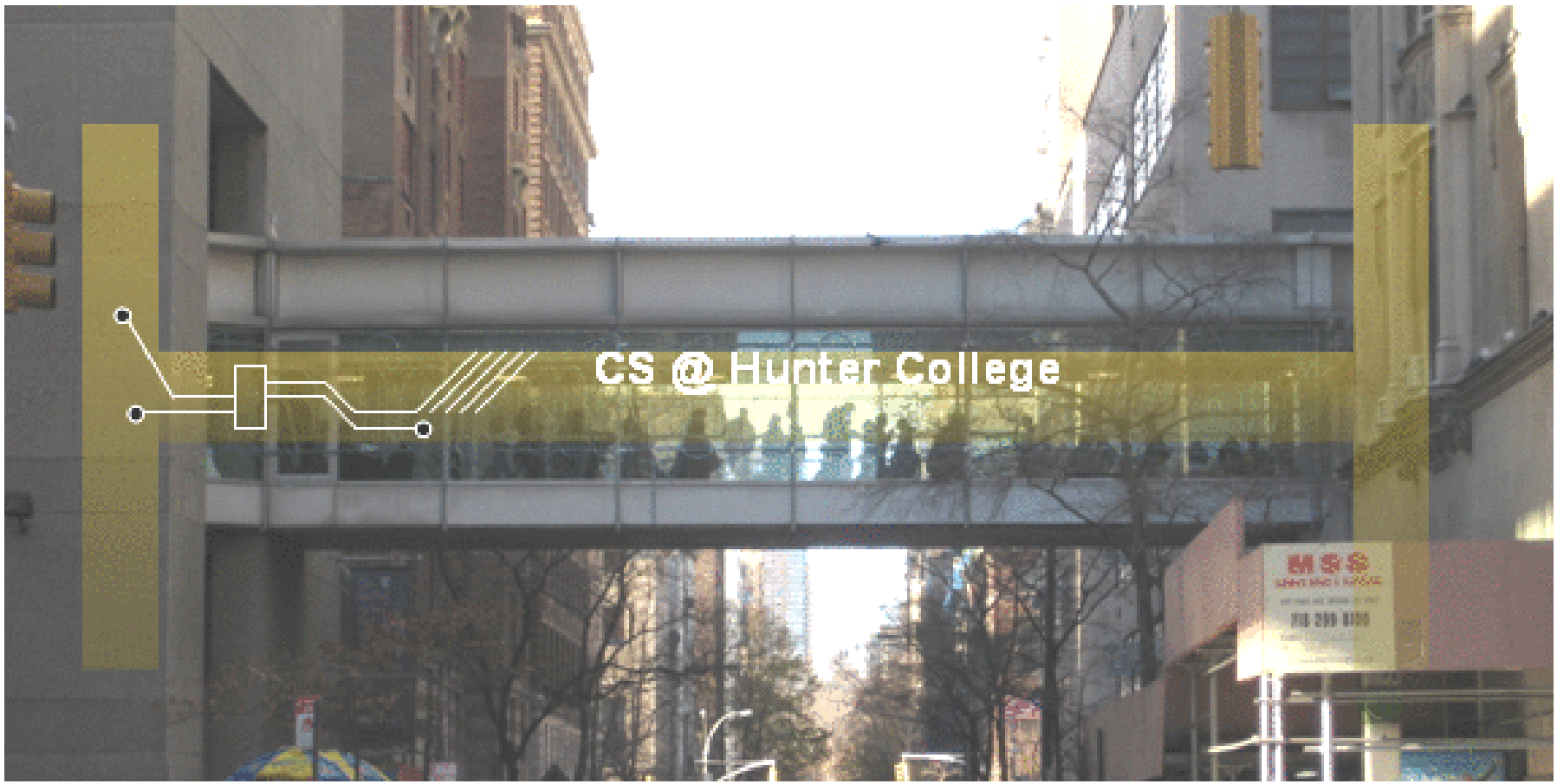
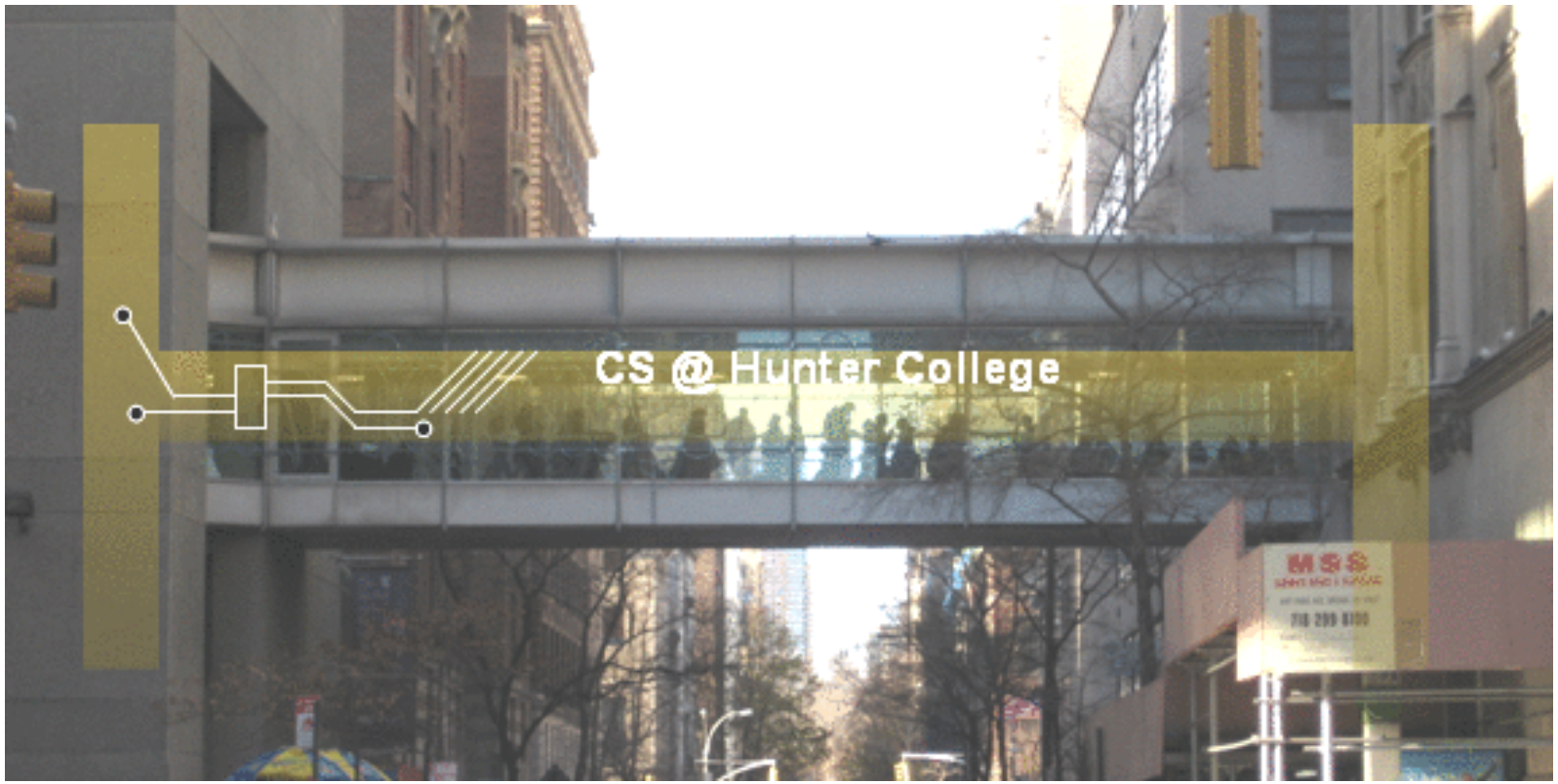
CSci 127: Introduction to Computer Science



hunter.cuny.edu/csci

Welcome



- Prof. Sakas, Department Chair and Course Coordinator

Introductions: Course Coordinators

Dr. Katherine St. John

Instructor

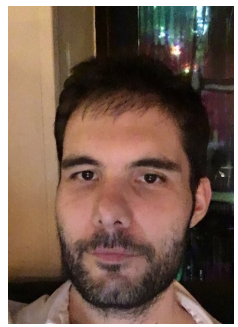
Dr. William Sakas

Chair

Introductions: Recitation Instructors


Basak Taylan


Ekaterina Kistanova


Gwenael Gatto

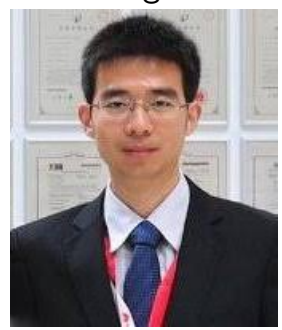

Jiaxing Tan


Katherine Howitt


Minh Nguyen


Subhadarshi Panda

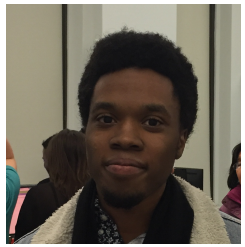

Xiaojie Zhang


Xiaoke (Jimmy) Shen

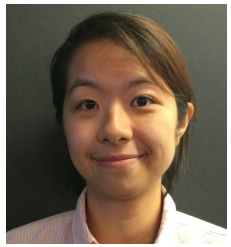
Introductions: Undergraduate Teaching Assistants


Antonio Bountouvas


Alvin Lam


Brian Campbell

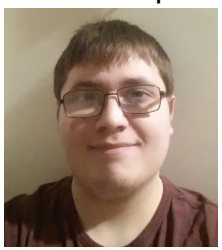

Calvin Quach


Carol Chau


Dandan Lin


Jaime Canizales


Jack Chen


Jakub Taraska

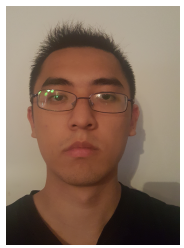

Jesse Goodspeed


Karen Medlin


Karoline Dubin

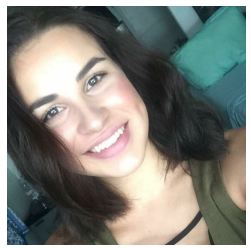

Lily Caplan


Munem Rastgir


Nicky Cen


Olga Kent


Qiuqun Wang


Savannah Nester


Silvena Chan


Usmaan Sahak


Vincent Zheng


Yasmeen Hassan

Syllabus

CSci 127: Introduction to Computer Science

Catalog Description: 3 hours, 3 credits: This course presents an overview of computer science (CS) with an emphasis on problem-solving and computational thinking through 'coding': computer programming for beginners. Other topics include: organization of hardware, software, and how information is structured on contemporary computing devices. This course is pre-requisite to several introductory core courses in the CS Major. The course is also required for the CS minor. MATH 12500 or higher is strongly recommended as a co-req for intended Majors.

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(Show syllabus webpage)

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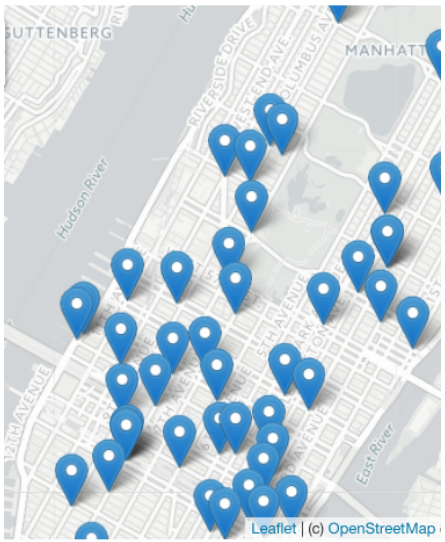

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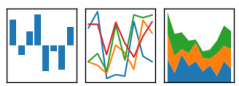

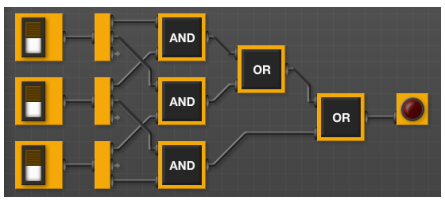

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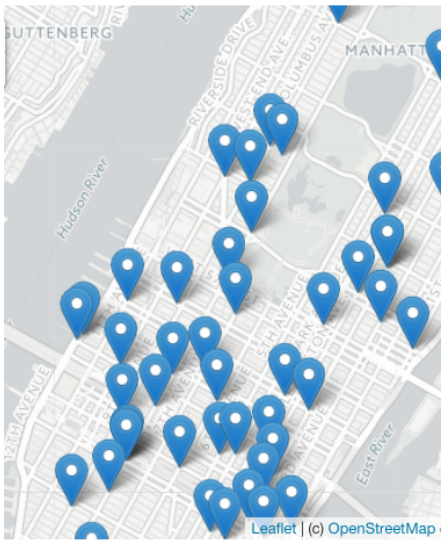

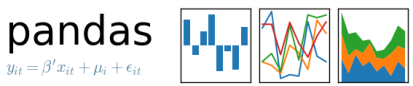

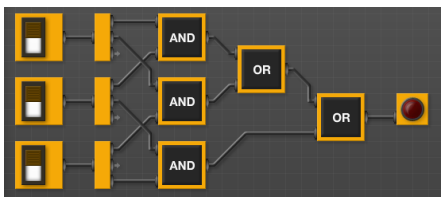

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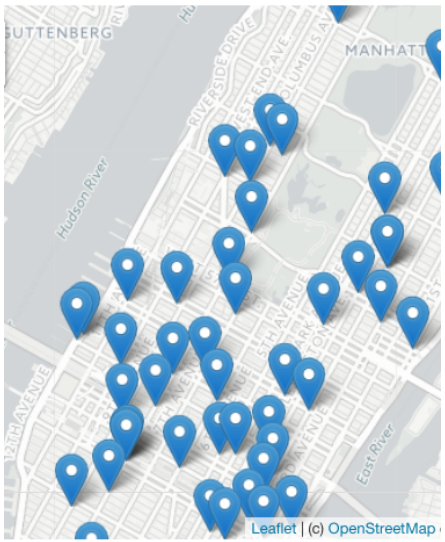

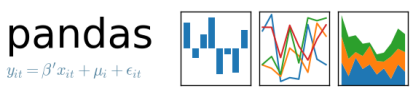

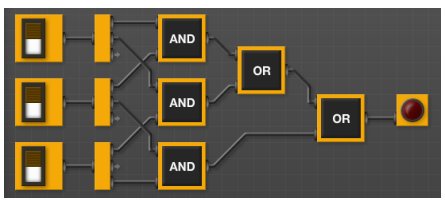

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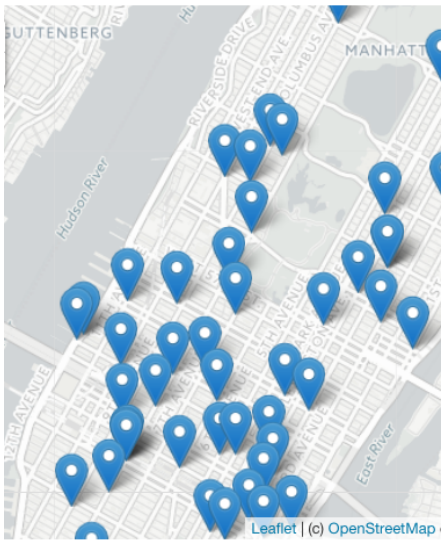

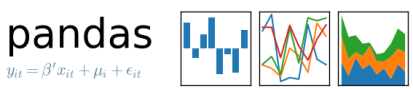

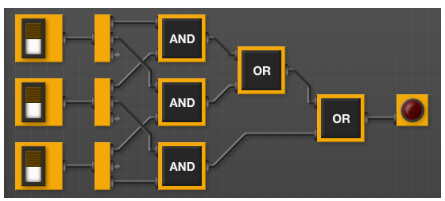

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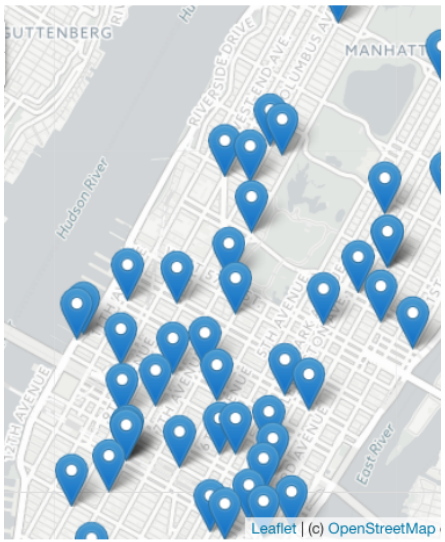

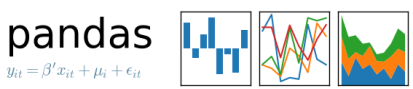

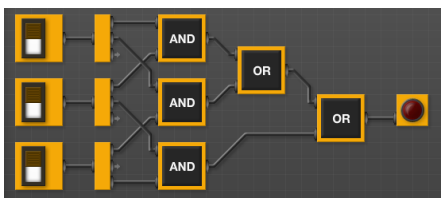

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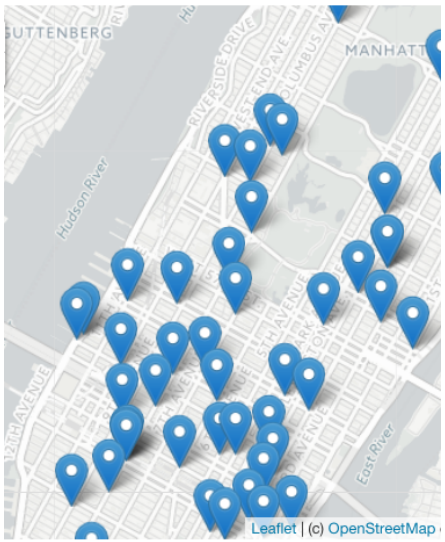

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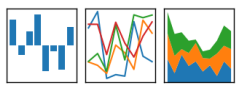

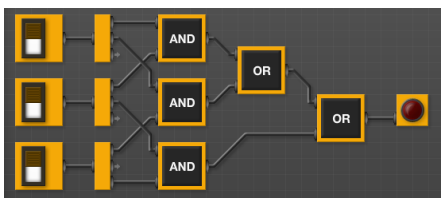

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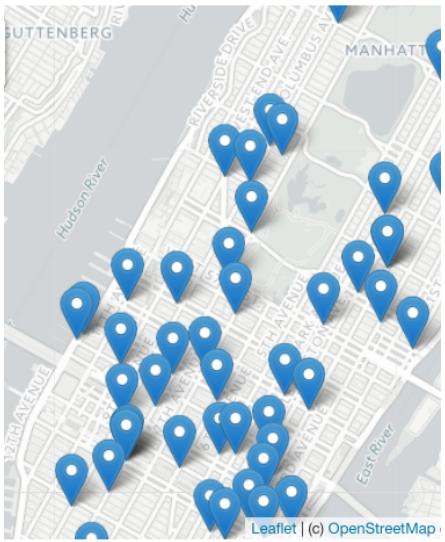

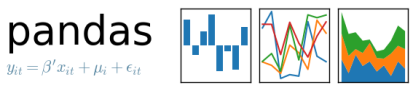

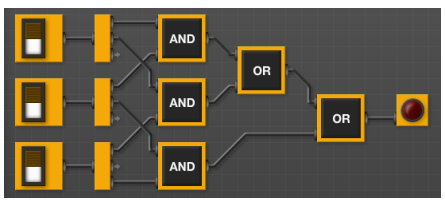

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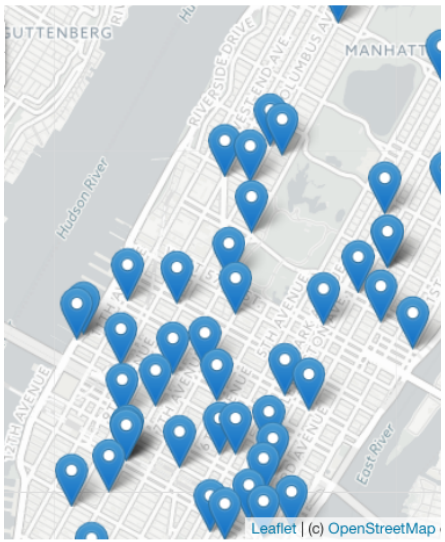

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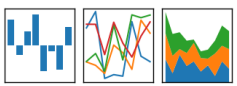

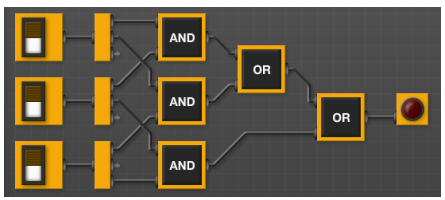

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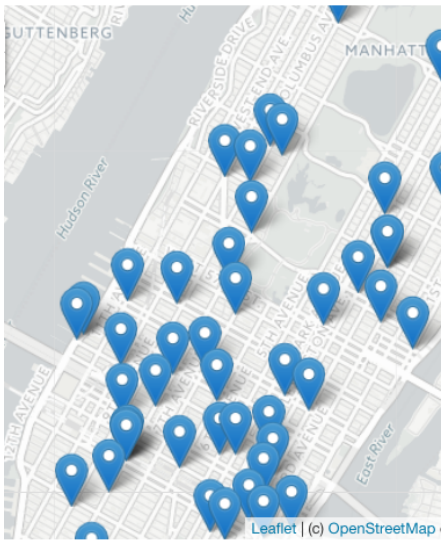

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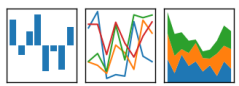

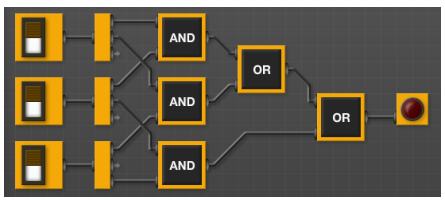

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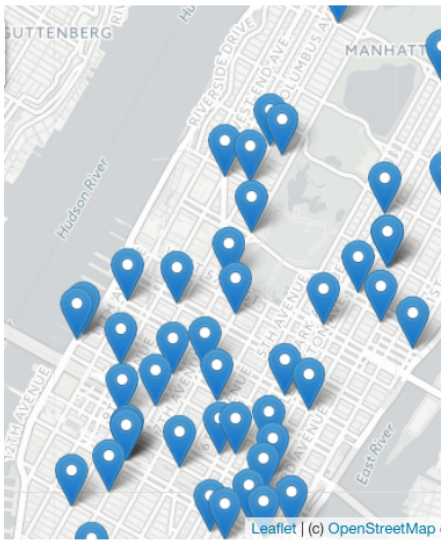

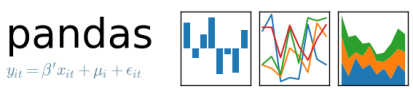

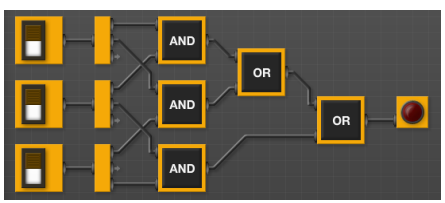

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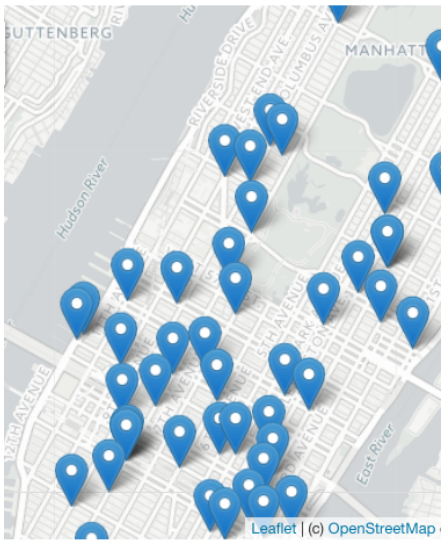
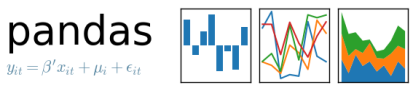
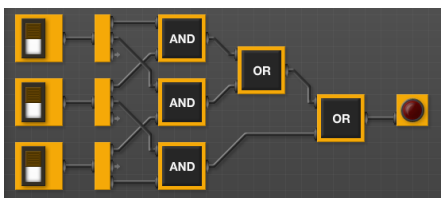
Syllabus: Topics







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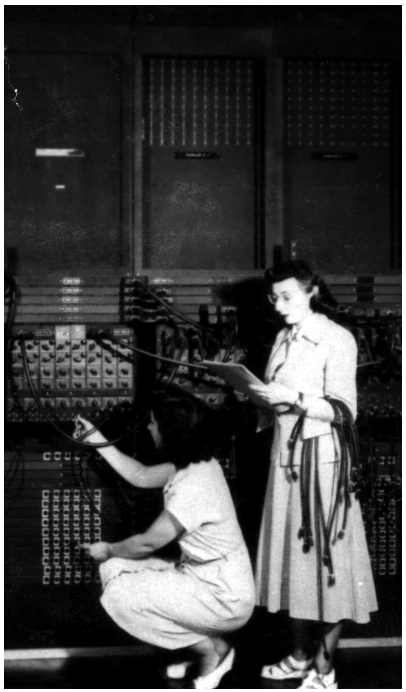
Class Structure

Lecture:

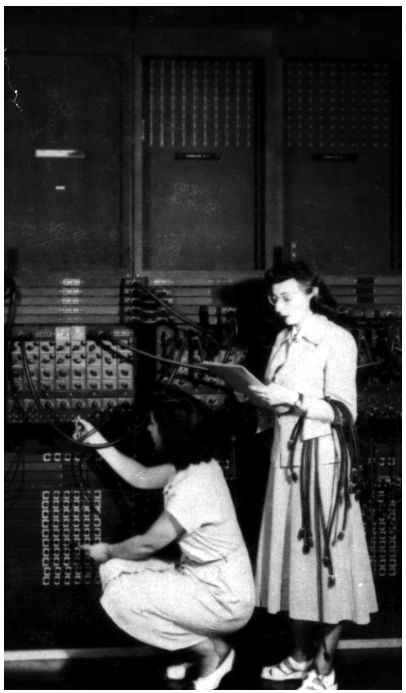
- Tuesdays, 11:10am-12:25pm, 118 North



First "computers"

ENIAC, 1945.

Class Structure



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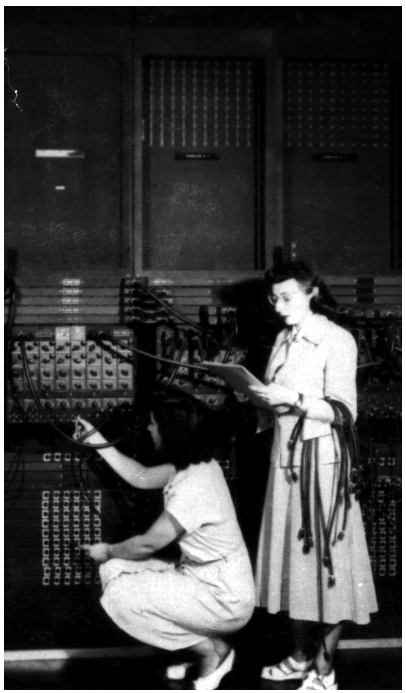

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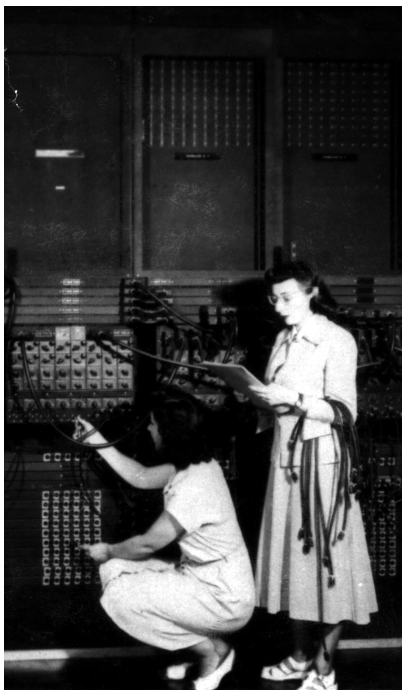

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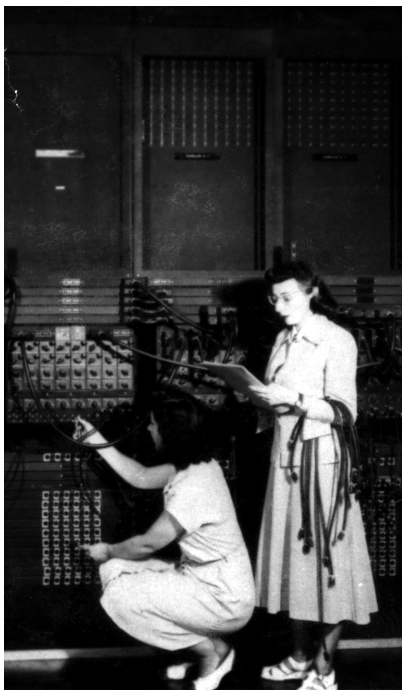

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Recitation Section:

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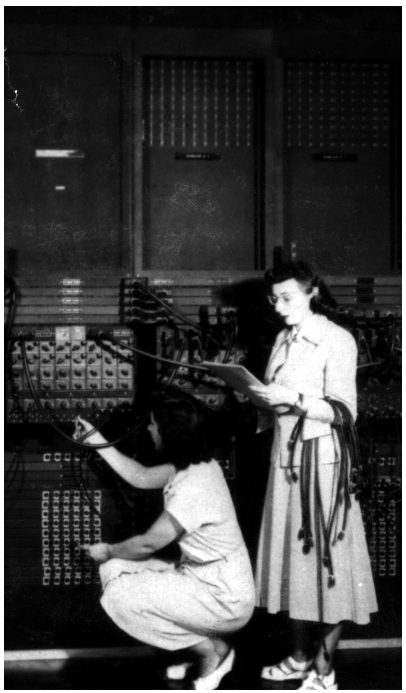

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- Tuesdays, 11:10am-12:25pm, 118 North
- Lecture Slips: only help your grade, final exam replaces incomplete or missing slips
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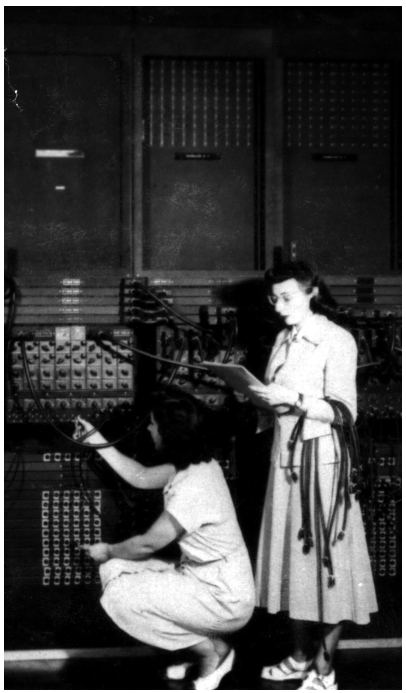

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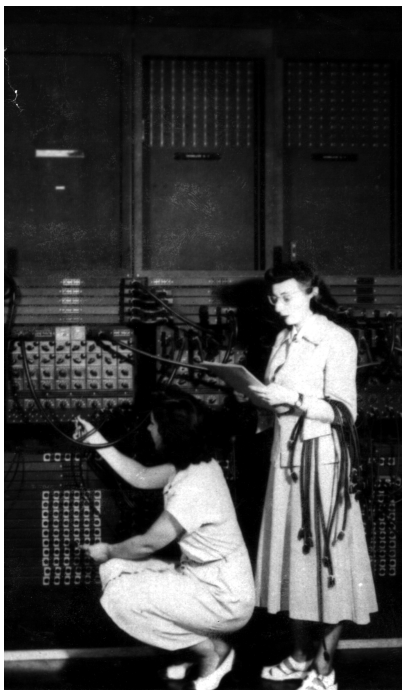

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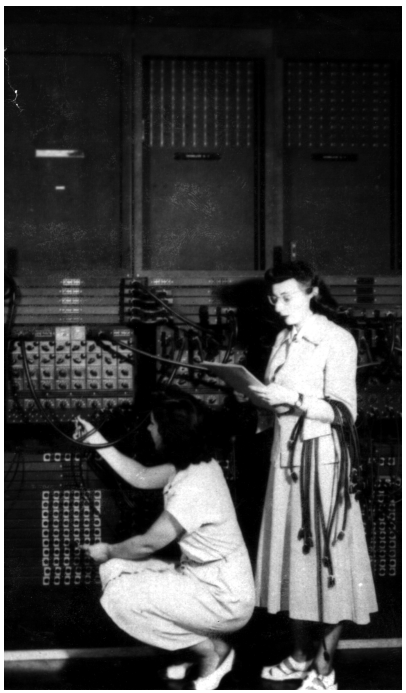

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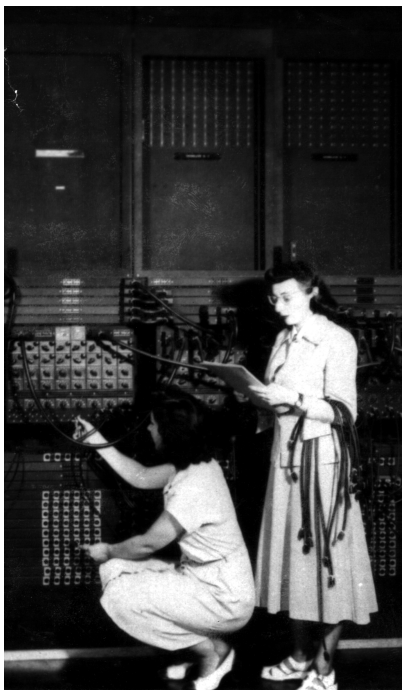

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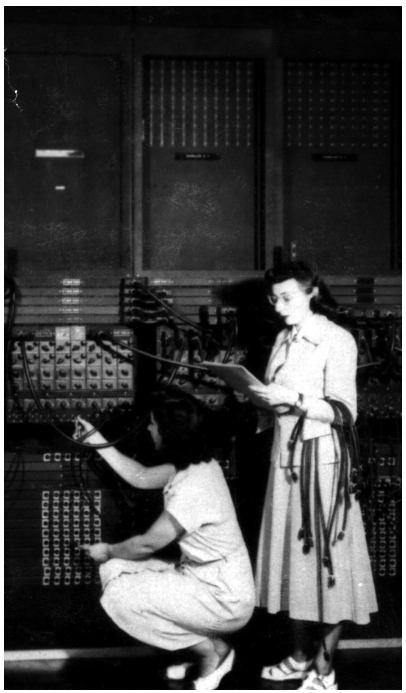

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- Gradescope: email invite sent Sunday.

Introductions: Your Turn

- Introduce yourself to two classmates (that you have not met before).
- Write down names & interesting fact on lecture slip.

Today's Topics

- Introduction to Python
- Definite Loops (`for`-loops)
- Turtle Graphics
- Algorithms

Introduction to Python

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- The first lab goes into step-by-step details of getting Python running.
- We'll look at the design and basic structure (no worries if you haven't tried it yet in lab).

First Program: `Hello, World!`

Demo in `pythonTutor`

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#Name:  Thomas Hunter
#Date:  September 1, 2017
#This program prints:  Hello, World!

print("Hello, World!")
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- Output to the screen is: `Hello, World!`
- Can replace `Hello, World!` with another string to be printed.

Variations on Hello, World!

```
#Name:  L-M Miranda
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#This program prints intro lyrics

print('Get your education,')
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- Results in three lines of output.
- Can use single or double quotes, just need to match.

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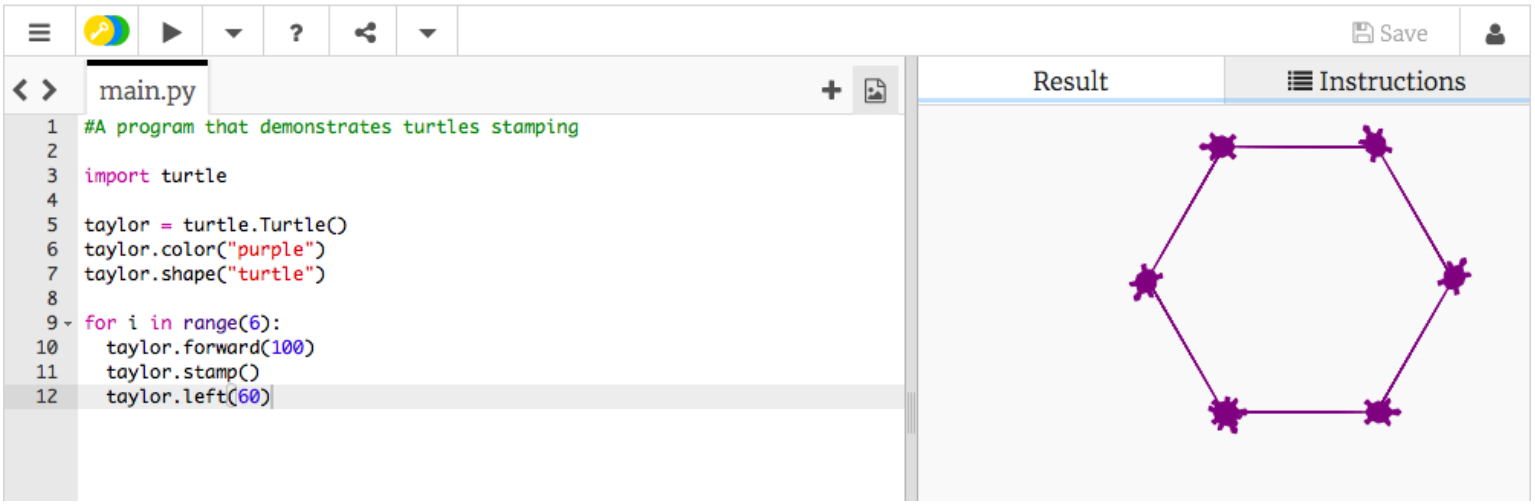
- (Fancier turtle demo)

Turtles Introduction



- Creates a turtle, called `taylor`

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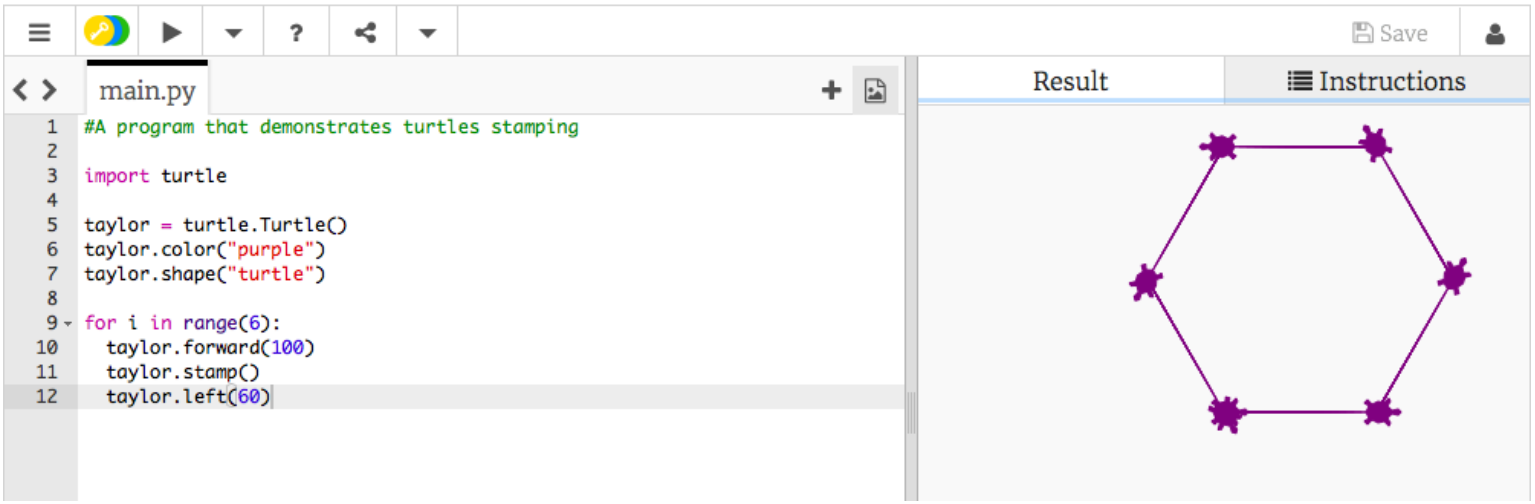

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- Changes the color (to purple) and shape (to turtle-shaped)

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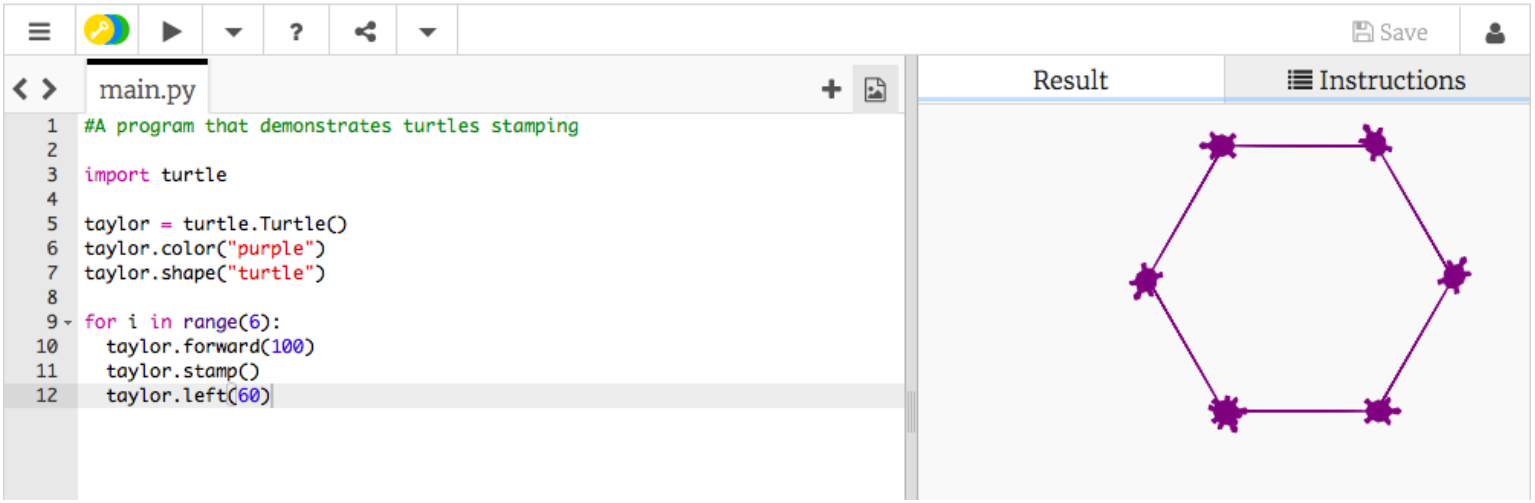

- Creates a turtle, called `taylor`
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- Repeats 6 times:

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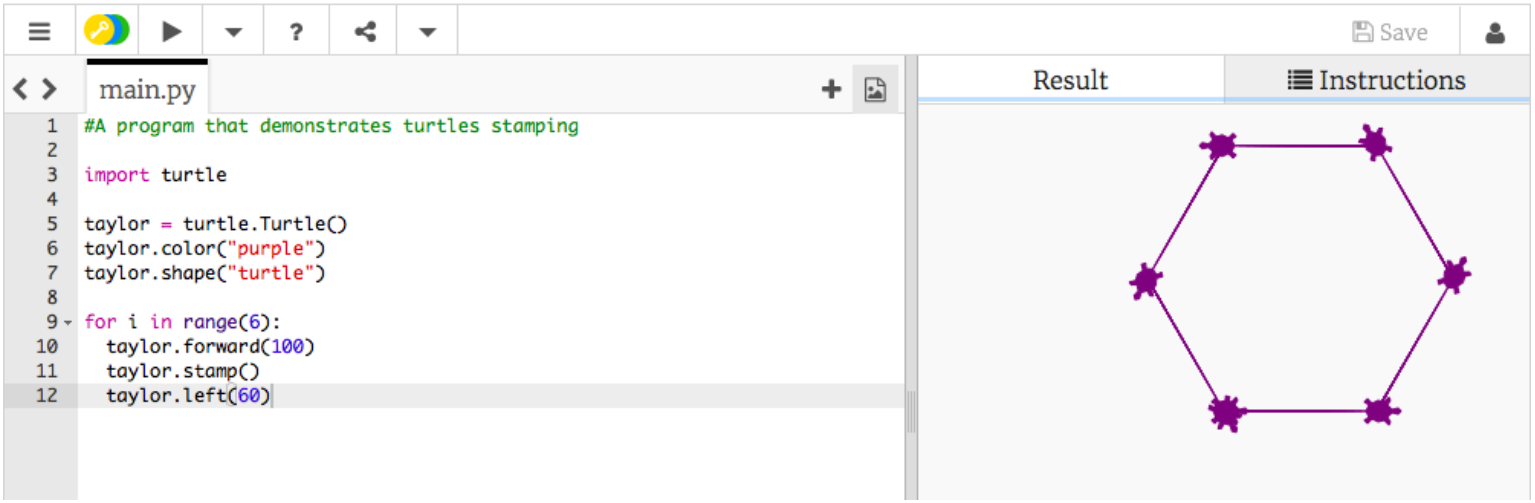


- Creates a turtle, called `taylor`
- Changes the color (to purple) and shape (to turtle-shaped)
- Repeats 6 times:
- Move forward; stamp; and turn left 60 degrees

Group Work

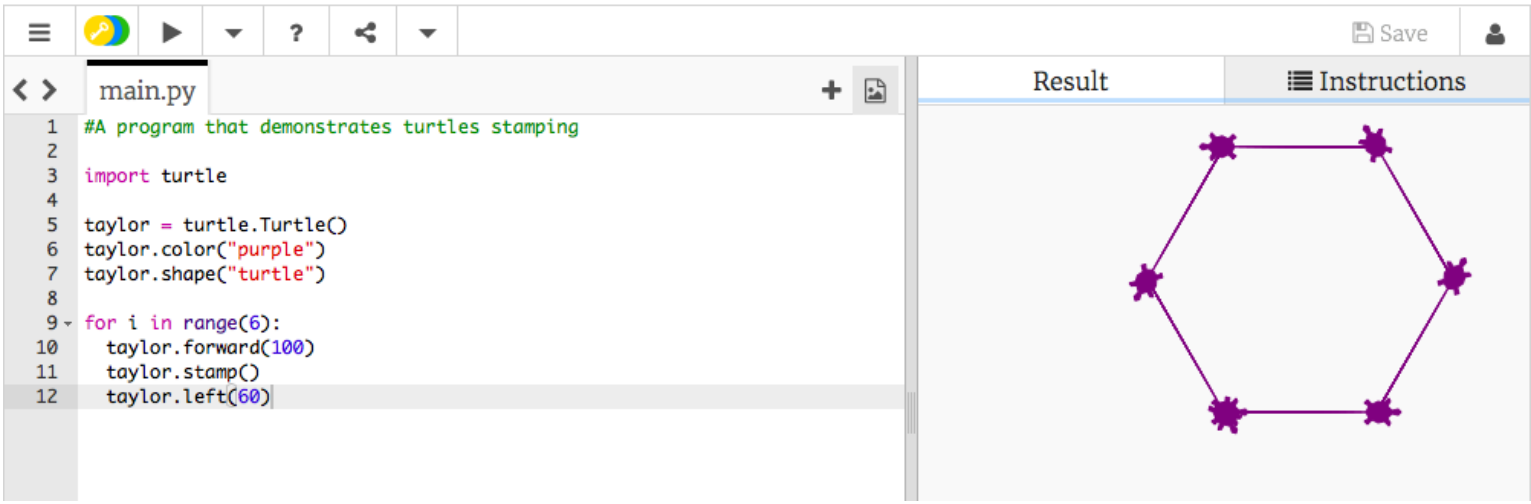
Working in pairs or triples:

1. Write a program that will draw a 10-sided polygon.
2. Write a program that will repeat the line:

   ```
   I'm lookin' for a mind at work!
   ```

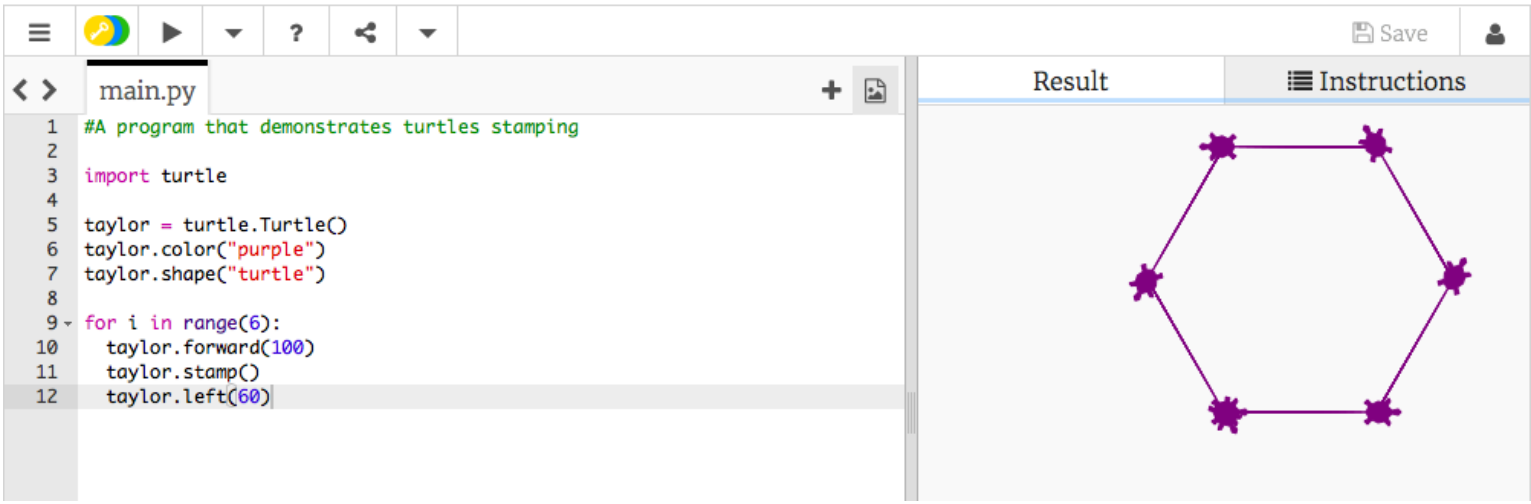
   three times.

Decagon Program



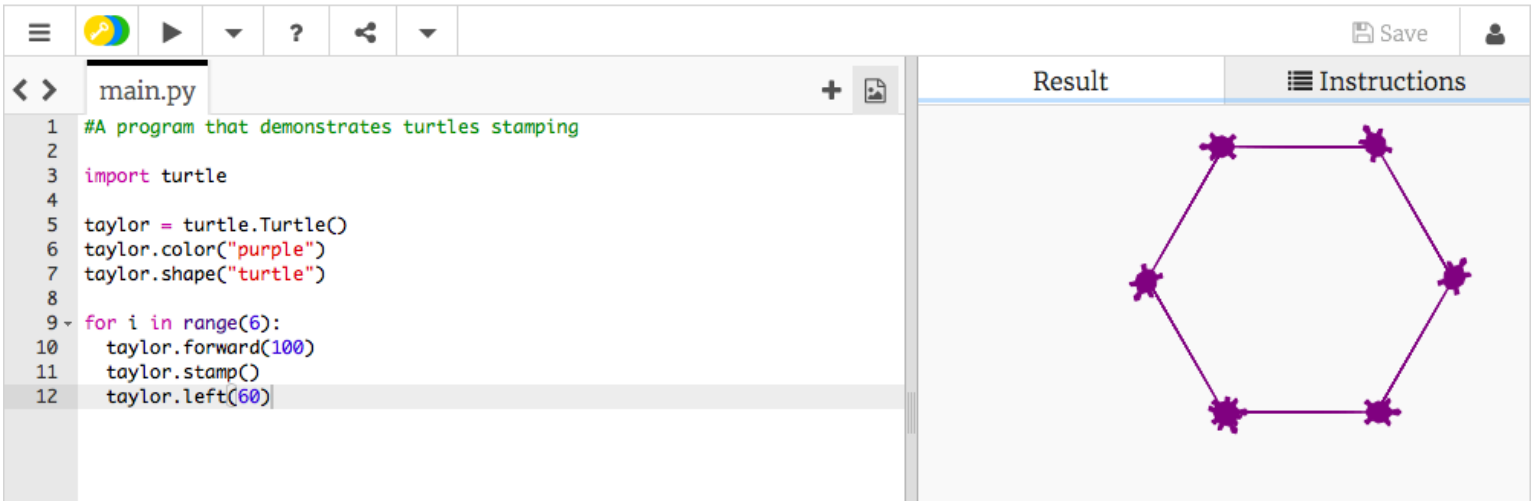
- Start with the hexagon program.

Decagon Program



- Start with the hexagon program.
- Has 10 sides (instead of 6), so change the `range(6)` to `range(10)`.

Decagon Program



- Start with the hexagon program.
- Has 10 sides (instead of 6), so change the `range(6)` to `range(10)`.
- Makes 10 turns (instead of 6),
  so change the `taylor.left(60)` to `taylor.left(360/10)`.

Work Program

2. Write a program that will repeat the line:

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- Instead of turtle commands, repeating a print statement.
- Completed program:

  ```
  # Your name here!
  for i in range(3):
      print("I'm lookin' for a mind at work!")
  ```

What is an Algorithm?

From our textbook:

- An algorithm is a process or set of rules to be followed to solve a problem.

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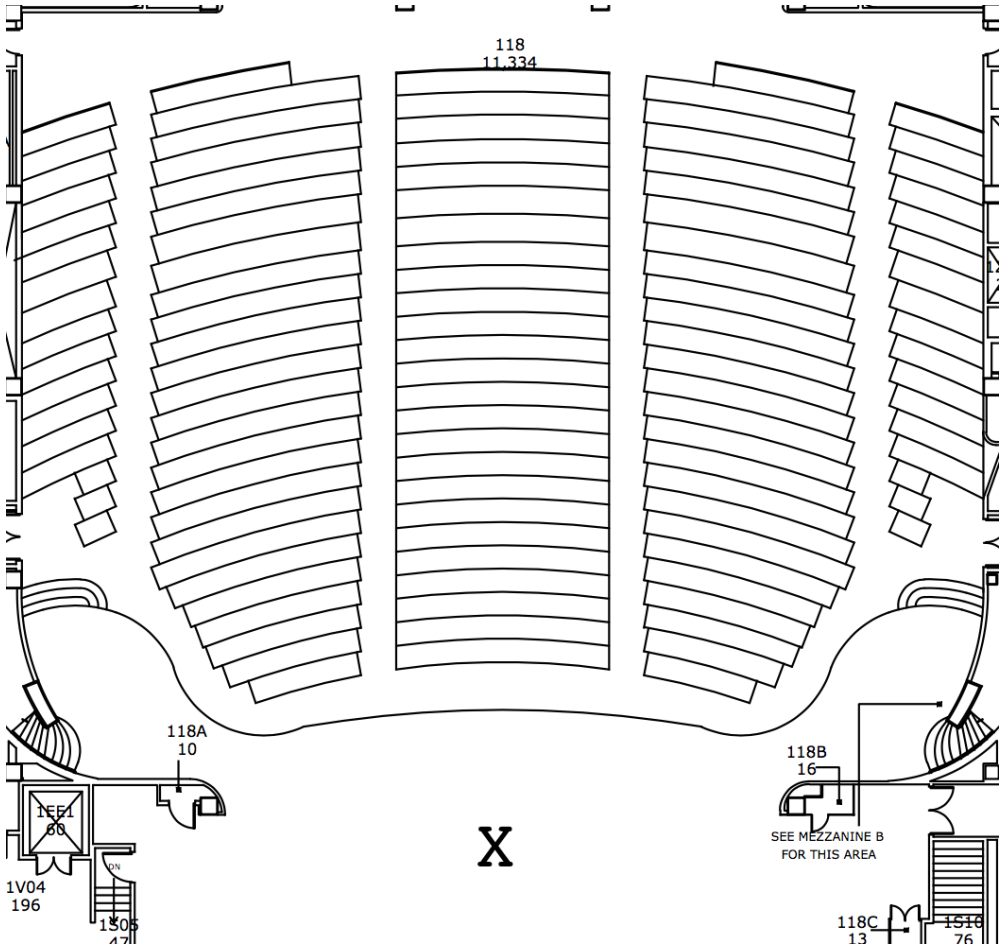
- An algorithm is a process or set of rules to be followed to solve a problem.
- Programming is a skill that allows a computer scientist to take an algorithm and represent it in a notation (a program) that can be followed by a computer.

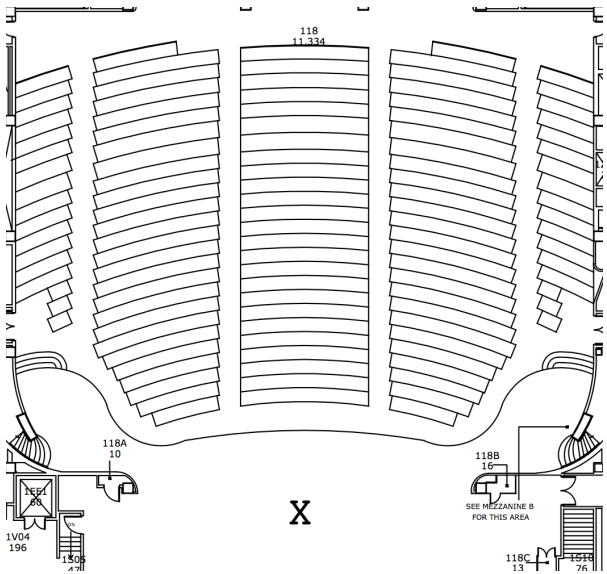
Group Work



Working in pairs or triples:

1. On the floorplan, mark your current location.
2. Write step-by-step directions to get to/from `X`.

Group Work



- Find another group, near you, that's going in the "opposite" way.

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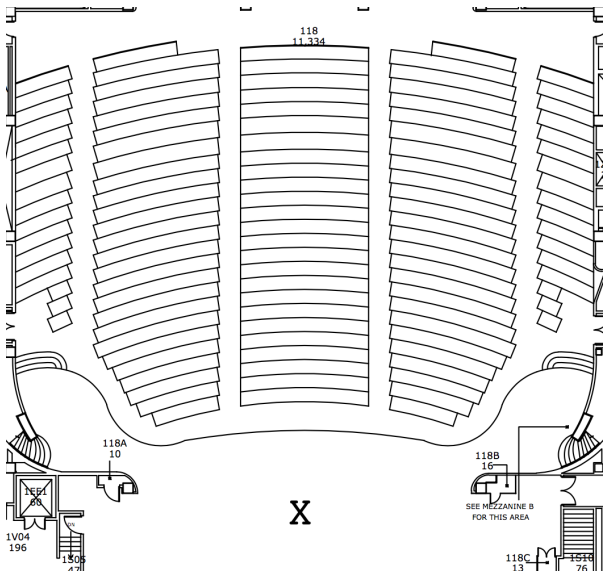

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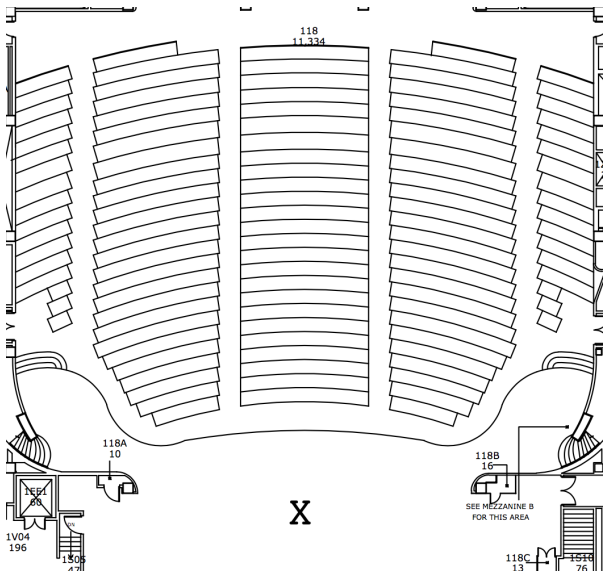

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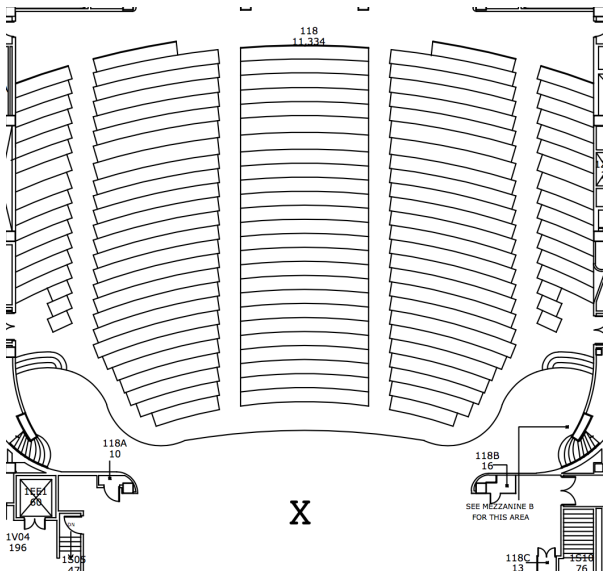

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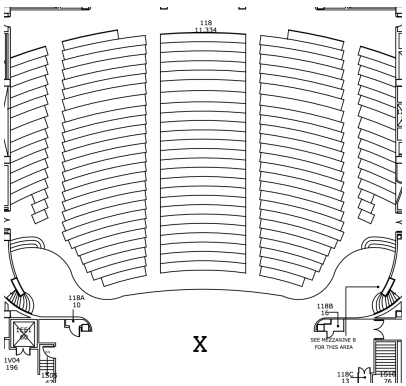
- Annotate any changes needed to the directions.

Recap

- On lecture slip, write down a topic you wish we had spent more time (and why).



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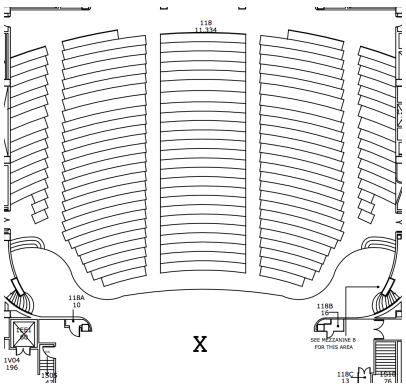

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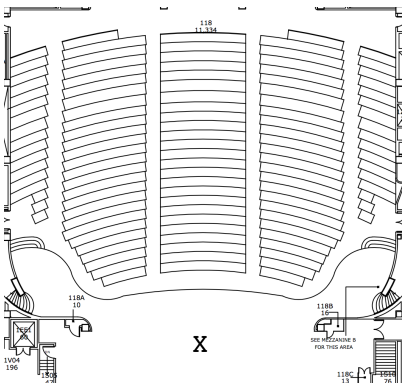

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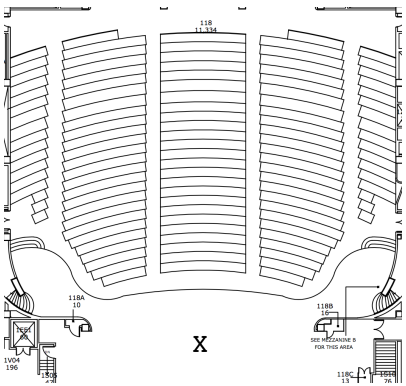

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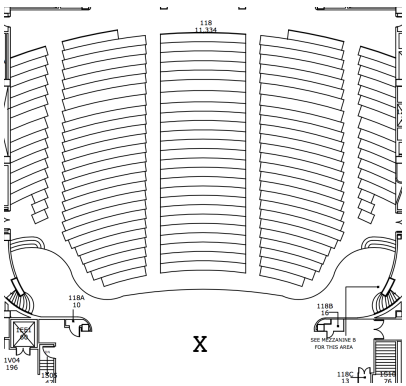

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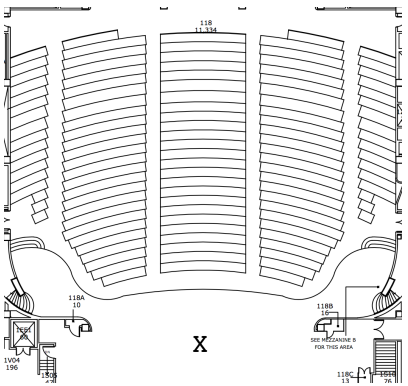

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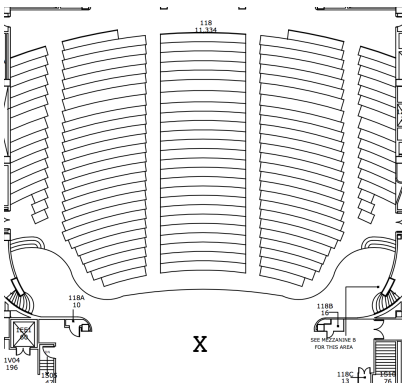

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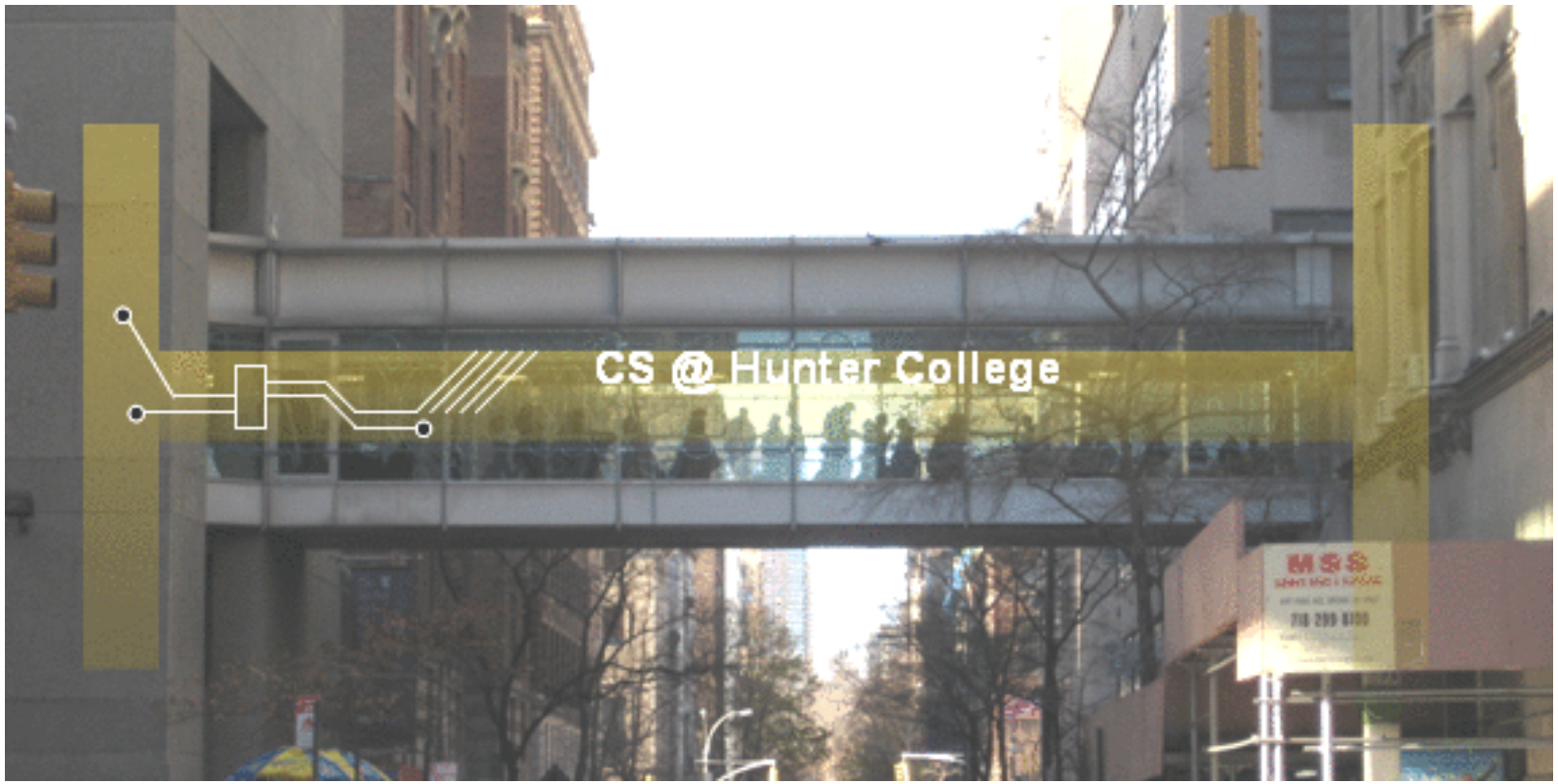
  - variables containing turtles.

Lecture Slips & Writing Boards



- Turn in lecture slips & writing boards as you leave...