



Hello, World!

EMT1111: Logic and Problem Solving | Fall 2016 | Dr. Mendoza

LESSON 1(Labs): Drawing (Robots, Programs, and Algorithms)


UNIT 1: CONTROLLING A VIRTUAL, DRAWING, ROBOT (YOU CAN
CODE!)




Lab 1

Use these symbols to write a program that would draw each image.


Move One
Square Right


Move One
Square Left


Move One
Square Up


Move One
Square Down


Fill-In Square
with Color

Start
Here

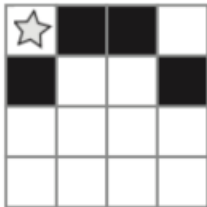


Image 1

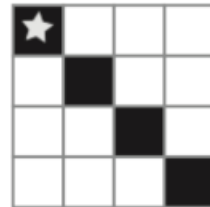


Image 2

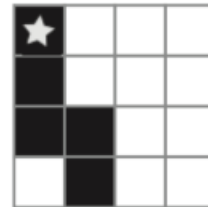


Image 3

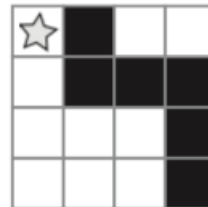


Image 4

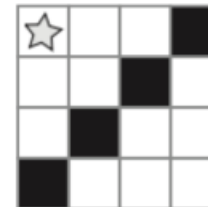


Image 5

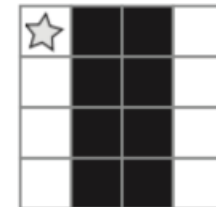


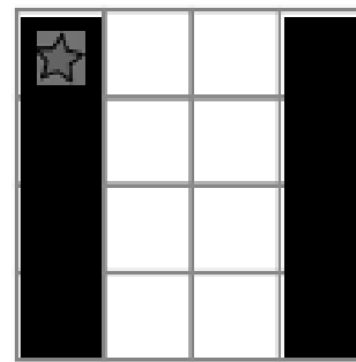
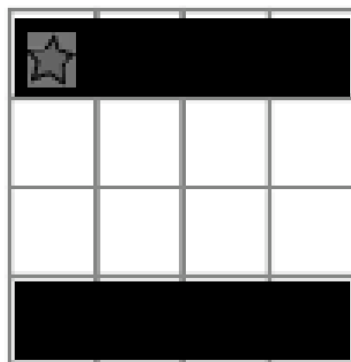
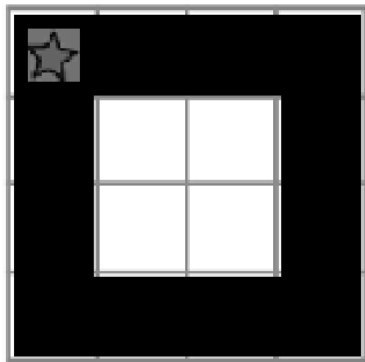
Image 6

Lab 2

Use these symbols to write a program that would draw each image.

→ Move One Square Right ← Move One Square Left ↑ Move One Square Up ↓ Move One Square Down ⚡ Fill-In Square with Color

Start Here



Extending our programming language

- The only instructions that the drawing machine accepts are the following symbols:



- Plus the following **looping instruction**:


`REPEAT n (sequence)`

where n must be a positive integer indicating the number of times the instructions inside the repeat will be performed


Programming Languages and Programs

Programming Language


Move One
Square Right


Move One
Square Left






Move One
Square Up


Move One
Square Down


Fill-In Square
with Color

REPEAT n (sequence)

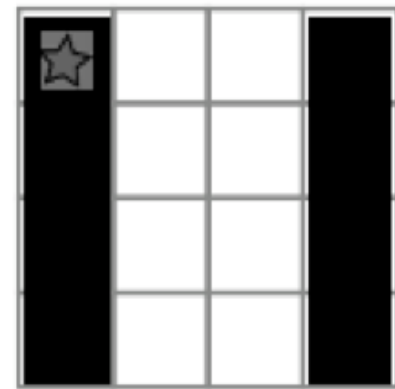
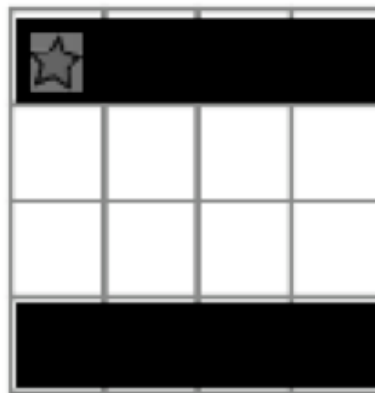
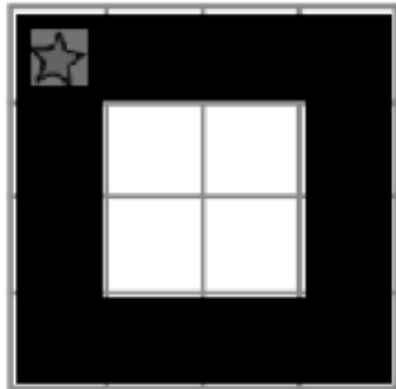
Program

Step 1 REPEAT 3 ( →)
Step 2 
Step 3 REPEAT 3 (↓)
Step 4 REPEAT 3 ( ←)
Step 5 

Lab 3

- Solve the same exercises you solved for Lab2, but this time, use loops wherever applicable

Start
Here



Debugging

Finding and fixing problems in your program

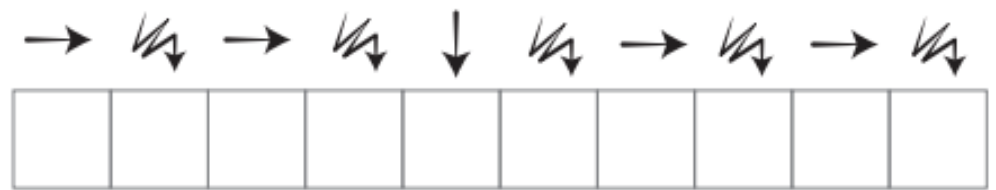
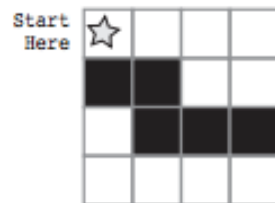
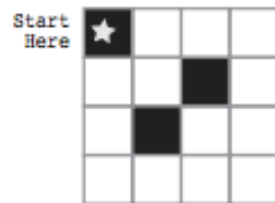
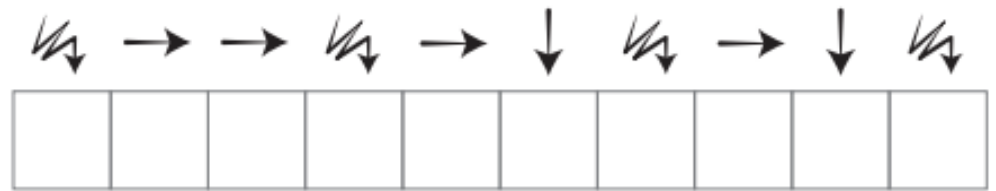
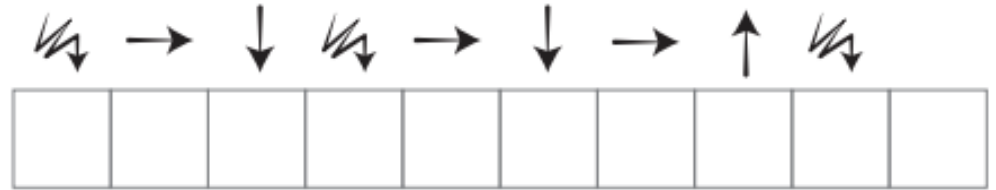
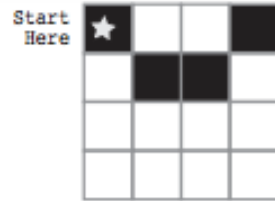


```
public client static void reFreshCallerDataSource(Object _callerFormDataSource,
                                                    boolean _recordExists,
                                                    boolean _doReSearch)
{
    if (_recordExists)
    {
        if (_doReSearch)
        {
            _callerFormDataSource.reSearch(true);
        }
        else
        {
            _callerFormDataSource.reRead();
            _callerFormDataSource.reFresh();
            if (_callerFormDataSource.HasMethod(_callerFormDataSource, identifierStr(reReadLines)))
            {
                _callerFormDataSource.reReadLines();
            }
            _callerFormDataSource.active();
        }
    }
}
```

A magnifying glass with a black handle and a silver rim is positioned over the code snippet. The lens is focused on the line: `if (_callerFormDataSource.HasMethod(_callerFormDataSource, identifierStr(reReadLines)))`. The rest of the code is slightly blurred.

Lab 4

Debug the programs to find the error



Homework

- Read Chapter 1 of the textbook:

<http://interactivepython.org/runestone/static/thinkcspy/GeneralIntro/toctree.html>

- Graph Paper Programming Assessment Worksheet

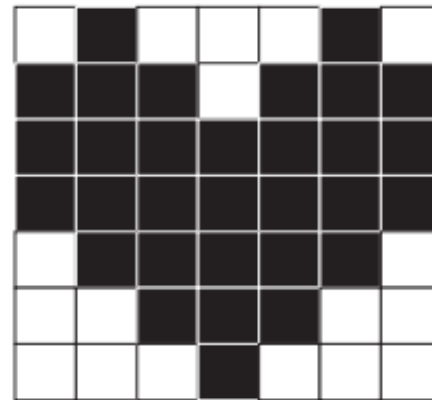
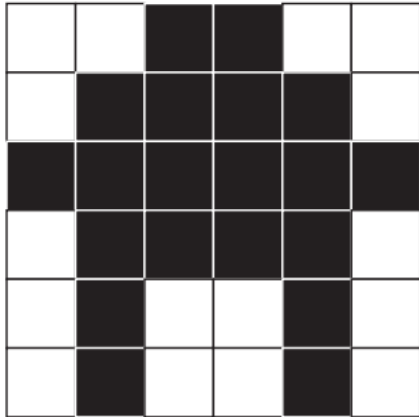
<https://openlab.citytech.cuny.edu/emt1111f16/files/2011/06/Assessment1-GraphPaperProgramming.pdf>



Extra credit exercises



Use the repetition function as much as you can



One more exercise

