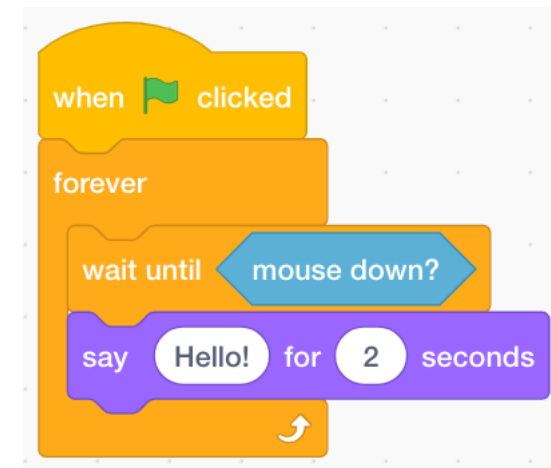
1. Imperative programming

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 tbsp 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
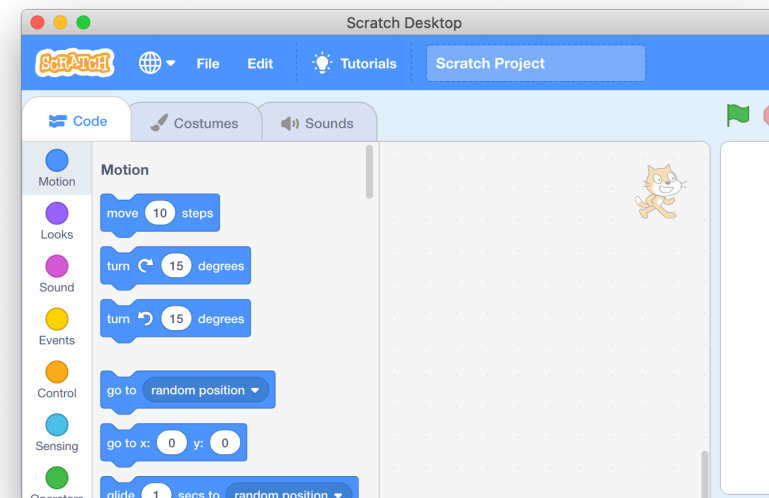
Web version: https://scratch.mit.edu/

- 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.
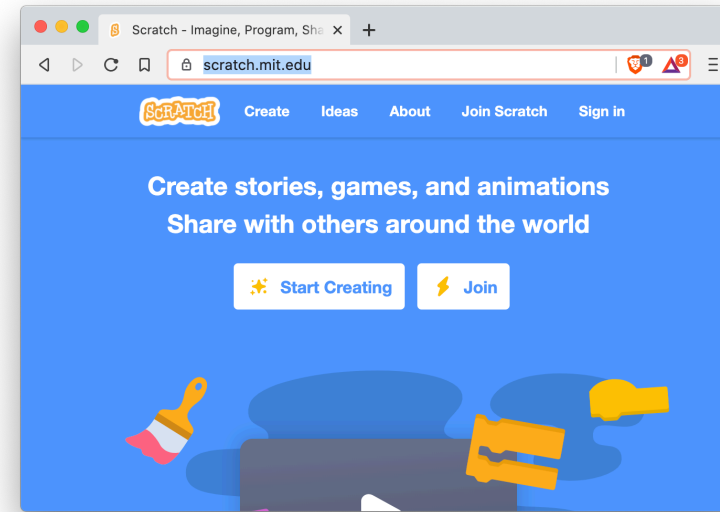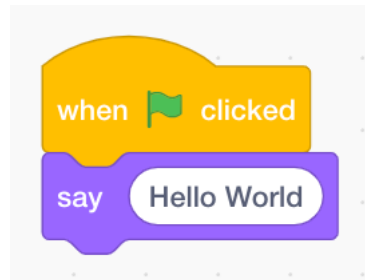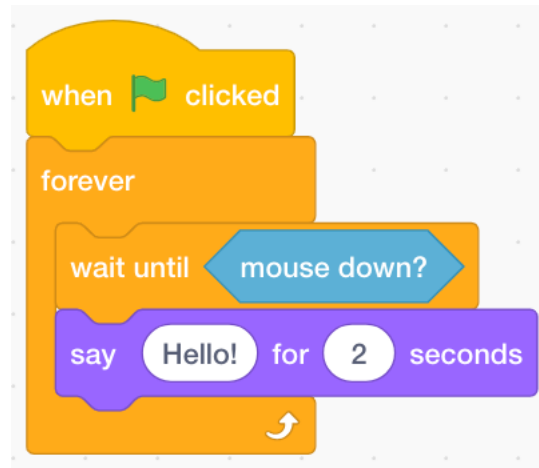
Desktop version

3. Scratch programs

Hello World
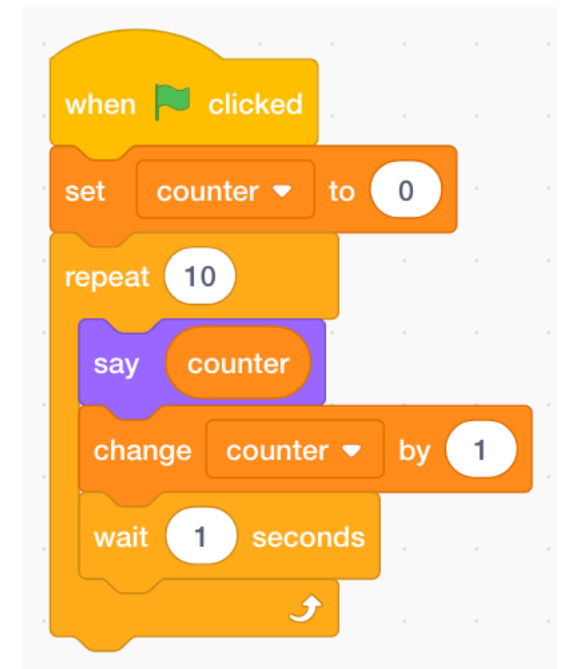
Description: Print "Hello World" to the screen

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