CS 101: Computer Programming and Utilization

02-Scratch Programming

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Drawing a Square - Activity

Suppose you have a Robot that can walk by following simple instructions from you, such as move, stop, etc.

You have to make this Robot walk around in a square.

What sequence of instructions will you give to the Robot?

- First think (Individually) and write down your instructions.
- Then see if your solution is different from your neighbor.
Drawing a Square - Discussion

• List different types of instructions (commands) devised.

• Discuss how a single high-level instruction is composed of a set of low-level instructions.

• Discuss some programs written by students.

• Compare with Scratch program demo.

• Digression: Benefits of Think-Pair-Share activity format.
What is Scratch?

• Programming language developed at MIT in 2006
• See scratch.mit.edu
Why Scratch?

- More fun than delving into C++
- For those of you who have no prior exposure
  - We can first focus on the programming concepts, rather than C++ syntax
  - Transition from Scratch to C++ should be easy
- For those of you who have done C++ programming
  - Here is something different that you can learn
  - Have fun creating games
Scratch - In-class demo of drawing a square

Discuss: Sprite, Stage, Scripts, Blocks Palette
For clearing the stage, click Pen-block->double click 'clear'

Do this live
Scratch - In-class demo of control flow

Discuss:
Control block actions
Conditional statements
Various types of loops
Variables
Loop control variable
Costumes

One example is shown. Modify dynamically in-class, depending on need and interest

See: demo01-square.sb and modifications
Announcements

• **No class on 14\textsuperscript{th} and 15\textsuperscript{th} Jan.**
• Lab batches will be put up on Moodle today.
• Lab will run every day next week, including 14\textsuperscript{th} Jan.

• Lab activities:
  - Log into an OSL machine
  - Get familiar with some basic Linux commands
  - Try out the given Scratch programs
  - Upload your assignment