

Assignment

Visual Clocks

Inputs + Outputs: INTERACTIVITY

**Digital + Interactive + Visual
Experiences?**

MARIO
525150

×42

WORLD
8-2

TIME
364





L2 Call Assassins / Arrow Storm

△ Eagle vision / Stop

Attack □

○ Sheathe

Fast walk X



15

X 19



2517325 f

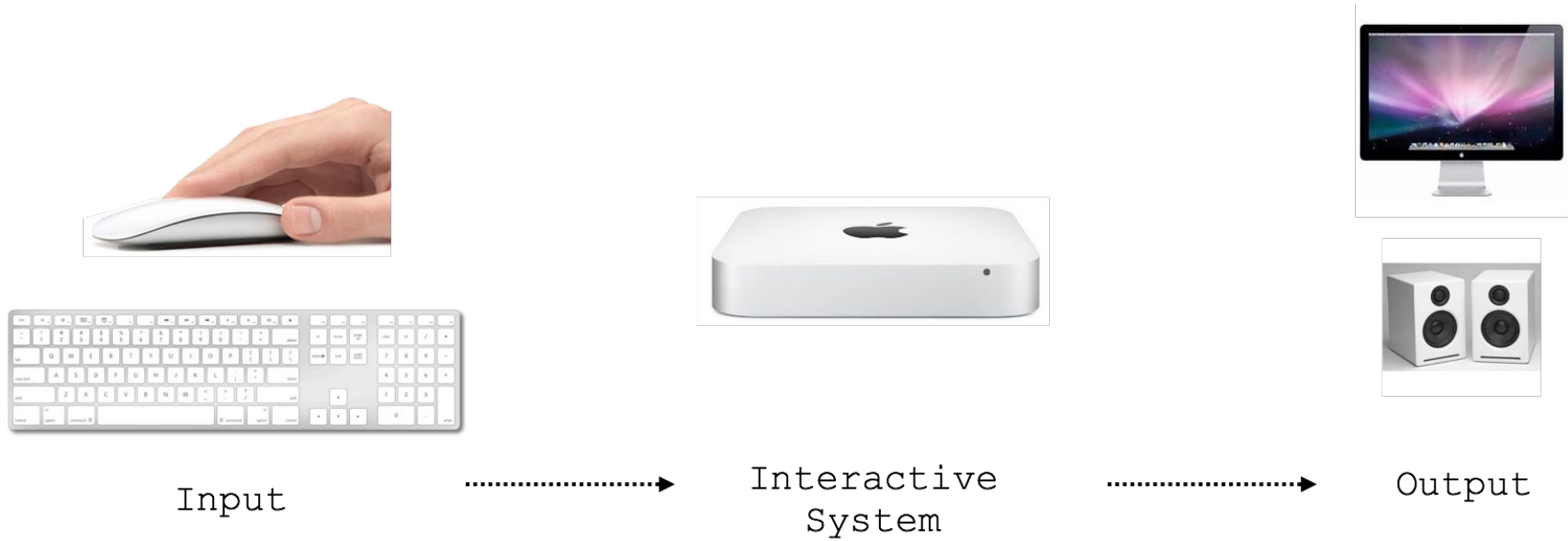
498 ▲







Most common form of interaction with computers



INPUTS !

Doin' stuff with the KB/MOUSE

Keyboard Interactions

Keyboard!

Doing stuff with code is cool, but
controlling sketches with inputs is even
COOLER.

Keypressed : ways to do it

1. Make an 'if' statement in the draw() loop:

```
if (keyPressed){  
    //Do something when ANY key is pressed  
}  
  
if (keyReleased){  
    //Do something when ANY key is released  
}
```

Keypressed : ways to do it

2. As a separate function:

```
void keyPressed() {  
    //Do something when any key is pressed  
}
```

Keypressed : specific letters

```
if (keyPressed) { // or void keyPressed() {  
  
    if (key == 's') {  
  
        saveFrame("line-#####.jpg");  
  
    }  
  
    if (key == ' ') { // this means the Spacebar key  
  
        restart();  
  
    }  
  
}
```


Keypressed : special keys

```
if (keyPressed) { // or void keyPressed() {  
  
    if (key == CODED) {  
  
        if (key == UP) {  
  
            yPosition -= 1;  
  
        }  
  
        if (key == DOWN) {  
  
            yPosition += 1;  
  
        }  
    }  
}
```

Letters vs. special keys

Letters/numbers are "ASCII (American Standard Code for Information Interchange)" characters.

ASCII translates characters into computer code.

If you need a specific ASCII code, look it up!

<http://www.ascii-code.com/>

Special keys:

UP, DOWN, LEFT, RIGHT, ALT, CTRL, SHIFT, etc.

Use the "if (key == CODED)" syntax for these:

Mouse Interaction

mouseButton & mousePressed

Work just like key and keyPressed for keyboard input

mouseButton = a variable that gets changed to LEFT, CENTER, or RIGHT whenever the mouse is clicked

mousePressed = a BOOLEAN that is true/false depending if the mouse was pressed

mousePressed vs void mousePressed()

```
void draw() {  
    if (mousePressed && (mouseButton == LEFT)) {  
        fill(0);  
  
    else if (mousePressed && (mouseButton == RIGHT)) {  
        fill(255);  
  
    else {  
        fill(126);  
  
        rect(25, 25, 50, 50);  
    }  
}
```

mousePressed vs **mousePressed()**

```
void draw() {  
    rect(25, 25, 50, 50);  
}  
  
void mousePressed() {  
    if (mouseButton == LEFT) {  
        fill(0);  
    } else if (mouseButton == RIGHT) {  
        fill(255);  
    } else {  
        fill(126);  
    }  
}
```


Classes & Objects

In Object Oriented Programming

Relationship between Class & Object

Human \longleftrightarrow you

College \longleftrightarrow Stevens

PFont \longleftrightarrow myFont



Some classes we've been using already

PImage

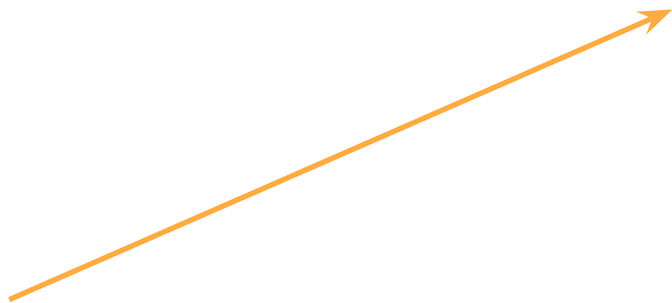
PFont

```
PGraphics pg;
```

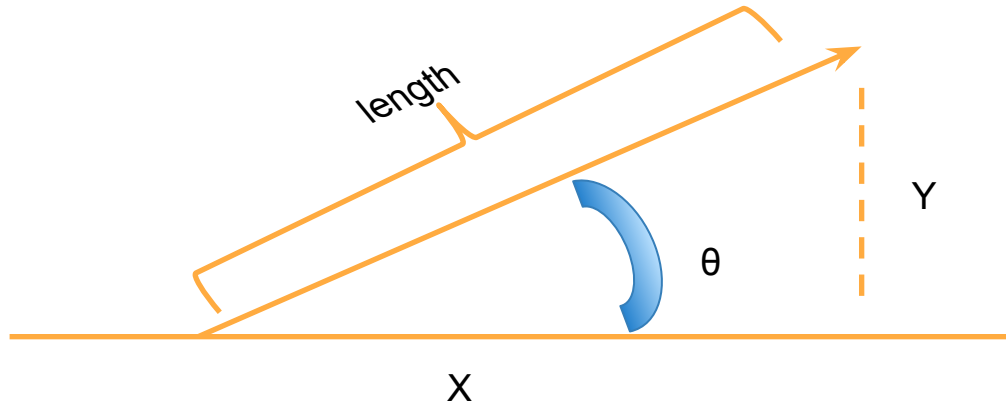
```
// a PGraphics "buffer" where we can draw to
```

Pvector;

- 1) Magnitude
- 2) Direction



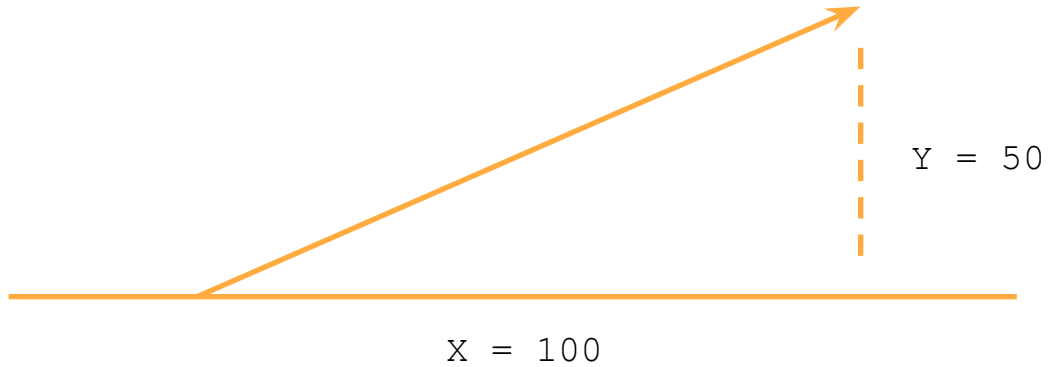
This is an arrow



- 1) Magnitude
- 2) Direction

Notice that there is an X component and a Y component of this arrow's direction

pVector



```
float x;  
float y;
```



```
Pvector location;
```

```
location = new  
Pvector(100, 50);
```

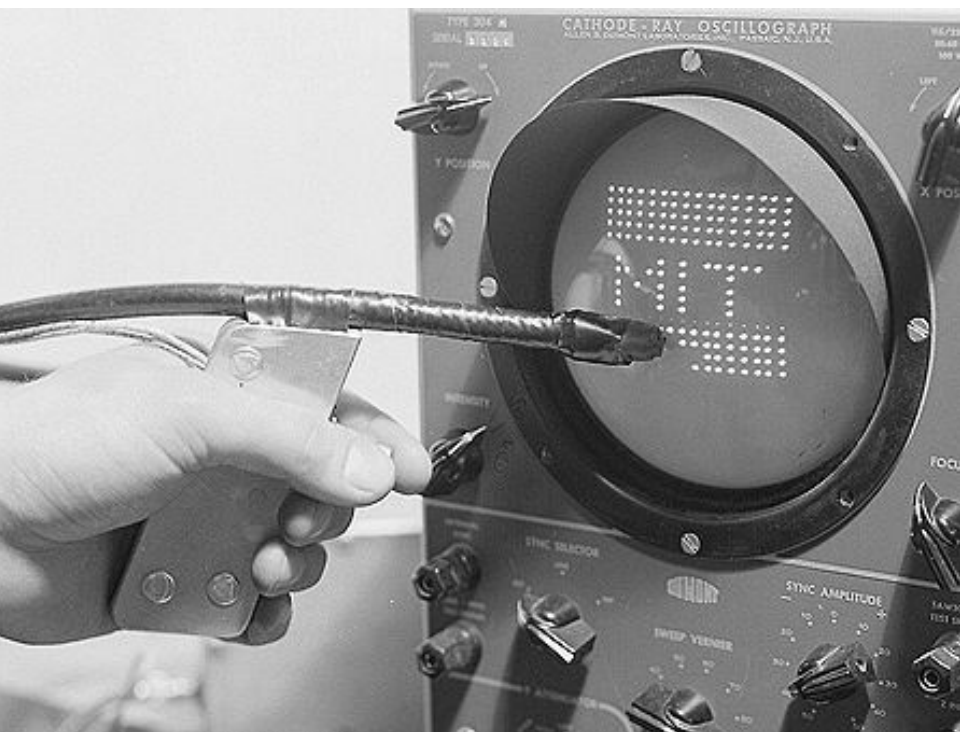
<https://cs1335-documentation.readthedocs.io/en/latest/pVector.html>

Java Robot Class

This class is used to generate native system input events for the purposes of test automation, self-running demos, and other applications where control of the mouse and keyboard is needed



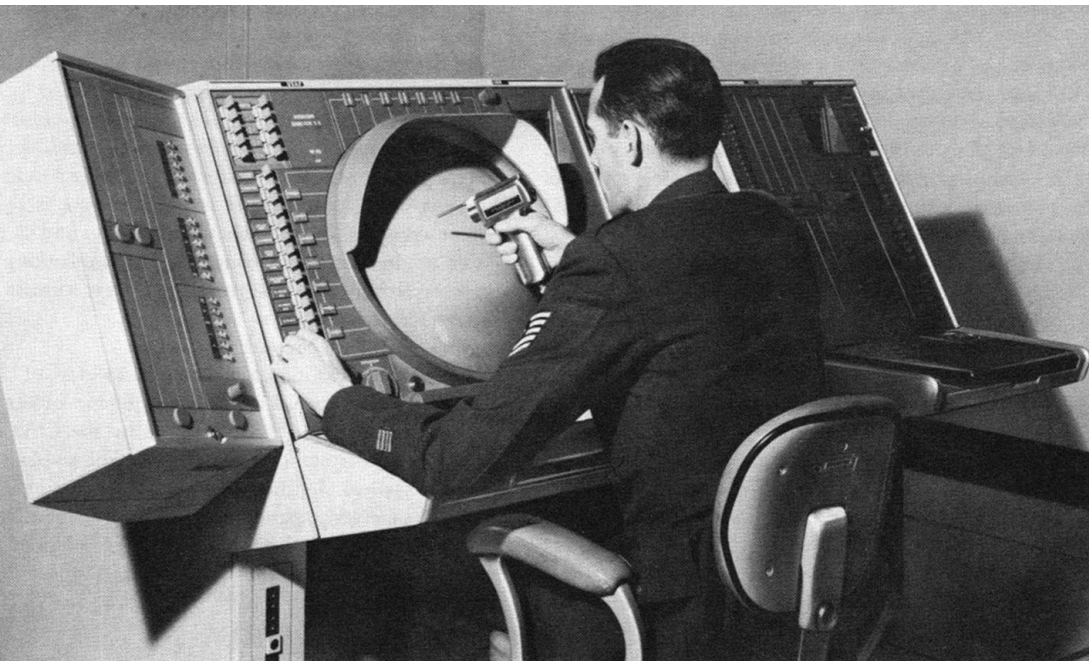
Michael Noll At Bell Labs_1966



Light Pen Prototype Project Whirl wind_1952



RAND Tablet_1965



SAGE-ConsoleOperator, Radar monitors 1957





The first computer mouse
invented by Douglas
Engelbart
1963



Eye Writer Graffiti Research Lab



Laser Tag Graffiti Research Lab 02

Assignment

Playful Something

*To add for playfulness to the experience you can use collisions.
<https://happycoding.io/tutorials/processing/collision-detection>

Some Other Cool Interactive Projects:

<https://www.youtube.com/watch?v=OE25LL91fAY>

<https://vimeo.com/7820888>

<https://vimeo.com/256759496>

<http://www.fursr.com/projects/painstation-2-5>

<http://raaf.org/projects.php?pcat=2&proj=4>

<https://www.youtube.com/watch?v=GlvxvqgOBnw>

<https://vimeo.com/186104890>