

APCSA Toy Night

Sunday, June 5th 6:45-9pm

Lightning Talk Presentation
AP Reading

H E L L O
My name is

Art Simon
Lowell High School, San Francisco

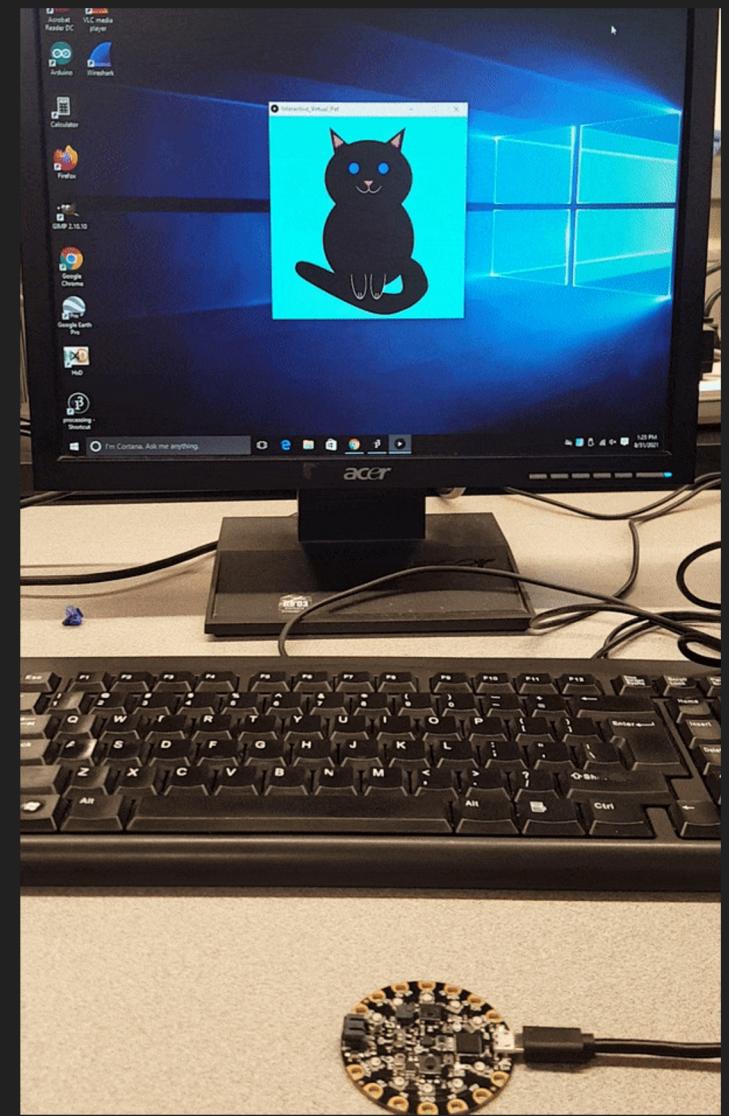
Ask Me About

Processing and Arduinos for AP CS A

Up next: Dennis Bouvier

What is it?

- Processing is a beginner friendly programming environment that is 100% consistent with the AP Subset of Java
- It has lots of easy to use and slick looking graphics capabilities
- And there are many libraries including one for Arduinos like this Adafruit Circuit Playground (currently on sale for \$17.50)
- This assignment asked students to create a virtual pet and use the Circuit Playground light sensor to interact with it



A Basic Program

import statements

sketch_220603a | Processing 3.3.7

File Edit Sketch Debug Tools Help



Declare and initialize the Arduino

sketch_220603a

Get input from the light sensor (0 - 255)

```
1 import processing.serial.*;
2 import cc.arduino.*;
3 Arduino arduino;
4
5 public void setup() {
6   size(500, 500);
7   arduino = new Arduino(this, Ardui
8 }
9
10 public void draw() {
11   background(192);
12   int y = arduino.analogRead(5);
13   System.out.println(y);
14   ellipse(250, 2*y, 50, 50);
15 }
```

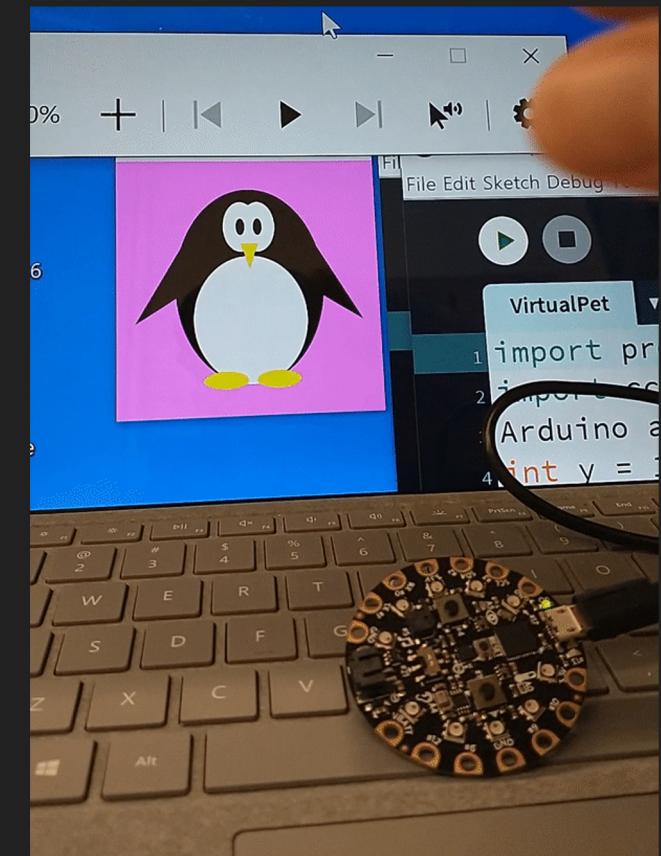
Use that reading to change the position
of an ellipse

A Fancier Program

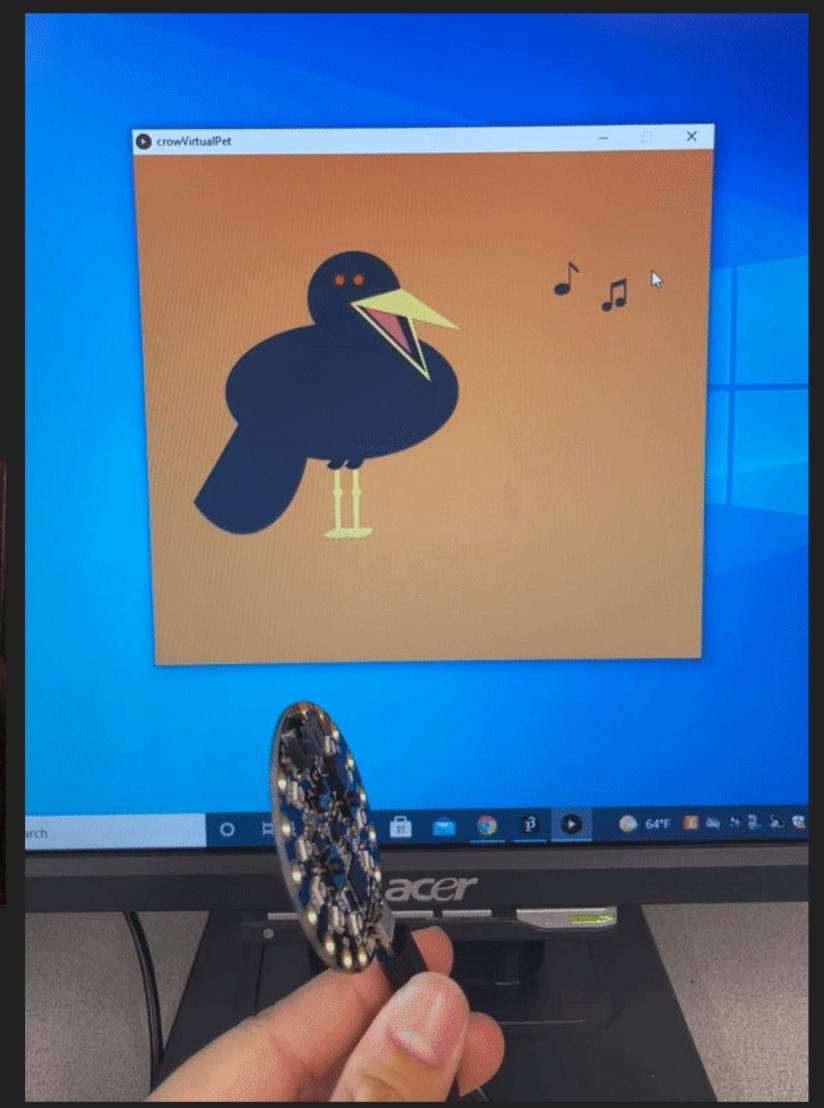
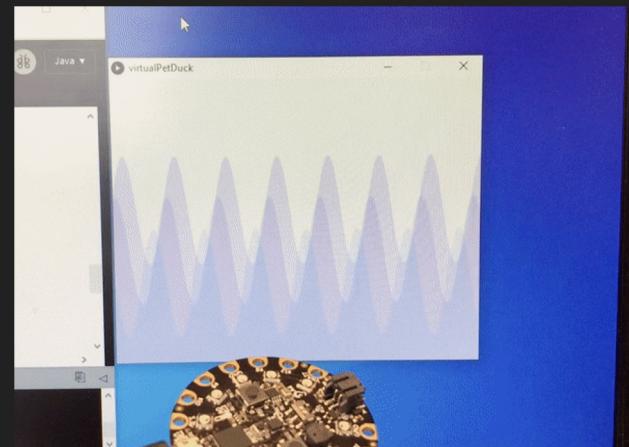
Get input
from the light
sensor and
constrain it
between 50
and 200

Use that
reading to
change the
position of the
wing tips

```
1 import processing.serial.*;
2 import cc.arduino.*;
3 Arduino arduino;
4 int y = 184;
5 public void setup() {
6   size(300,300);
7   arduino = new Arduino(this, Arduino.list()[0]
8 }
9 public void draw() {
10
11   int value = arduino.analogRead(5);
12   if(value > 50 && value < 200){
13     y = value;
14   }
15   System.out.println(y);
16   background(255, 0, 255);
17   noStroke();
18   //body
19   fill(0, 0, 0);
20   ellipse(150, 150, 170, 230);
21   fill(255, 255, 255);
22   ellipse(150, 190, 130, 150);
23   //eyes
24   fill(255, 255, 255);
25   ellipse(140, 80, 40, 60);
26   ellipse(160, 80, 40, 60);
27   //eyeballs
28   fill(0, 0, 0);
29   ellipse(140, 80, 10, 20);
30   ellipse(160, 80, 10, 20);
31   //beak
32   fill(255, 255, 0);
33   triangle(140, 100, 160, 100, 150, 130);
34   //feet
35   ellipse(120, 260, 50, 20);
36   ellipse(180, 260, 50, 20);
37   //wings
38   fill(0, 0, 0);
39   bezier(205, 65, 180, 130, 180, 130, 280, y);
40   bezier(95, 65, 120, 130, 120, 130, 20, y);
41 }
```

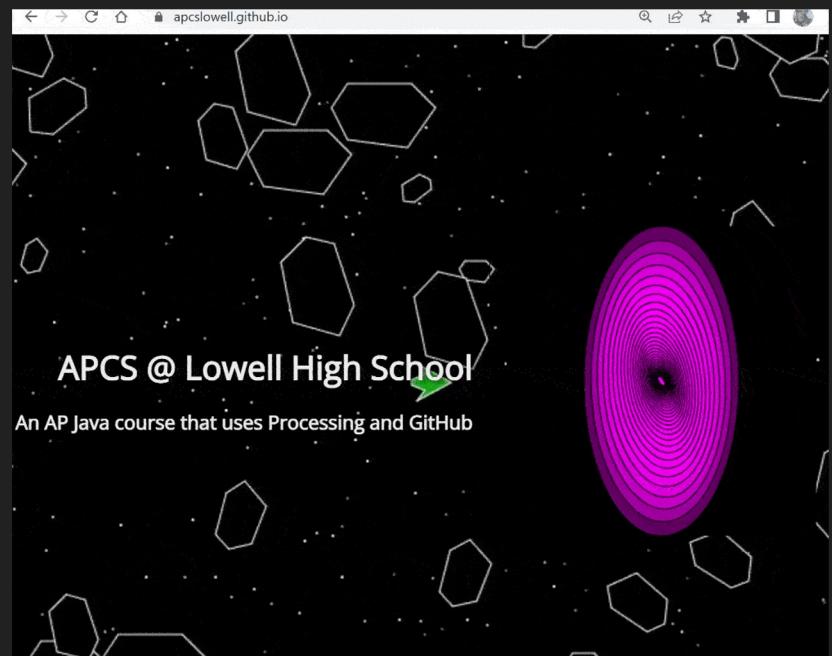


More Samples of Student Work



Links

- My website [apcsowell.github.io/](https://apcslowell.github.io/)
- My email simart@gmail.com
- Virtual Pet Assignment
<https://github.com/APCSLowell/VirtualPet/blob/gh-pages/README.md#virtual-pet>
- Light Controller Assignment
<https://github.com/APCSLowell/LightSensorController#readme>
- Processing <https://processing.org/>
- Adafruit Circuit Playground
<https://www.adafruit.com/product/3000>
- Ezgif was used by students to convert their phone videos to animated gifs
<https://ezgif.com/>
- ScreenToGif was used for other animated gifs <https://www.screentogif.com/>



HELLO

My name is

Dennis Bouvier

SIUE / US Air Force Academy

Ask Me About

Writing Programs on Day 1

Up next: Alex Brown

Writing Programs on Day 1

How to do it: Preparation

Explain:

- The class is about problem solving
- Programming is the last step ... the expression of a solution to a problem
- Programming language is very precise because all intelligence is in your head (not in the computer)
- The computer is a ruthless interpreter of what you wrote, not what you think

Dennis djb@acm.org

Writing Programs on Day 1

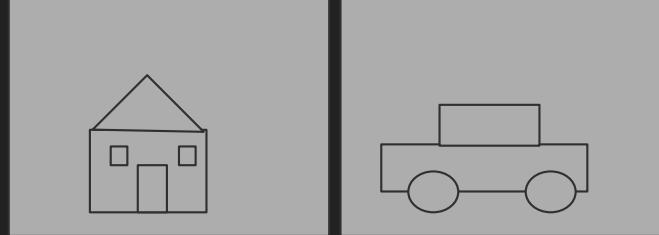
How to do it: Activity

1. Each student has 2 sheets of paper
2. Give each student a “programming task”
3. Exchange “programs” with neighbors to have them play computer
4. Compare actual results to expected results

Dennis djb@acm.org

Writing Programs on Day 1

How to do it: Activity



1. Each student has 2 sheets of paper
2. Give each student a “programming task”

Example 1: draw a simple scene

- Students draw a **simple** picture (line drawing) using only squares, triangles, and circles
- Students write the instructions for recreating the image

1. Exchange “programs” with neighbors to have them play computer
2. Compare actual results to expected results

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Writing Programs on Day 1

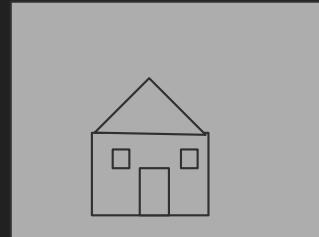
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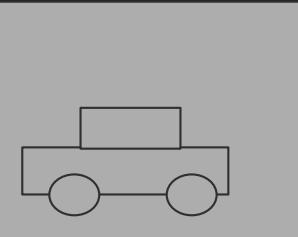
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1. Exchange “programs” with neighbors to have them play computer
2. Compare actual results to expected results



Draw a rectangle with three rectangles inside with a triangle on top



Draw two circles on top of a rectangle and a rectangle on top

Dennis djb@acm.org

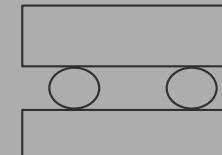
Writing Programs on Day 1

How to do it: Activity

1. Each student has 2 sheets of paper
2. Give each student a “programming task”
3. Exchange “programs” with neighbors to have them play computer
 - o Remind them that the computer has no intelligence and while playing computer they
 - i. Can not ask for clarification
 - ii. Should do exactly as instructed
 - iii. If the instruction is not clear, make a guess and proceed
4. Compare actual results to expected results

Draw a rectangle with three rectangles inside with a triangle on top

Draw two circles on top of a rectangle and a rectangle on top

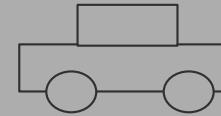


Dennis djb@acm.org

Writing Programs on Day 1

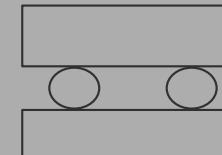
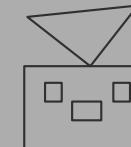
How to do it: Activity

1. Each student has 2 sheets of paper
2. Give each student a “programming task”
3. Exchange “programs” with neighbors to have
4. Compare actual results to expected results



Draw a rectangle with three rectangles inside with a triangle on top

Draw two circles on top of a rectangle and a rectangle on top

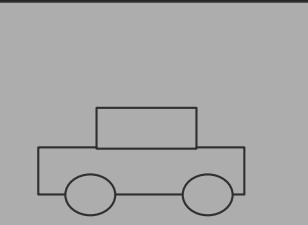
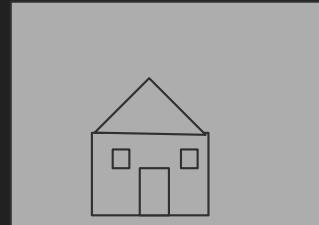


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Writing Programs on Day 1

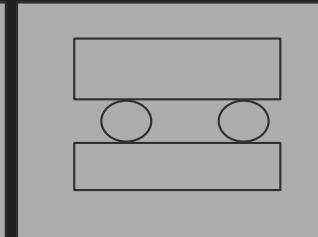
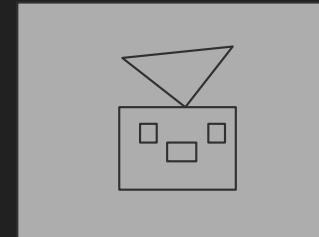
What to expect:

1. Fun (i.e., noise, ...)
2. 90% failure to produce same image
3. Spontaneous discussion



Draw a rectangle with three rectangles inside with a triangle on top

Draw two circles on top of a rectangle and a rectangle on top

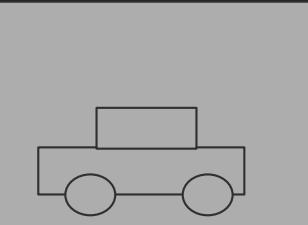
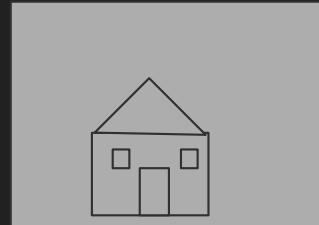


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Writing Programs on Day 1

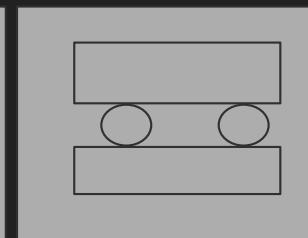
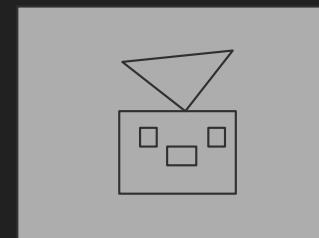
How to do it: Post-Activity Discussion

1. Natural Languages are imprecise;
Programming Languages are designed to
be unambiguous
2. Writing broken programs is common
3. ...
4. ...



Draw a rectangle with three rectangles inside with a triangle on top

Draw two circles on top of a rectangle and a rectangle on top



Dennis djb@acm.org

Writing Programs on Day 1

How to do it: Activity

1. Each student has 2 sheets of paper
2. Give each student a “programming task”

Example 2: write the instructions for making a paper airplane

- Not everyone may know how to do this
- Paper airplanes may land in random places

1. Exchange “programs” with neighbors to have them play computer
2. Compare actual results to expected results

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Writing Programs on Day 1

A. Prepare

B. Activity

1. Each student has 2 sheets of paper
2. Give each student a “programming task”

Example 1: draw a simple scene

Example 2: write the instructions for making a paper airplane

1. Exchange “programs” with neighbors to have them play computer
2. Compare actual results to expected results

C. Discuss

Dennis djb@acm.org

H E L L O
My name is

Alexander (Alex) Brown

Our Lady of Mercy Catholic High School

Ask Me About

InputAgnostic - Starting Students on
not always using Print

Up next: Sandy Czjaka

AP-CSP

Language Agnostic

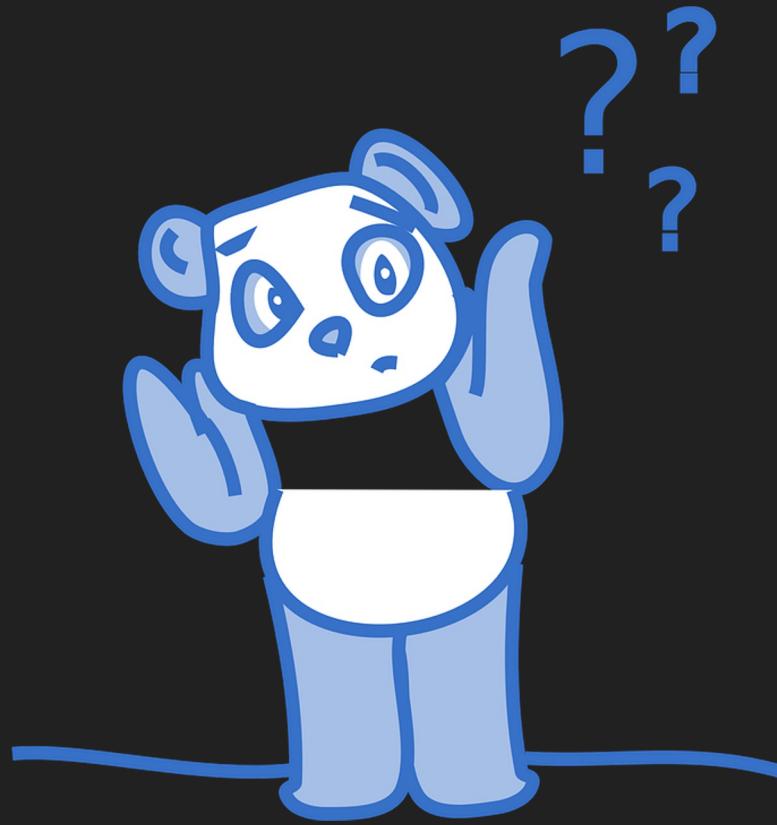
Language-agnostic programming or scripting

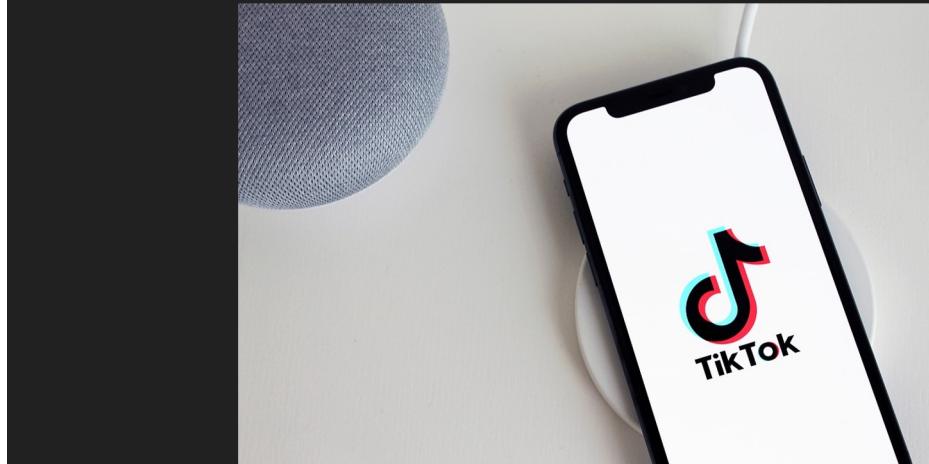
(also called **language-neutral**, **language-independent**, or **cross-language**)

is a software development paradigm where a particular language is chosen because of its appropriateness for a particular task (taking into consideration all factors, including ecosystem, developer skill-sets, performance, etc.), and not purely because of the skill-set available within a development team.

Source: <https://en.wikipedia.org/wiki/Language-agnostic>

Do languages exist?





Do languages exist?

Maybe.

Truth

Goodness





Bishop Robert Barron
Religion and the Opening Up of the Mind

March 20, 2018



Talks at Google

Religion and the Opening Up of the Mind
Bishop Robert Barron

Input Agnostic aka Input Ambivalent

We don't care

/ or rather we don't know /

where the input is coming from

Standard IO

```
import java.util.Scanner;
public class HelloNameRunner
{
    public static void main(String[] args)
    {
        Scanner ui = new Scanner(System.in);

        System.out.println("Hello! What's your name?");
        String name = ui.next();
        System.out.println("Hello " + name);
```

```
System.out.println("Hello! What's your name?");
String name3 = ui.next();
String response3 = HelloNameRunner.getHelloName(name3);
System.out.println(response3);

}

private static String getHelloName(String n)
{
    return "Hello " + n + "!";
}
```

```
public static void main(String[] args)
{
    Scanner ui = new Scanner(System.in);

    System.out.println("Hello! What's your name?");

    String name = ui.next();

    String response = HelloNameToolkit.getHelloName(name);

    System.out.println(response);
}
```

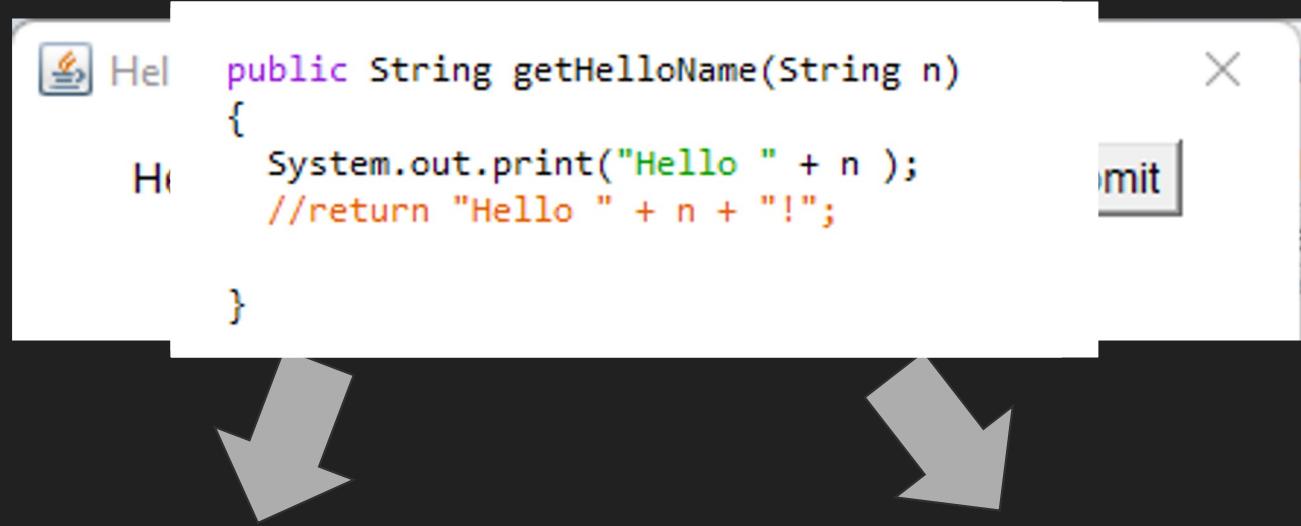
```
public class HelloNameToolkit
{
    public static String getHelloName(String n)
    {
        return "Hello " + n;
    }
}
```

GUI

```
import java.awt.*;          // Using AWT containers and components
//from https://www.ntu.edu.sg/home/ehchua/programming/java/J4a_GUI.html
import java.awt.event.*;

public class HelloName implements ActionListener {
    public String getHelloName(String n)
    {
        // This is a placeholder for the GUI code
        // A real application would have a window with a text field
        // and a button, and handle the button's click event
        System.out.print("Hello " + n);
        return "Hello " + n + "!";
    }

    // Constructor to setup the GUI components and event handlers
    public HelloNameGUI() {
        setLayout(new FlowLayout()); // "super" Frame sets to FlowLayout
        lblResponse = new Label("Hello! What is your name?");
        add(lblResponse);
        add(txtName);
        add(btnGetName);
        add(btnGetAge);
        add(btnGetAddress);
        add(btnGetPhone);
        add(btnGetEmail);
        add(btnGetFeedback);
        add(btnGetHelp);
        add(btnGetAbout);
        add(btnGetExit);
    }
}
```



```
public String getHelloName(String n)
{
    System.out.print("Hello " + n );
    //return "Hello " + n + "!";
}
```

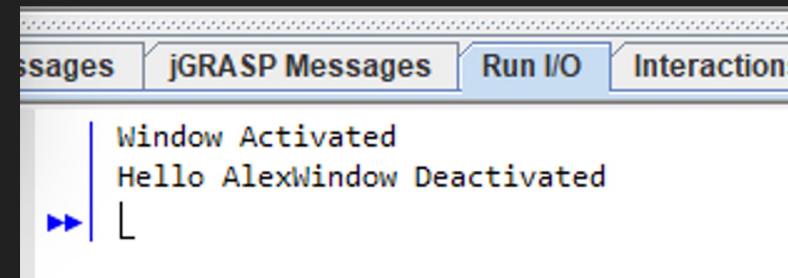


HelloName GUI

Hello Alex!

Alex

Submit



ssages jGRASP Messages Run I/O Interaction

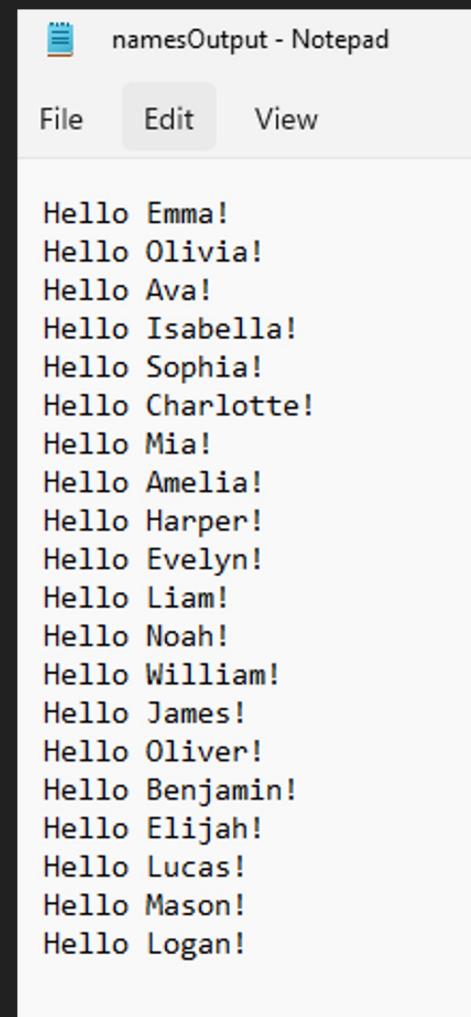
Window Activated
Hello Alex Window Deactivated

Files



A screenshot of a Windows-style Notepad window titled "names - Notepad". The window has a menu bar with "File", "Edit", and "View". The main content area contains a list of 20 names, each on a new line:

```
Emma
Olivia
Ava
Isabella
Sophia
Charlotte
Mia
Amelia
Harper
Evelyn
Liam
Noah
William
James
Oliver
Benjamin
Elijah
Lucas
Mason
Logan
```



A screenshot of a Windows-style Notepad window titled "namesOutput - Notepad". The window has a menu bar with "File", "Edit", and "View". The main content area contains a list of 20 greetings, each consisting of "Hello" followed by a name from the first window:

```
Hello Emma!
Hello Olivia!
Hello Ava!
Hello Isabella!
Hello Sophia!
Hello Charlotte!
Hello Mia!
Hello Amelia!
Hello Harper!
Hello Evelyn!
Hello Liam!
Hello Noah!
Hello William!
Hello James!
Hello Oliver!
Hello Benjamin!
Hello Elijah!
Hello Lucas!
Hello Mason!
Hello Logan!
```

ArrayList work

```
public static String getHelloName(String n)
{
    return "Hello " + n + "!";
}

public static ArrayList<String> getAllNames() throws IOException
{
    ArrayList<String> allNames = new ArrayList<String>();
    File myReadingFile = new File("names.txt");
    Scanner input = new Scanner(myReadingFile);
    while(input.hasNext())
        allNames.add(input.nextLine());
    return allNames;
}
```

```
public static void main(String[] args) throws FileNotFoundException, IOException
{
    FileWriter myOutputFile = new FileWriter("namesOutput.txt");
    ArrayList<String> namesList = HelloNameTextFile.getAllNames();

    for(String name : namesList)
    {
        String response = HelloNameTextFile.getHelloName(name);
        myOutputFile.write(response);
        myOutputFile.write("\n");
    }
    myOutputFile.close();
}

public static String getHelloName(String n)
{
    return "Hello " + n + "!";
}

public static ArrayList<String> getAllNames() throws IOException
{
    ArrayList<String> allNames = new ArrayList<String>();
    File myReadingFile = new File("names.txt");
    Scanner input = new Scanner(myReadingFile);
    while(input.hasNext())
        allNames.add(input.nextLine());
    return allNames;
}
```

Input Ambivalent

User-friendly



User-ambivalent

User-hostile



```
1 0.1724:04.54 Command /usr/lib/gnome-terminal
2 0.4773:48.82 /usr/lib/gnome-terminal
3 0.4773:42.21 python3 cows.py
4 0.4773:17.70 /usr/lib/xorg/Xorg
5 0.4770:08.59 /usr/bin/gnome-shell
6 0.4770:08.59 /usr/bin/pulseaudio
7 0.4770:08.59 /snap/spotify/35/u
8 0.4770:08.59 httop
9 0.4770:08.59 /usr/lib/gnome-online-conn
10 0.4770:08.59 /snap/spotify/35/u
11 0.4770:08.59 /snap/spotify/35/u
12 0.4770:08.59 /snap/spotify/35/u
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```

Alex Brown

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abrowntechology.weebly.com

Sources

Cranium question mark: <https://pixabay.com/vectors/cranium-head-human-people-persons-2028555/>

Confused panda:

<https://pixabay.com/vectors/panda-confused-questions-shrug-303949/>

Sunrise space:

<https://pixabay.com/photos/sunrise-space-outer-space-globe-1765027/>

Sunset men:

<https://pixabay.com/photos/sunset-men-silhouettes-helping-1807524/>

Tiktok App:

<https://pixabay.com/photos/tiktok-app-iphone-phone-5064078/>

Doge picture:

<https://getwallpapers.com/wallpaper/full/d/5/e/9803.jpg>

Sunset:

<https://pixabay.com/photos/sunset-federsee-bad-buchau-idyllic-2739472/>

HELLO

My name is

Sandy Czajka

Riverside Brookfield High School

Ask Me About

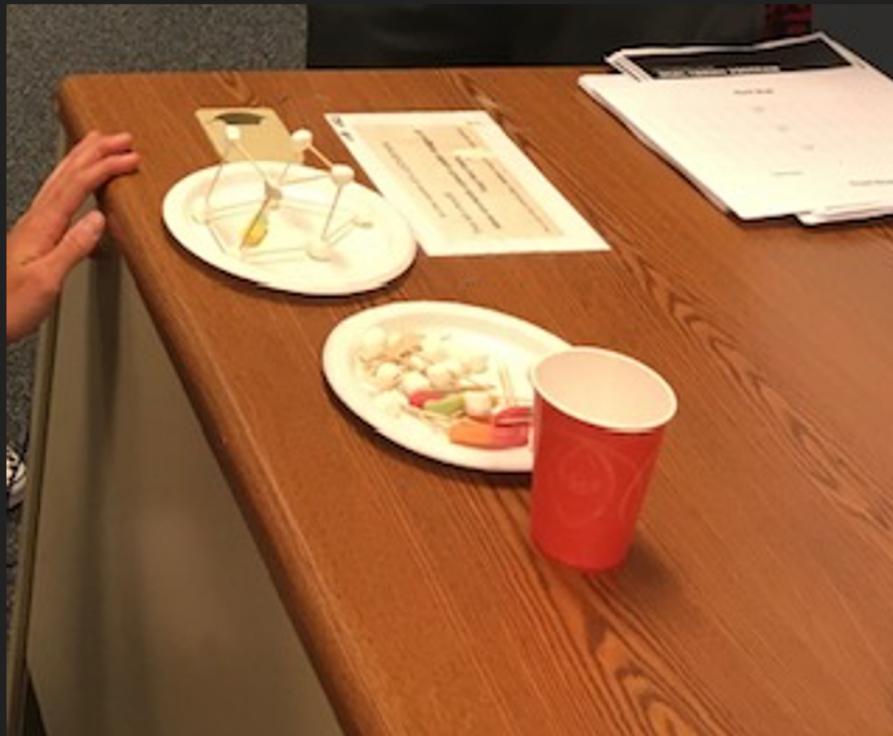
Day "1" Activity

Up next: More Sandy

Day 1

Building a Candy House

bit.ly/candyHouse



Sandy Czajka
czajkas@rbhs208.net

H E L L O
My name is

Sandy Czajka

Riverside Brookfield High School

Ask Me About

Vehicle Class to Inheritance

Up next: Tom Bredemeier

Vehicle Class

- Group work
- UML as a group
- Gallery Walk
- Write class in java
(independently)

Lesson Plan -
bit.ly/VehicleLesson



Image Source: http://www.bta-mall.com/product_detail.php?id=SKUB00UVZNPBU#hires_images

Sandy Czajka
czajkas@rbhs208.net

Extension to Inheritance!

bit.ly/VehicleInheritance

Sandy Czajka
czajkas@rbhs208.net

			
Write the code to instantiate each object given in the picture.			
List any new attributes the object has that is not part of your Vehicle design.			
List any methods in your Vehicle class you would need to modify for the shown object.			
List any methods you might want to add for the object shown that might not apply for all Vehicles.			

HELLO

My name is

Tom Bredemeier

Barrington High School (Illinois)

Ask Me About

Wordle

Up next: Judy Hromcik

Wordle

This is a complete CS1 Wordle project with a realistic built-in GUI

Adapted from [Eric Roberts \(Willamette University\) 2022 NIFTY Assignments](#)

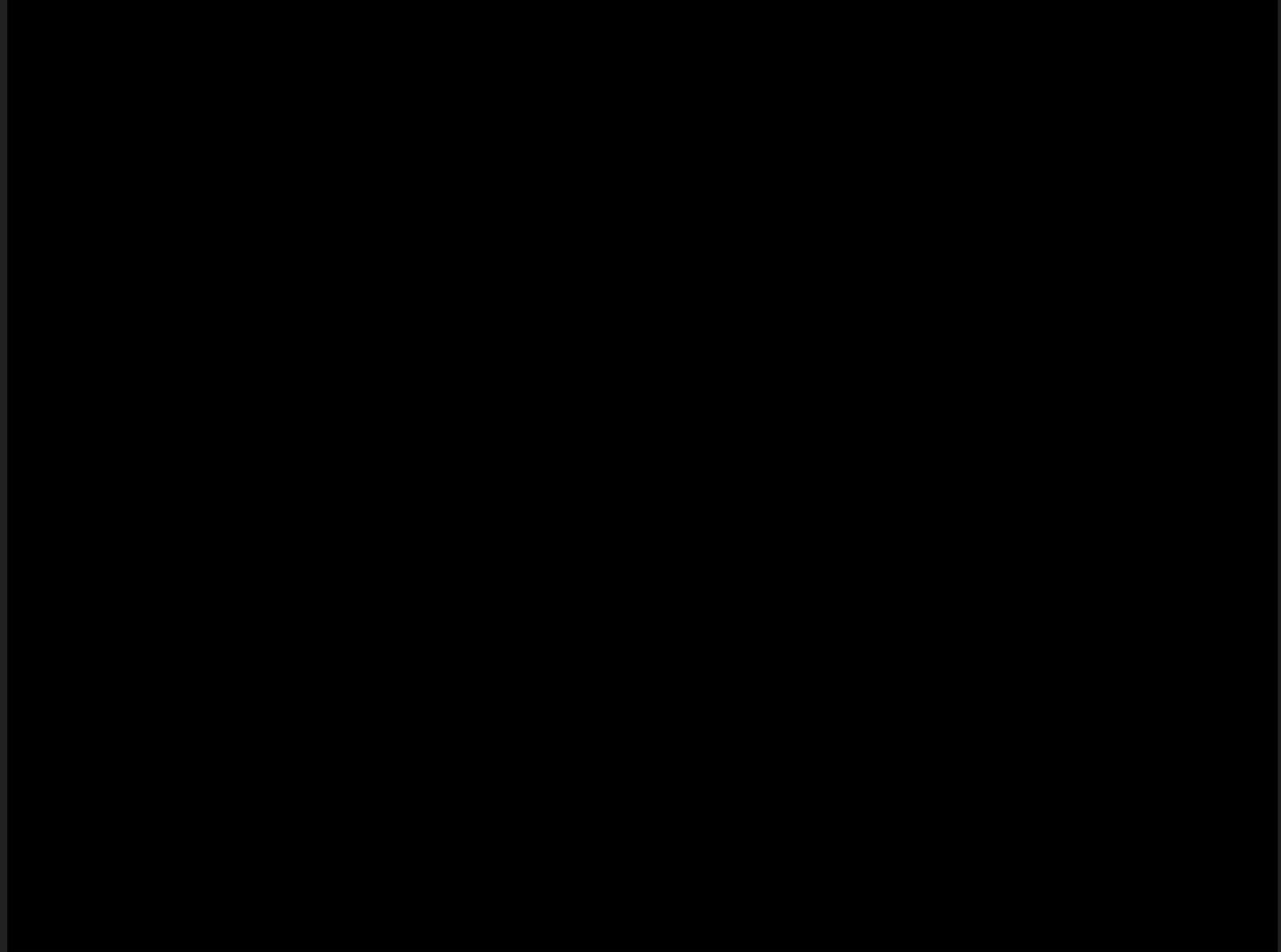
Significant student scaffolding provided, including a thorough project description with step-by-step instructions that start easy but then build in complexity.

Includes a student-run tester that encourages and guides them through the project.

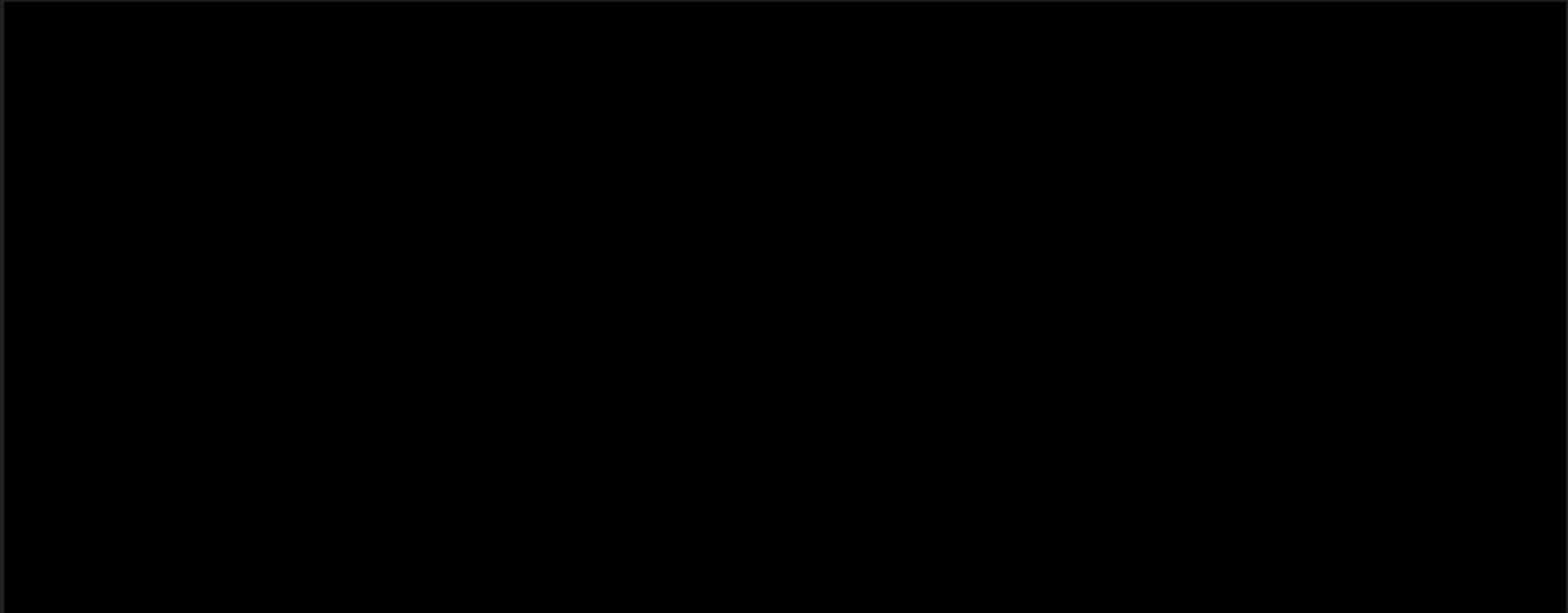
Designed for use anytime after the introduction of String methods (`equals`, `indexOf` and `substring`), and `for/while` loops.

Students simply complete four existing method bodies.

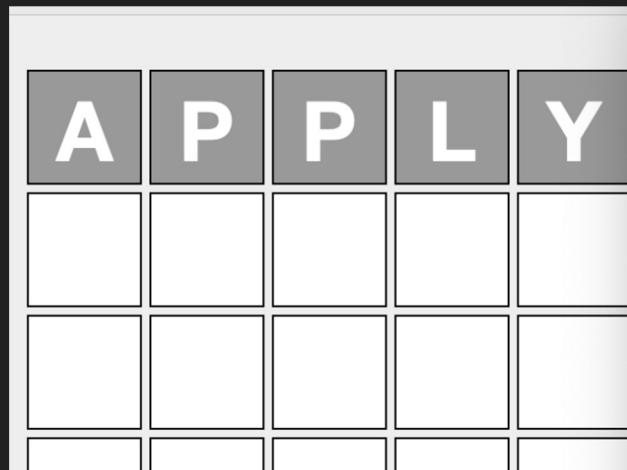
Realistic Wordle GUI



Ready-to-go project description



Built-in student-run tester provides helpful feedback



Now testing your Wordle class:

Now testing your setAllLettersToMissing method
Excellent! Your setAllLettersToMissing method is correct.

Now testing your findCorrectLetters method
*** Failed: Hmm. Looks like you haven't started this one yet.

Bummer. Try again.

Nothing for you to grade! (Students do it all)

Now testing your Wordle class:

Now testing your setAllLettersToMissing method

Excellent! Your setAllLettersToMissing method is correct.

Now testing your findCorrectLetters method

Nice! Your findCorrectLetters method is correct.

Now testing your presentLetterCount method

Fabulous! Your presentLetterCount method is correct.

Now testing your findPresentLetters method

Well done! Your findPresentMethod method is correct.

Bustalicious! You have successfully completed the Wordle project!

-> Wordle project tester version 5.0 <-

[Complete Project Download Link](#)

HELLO

My name is

Judy Hromcik

School for the Talented and Gifted

Ask Me About

Arrays

Up next: More Judy...

Teaching Arrays with Stories and Concrete Models

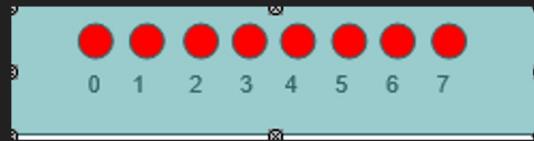
Read “Too Many Daves” from The Sneetches and Other Stories by Dr. Seuss.
A great YouTube video of this story can be found here:

https://www.youtube.com/watch?v=gCsQM0KNXhU&ab_channel=Lisa

Teaching Arrays with Stories and Concrete Models

Use concrete models for abstract concepts
(Bottle Cap Array -idea from: Luis Chaire)

- Piece cardboard
- 8 bottle caps
- Hot glue



Have students place 8 numbers in the array. The blank side of the paper should be showing.

Use the bottle cap array to introduce basic array algorithms:

- Traversing the array
- Find a value in the array
- Find the smallest value in the array
- Move the first value in the array to the last position. Shift all other values one to the left (lower index position)

HELLO

My name is

Judy Hromcik

School for the Talented and Gifted

Ask Me About

Parameters and M&M's

Up next: Cody Henrichsen

Using M&M's to Demonstrate Parameter Passing

What you need:

- Fun size packs of M&M's
- 4 Dixie cups per student
- Parameter Passing handout

[Link to Handout](#)

[Link to Video Demonstration](#)

HELLO

My name is

Cody Henrichsen

CTEC

Ask Me About

Pattern Recognition / POGIL / Toy Night Archive / Games

Up next: Amy Pezzoni

Pattern Matching

Find the difference picture to prepare students for debugging and looking at similar lines of code!

Move to common code sequences along the year with 'random' replacements

Hotspot questions in Canvas

Nintendo Switch for CS

Game Builder Garage

Mario Maker 1 and 2

RingFit Adventure

Keep talking and nobody Explodes

POGIL

Process Oriented Guided Inquiry Learning

Great group interaction and learning!

CS 1 / CS 2 / and so much more

contact@introcspogil.org

www.cspogil.org

Toy Night Archive

New URL: <https://tinyurl.com/ToyNightAPCS>

Long form: https://github.com/CodyHenrichsen-CTEC/ToyNight_APSCS



HELLO

My name is

Amy Pezzoni

CTE Computer Science Teacher

Enochs High School, Modesto, CA

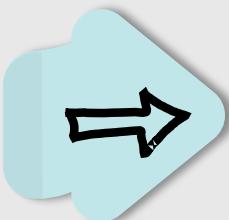
bit.ly/pez-2022

Ask Me About

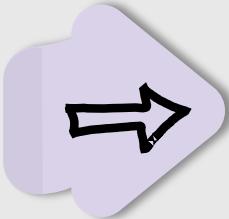
Digital Notebook / SlidesMania / CTE Job Opening

Up next: Sam Black

Wouldn't it be nice if...



...students had a better grasp of AP CS A vocabulary?



...students had one place to store all their notes?

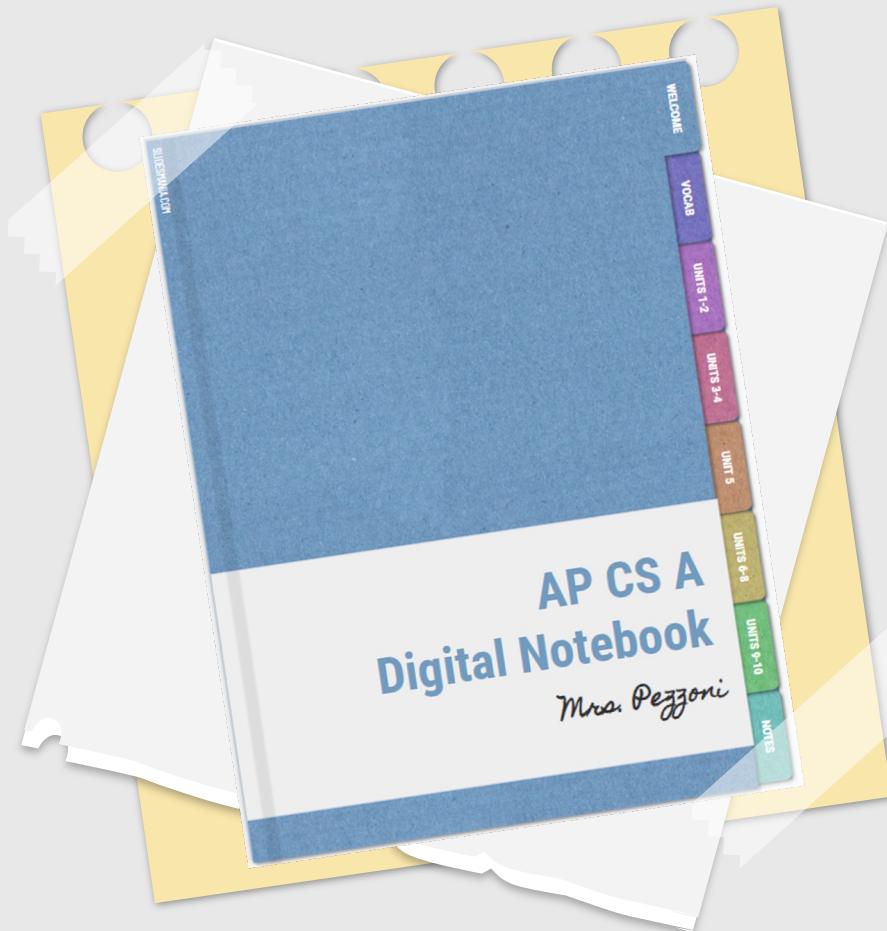


...students had a notebook they could never lose, or forget to bring to class?



Let's get organized!

Thanks, SlidesManial



Questions?

Unit 1 - Primitive Types

Variables and Data Types (Unit 1, Lesson 3):

- Record notes here
- Add questions underneath, or use the post-it notes on the side
- Duplicate this slide as needed

SLIDESMANIA.COM

WELCOME VOCAB UNITS 1-2 UNITS 3-4 UNIT 5 UNITS 6-8 UNITS 9-10 NOTES

How do I...?

A white notepad with a torn edge at the top is pinned to a light gray corkboard. The notepad has several white pushpins along its top edge and two blue pushpins with white polka dots on the right side. A yellow sticky note with a black arrow pointing right is attached to the left edge of the notepad. The notepad contains the following text:

AP CS A template

Generic template



Thank you!

Pezzoni.A@monet.k12.ca.us

Enochs SSD Web

Page

@akaMrsP

LinkedIn

bit.ly/pez-2022

}

HELLO

My name is

Sam Black

Lubbock High School

Ask Me About

GitHub Classroom

Up next: Ann Horton

What is it?

GitHub – a repository for programmers to manage their projects in the cloud; particularly useful when it comes to version control

GitHub Classroom – an educational-use tool created to somewhat easily deploy, manage, and collect projects and allow for autograding through JUnit tests

Templates for many languages exist to give a teacher full control over how they deploy their labs without having to learn GitHub Actions on their own.

Free to use for teachers and students. Private repositories make it a little more difficult to clone others' solutions.



Gi

Find a classroom...

View: Active

Sort by: Newest first

New classroom

LubbockHS-APCSA-2022

LubbockHS-APCSA

- A 22-04b-Chasing Tails
- A 22-06 The Spinning Tops
- A 22-03-Decisions Decisions
- A Stringy Spells
- A Haunted House

LubbockHS-DS-2022

LubbockHS-DS

- A 04 Base R Belong
- A 22 Twilight Zone Warehouse
- A 02 Sacred Sets
- A 01 Remove It!
- A Git and GitHub Fundamentals

[Assignments](#) / LubbockHS-APCSA-2022 / 22-06 The Spinning Tops

LubbockHS

22-06 The Spinning Tops

A Individual assignment ● Active<https://classroom.github.com>[Edit](#)[Download](#)Rostered students **21**Added students **0**Accepted students **16**Assignment submissions **0**Passing students **12/16**

Search by GitHub username or student identifier

Classroom roster



Latest commit passed

36 commits



Latest commit failed

7 commits



Latest commit failed

25 commits

Links

<https://education.github.com>

<https://classroom.github.com>

The template I use: <https://github.com/csa-teachers-help/practice-problem-advance-maven>

H E L L O
My name is

Ann Horton

Plano East Senior High

Ask Me About

Visual Aides for tracing

Up next: Debbie Klipp

Visual Learners Require Toys as props

You can't just open the computer and show what's in memory



[This Photo](#) by Unknown Author is licensed under [CC BY](#)



Things I've used
in
the past

Magnets to trace

```
▶ public int binarySearch(int sn)
▶ {
▶     boolean found = false;
▶     int lo = 0;           // setup low and high to min and max indexes
▶     int hi = size-1;
▶     int mid = 0;
▶     while (lo <= hi && !found)    // if lo = hi, you aren't done, you haven't checked that position
▶     {
▶         mid = (lo + hi) / 2;      // calc mid point using int division
▶         if (intArray[mid] == sn)   // is this the data you are looking for??
▶             found = true;
▶         else                      // if not, reset the lo and high indexes for the next iteration
▶         {
▶             // make sure you don't recheck the midpoint, you already did that
▶             if (sn > intArray[mid])
▶                 lo = mid + 1;
▶             else
▶                 hi = mid - 1;
▶         }
▶     } // all done looping. If found, return where . If not found, return -1.
▶     if (found)
▶         return mid;
▶     else
▶         return -1;
▶ }
```





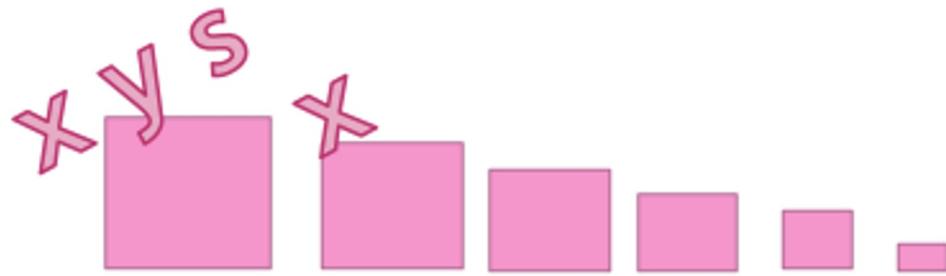
Magnetic letters

Magnets to trace

```
▶ public int binarySearch(int sn)
▶ {
▶     boolean found = false;
▶     int lo = 0;           // setup low and high to min and max indexes
▶     int hi = size-1;
▶     int mid = 0;
▶     while (lo <= hi && !found)    // if lo = hi, you aren't done, you haven't checked that position
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▶             else
▶                 hi = mid - 1;
▶         }
▶     } // all done looping. If found, return where . If not found, return -1.
▶     if (found)
▶         return mid;
▶     else
▶         return -1;
▶ }
```



Or for graphics



*For a nested loop, no more worrying about if
the pointer is i or j*

HELLO

My name is

Debbie Klipp

Florida Virtual School

Ask Me About

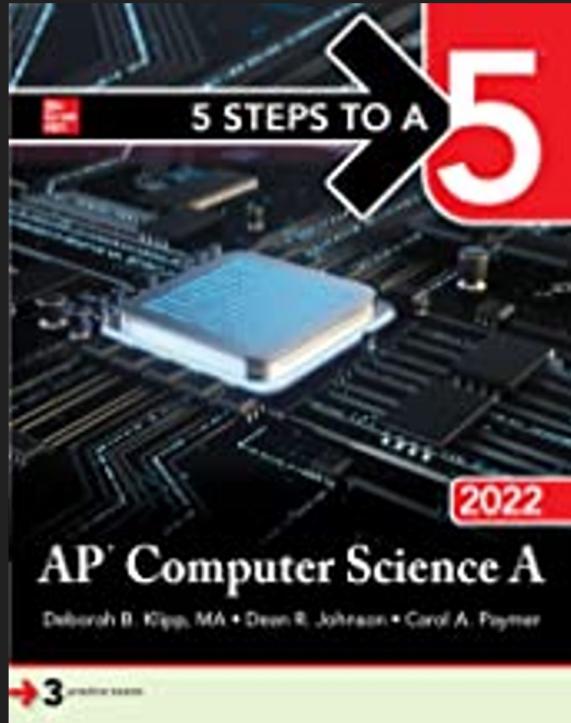
Javoo

Up next: Kelly Schultz

Javoo

Based off the game “Taboo” but uses Java terms should know

5 Steps to a 5 AP Computer Science A



2023 Edition available August 2023

Includes a Teacher's Guide with suggestions for teaching APCSA. Suggestions include using various activities (including Javoo)

H E L L O
My name is

Kelly Schultz

Western Michigan University

Ask Me About

Plickers.com

Up next: Kymberly Ayodeji

Plickers.com

A free website to use to give students multiple choice questions.

- Can be used unplugged
- Can be used online
- Students don't need any equipment (online needs internet)
- Teachers need a free account and an app on phone (unplugged)

Which of the following best describes the value of the Boolean expression shown below?

$a \&\& !(b \parallel a)$

- A The value is always true.
- B The value is always false.
- C The value is true when a has the value false, and is false otherwise.
- D The value is true when b has the value false, and is false otherwise.

Students play and pause videos and sounds directly on their devices. [Dismiss](#)

Start Accepting Answers
Press **ENTER** key

Student Names

Each student has their own account and no one knows who has answered the question correctly - no shaming!

Teachers can see who answered which question and whether they answered correctly.

My students love it.

Plickers.com

Questions can be grouped into sets.

SETS CAN BE PUBLISHED!

I have published two sets.

- Binary and Variables
- Course Description Sample Question

```
ords(String word
ord1.substring(
rd2.substring(w
str2 + str1;
.ln(result.inde:
```

AP Computer Science A Sample Questions From Course Description

 You (kellys)

Computer Science • Grades 9-12

Multiple Choice Questions from the Course Description for AP Computer Science A course.

Join Me!

Plickers.com

Email: Kelly@dyksterhouse.org

HELLO

My name is

Kymberly Ayodeji

AWS Educate Faculty Cloud Ambassador

Ask Me About

Cloud Computing

Up next: JP O'Hara

Cloud Computing & AWS Educate

Kymberly Ayodeji

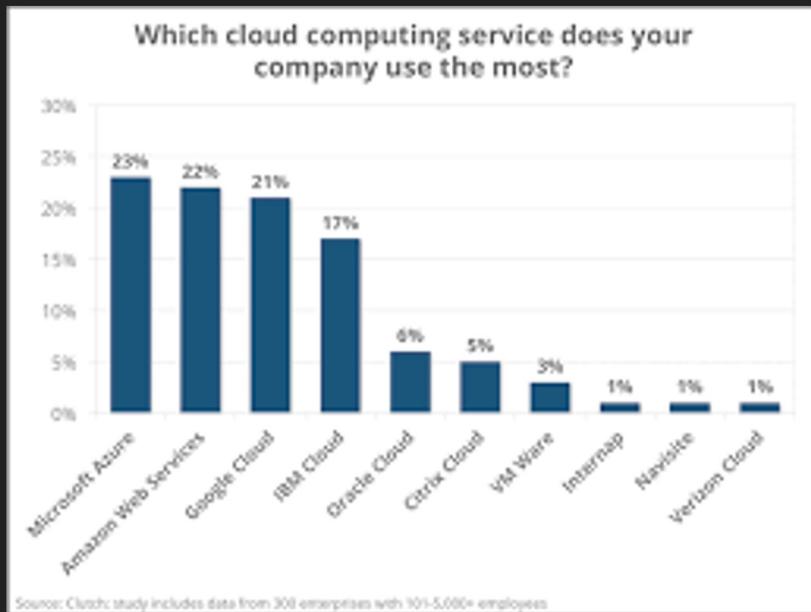
ayodejiglp@gmail.com

@kymayodeji

AWS Educate Faculty Cloud Ambassador



What is Cloud Computing?



What is AWS Educate?



AWS Educate for Students

Access to AWS Console & Classrooms

Cloud Career Pathways

Digital Badges

Job Finder

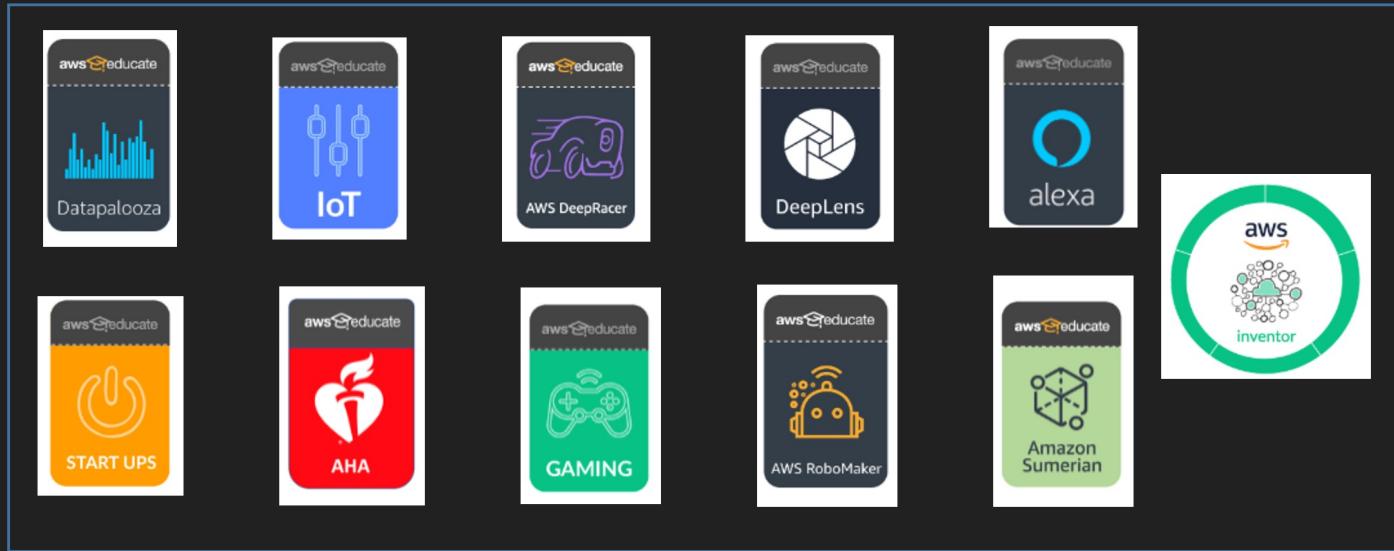
The screenshot shows the AWS Educate student dashboard. At the top, there's a navigation bar with links for Portfolio, Career Pathways, Badges, Jobs, AWS Account, and Logout. A dropdown menu for Preferred Language is set to English. The main area features a "Career Path" section for "Cloud Literacy (Inventor)" with a progress bar showing 1 of 5 complete. Below this are four large buttons: Portfolio (green), Career Pathways (red), Learn (purple), and Badges (orange). To the right, there's a video player titled "What is Cloud Computing? - A..." showing a laptop connected to a cloud icon with the AWS logo. On the far right, a "Suggested Jobs" sidebar lists four job opportunities at Amazon, Inc., each with a "more about this opportunity" link.

- Cloud Support Associate
Amazon, Inc.
[more about this opportunity](#)
- Cloud Support Engineer
Amazon, Inc.
[more about this opportunity](#)
- Cloud Support Associate
Amazon, Inc.
[more about this opportunity](#)
- Cloud Support Engineer
Amazon, Inc.
[more about this opportunity](#)

Cloud Career Pathways

 <h3>Cloud Computing 101</h3> <p>Take a crash course on the cloud, its history, solutions, and why companies across the globe are looking for employees with AWS cloud expertise.</p> <p>START ▶ LEARN MORE ▶</p>	 <h3>Application Developer</h3> <p>Curious how App Developers design, test, and improve engaging web and mobile applications in the cloud? Learn more about the skills you'll need.</p> <p>START ▶ LEARN MORE ▶</p>	 <h3>Cloud Support Associate</h3> <p>If you're excited by the future of cloud computing and enjoy working directly with customers, learn more about becoming a Cloud Support Associate.</p> <p>START ▶ LEARN MORE ▶</p>	 <h3>Cloud Support Engineer</h3> <p>Interested in multiple technologies and working with companies to support AWS cloud solutions? Learn more about becoming a Cloud Support Engineer.</p> <p>START ▶ LEARN MORE ▶</p>
 <h3>Cybersecurity Specialist</h3> <p>Cybersecurity Specialists use expertise in networking, programming, and coding to protect customer data every day. Learn more about the skills they use.</p> <p>START ▶ LEARN MORE ▶</p>	 <h3>Data Integration Specialist</h3> <p>Excited about bringing data sources together to tell the story of a product's performance? Discover ways to build and improve products through data.</p> <p>START ▶ LEARN MORE ▶</p>	 <h3>Data Scientist</h3> <p>Curious how discovering patterns in large data sets can translate into new business strategies? Learn more about how Data Scientists do this every day.</p> <p>START ▶ LEARN MORE ▶</p>	 <h3>DevOps Engineer</h3> <p>If you like working behind the scenes to tackle challenges and are curious about skills like scripting and coding, learn more about becoming a DevOps Engineer.</p> <p>START ▶ LEARN MORE ▶</p>
 <h3>Machine Learning Scientist</h3> <p>Curious how artificial intelligence and predictive modeling are used to create dynamic experiences? Learn more about becoming a Machine Learning Scientist.</p> <p>START ▶ LEARN MORE ▶</p>	 <h3>Software Development Engineer</h3> <p>If you're a builder who wants to learn more about using software engineering principles to design original applications, explore the skills you'll need.</p> <p>START ▶ LEARN MORE ▶</p>	 <h3>Solutions Architect</h3> <p>Curious how Solutions Architects deliver strategic, scalable AWS cloud infrastructures to their customers? Learn more about the skills they use every day.</p> <p>START ▶ LEARN MORE ▶</p>	 <h3>Web Development Engineer</h3> <p>If you're interested in developing innovative web experiences through software design and programming, learn more about the skills you'll need.</p> <p>START ▶ LEARN MORE ▶</p>

Digital Badges



Content Example: High School

OVERVIEW: BUILDING IN THE CLOUD



Instructions: Click each tab below to reveal more information.

This badge provides an introduction to foundational concepts of cloud computing, which unlocks the ability to make innovative, interactive apps.

The badge exercises use the AWS Management Console as the development environment to build a static website and Chatbot.

Lessons 1, 2 and 3	Lesson 4	Lessons 5 and 6	Lessons 7 and 8	Lesson 9
 AWS	 AWS Console	 Cloud Storage & Website	 Cloud Compute	 Chatbot
Cloud Computing				

HELLO

My name is

JP O'Hara

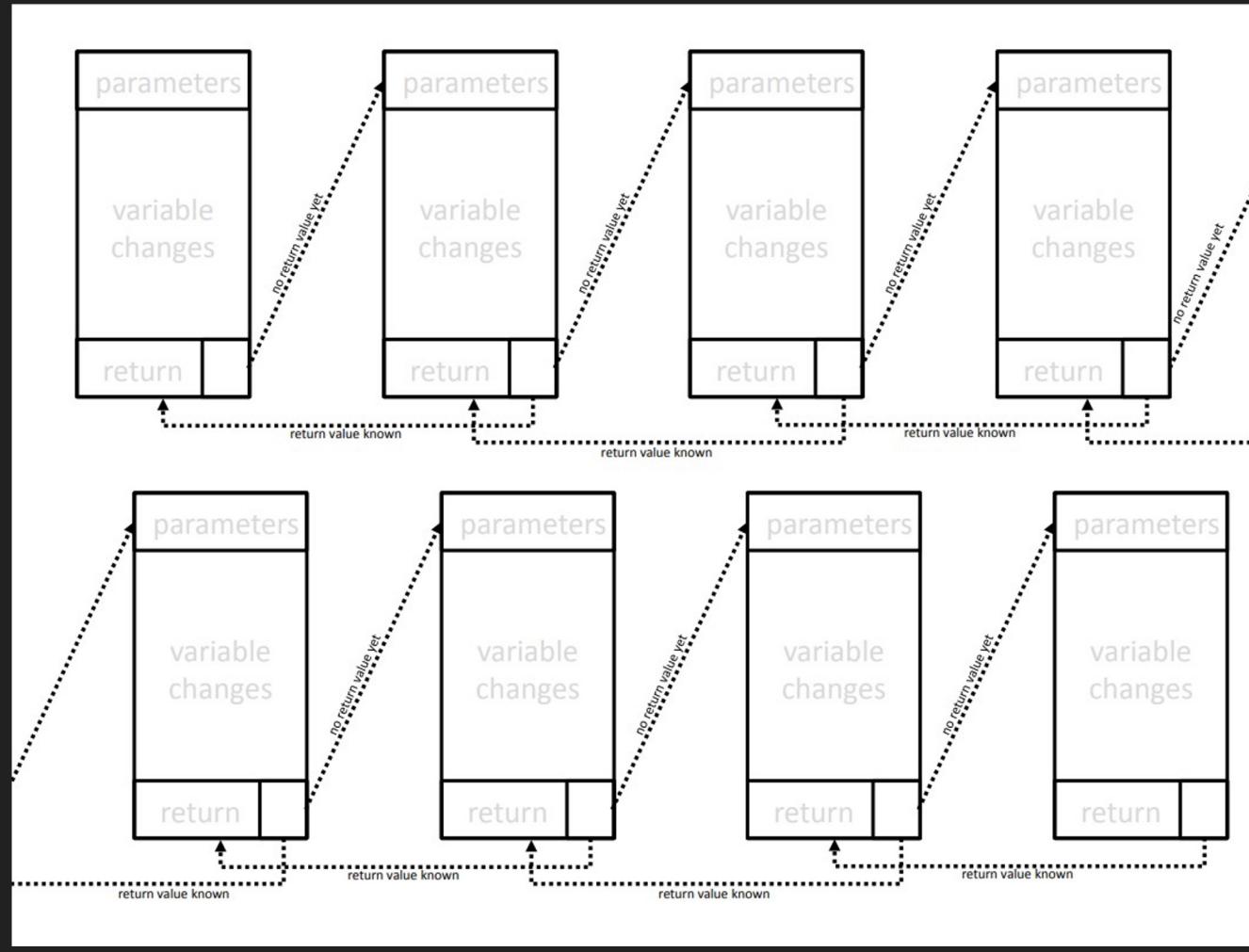
DuVal High School

Ask Me About

Recursion Worksheets

Up next: Rob Schultz

Recursion Worksheet



HELLO

My name is

Rob Schultz

Bellbrook High School

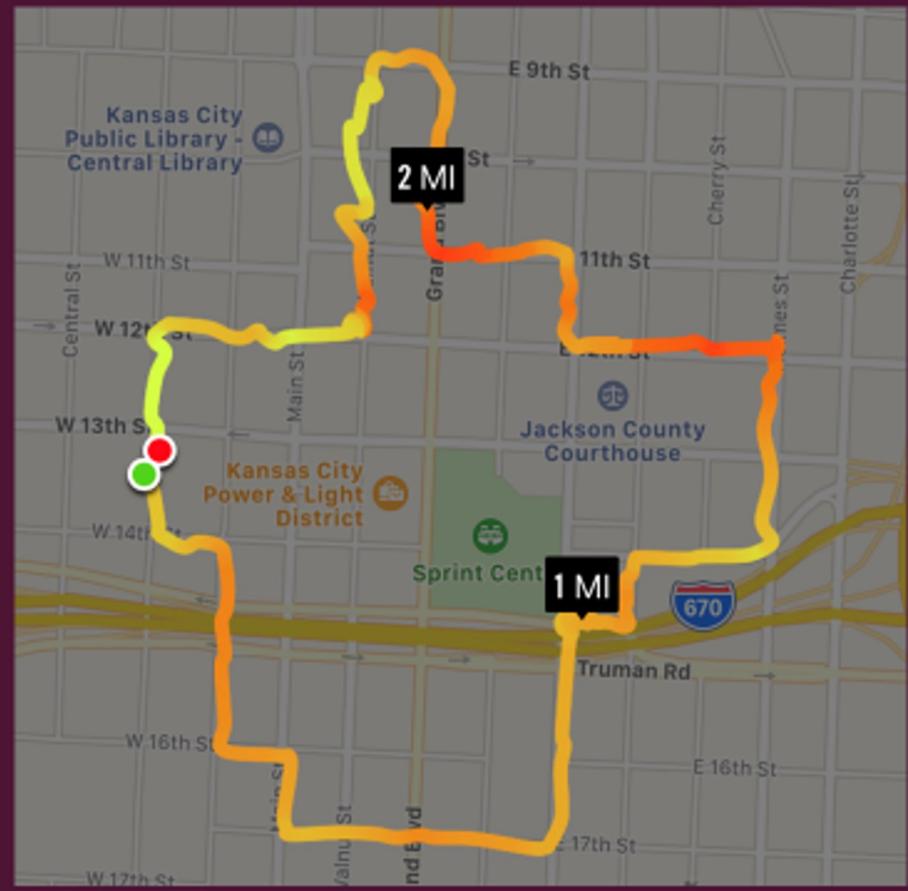
Ask Me About

Differentiation in Lab Projects

Up next: Sage Miller



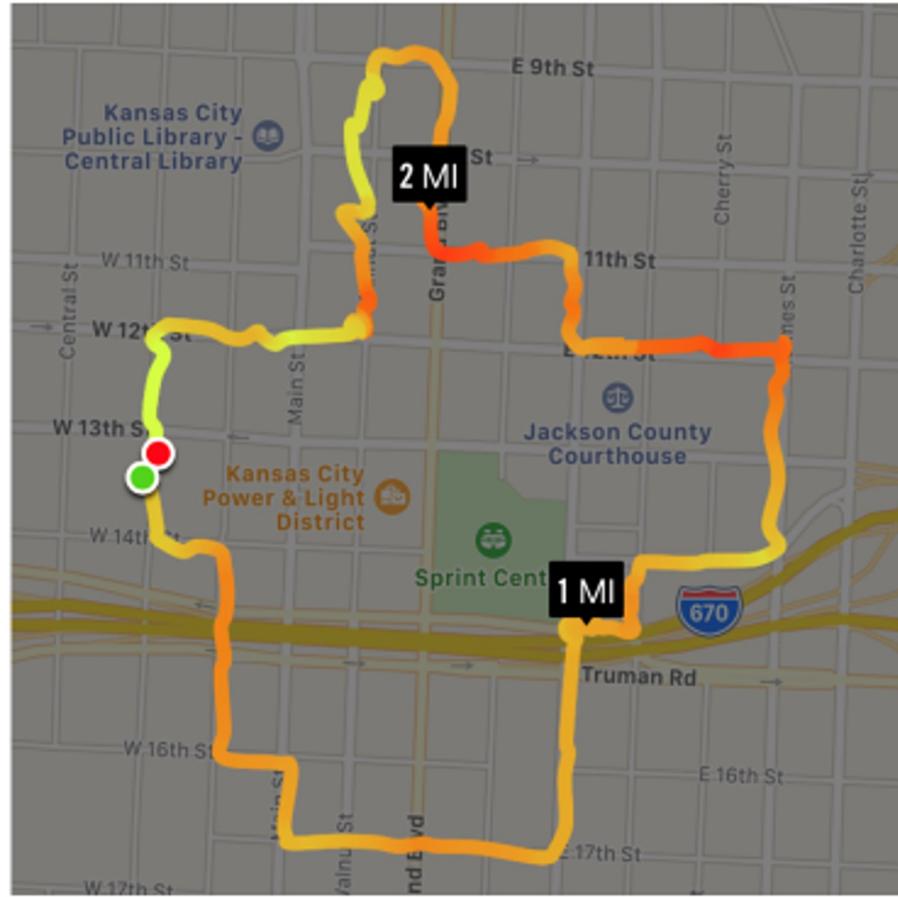
AP CSA – RUNNING GROUP



Parking Lots

Stairs

Short Cuts



Penny Pitch Project

AP Computer Science

Problem Statement:

In the game of Penny Pitch, a board of numbers is laid out as follows:

1	1	1	1	1
1	2	2	2	1
1	2	3	2	1
1	2	2	2	1
1	1	1	1	1

A player tosses three pennies on the board, hoping for the number with the highest value. At the end of the game, the total of the tosses is displayed.

Develop a Penny Pitch game given the following constraints:

- You must use a 2-D Array of Integers.
- Three random spaces must be selected for placement of the pennies.
- If an occupied space is selected, a new space must be selected.
- Each occupied space must be indicated by displaying the letter “P”.
- The board must be redisplayed after each penny is thrown.

1	1	1	P	1
1	P	2	2	1
1	2	P	2	1
1	2	2	2	1
1	1	1	1	1

Score: 6

Penny Pitch Project – Parking Lot Extension

Allow the user to define the size of the board from 3x3 to 18x18

GOAL: Extend 2D Array Skills

- Array Initialization
- Array Traversal
- Random Row and Column Selection

Penny Pitch Project – Stairs Extension

Create a Square Class.

Replace the 2D Array of Integers with a 2D Array of Squares.

GOAL: Include Class Skills

- Use Square constructor to initialize each Square element.
- Use methods to access and update *private* instance variables

Square Class Definition:

- Class: Square
- Instance Variables:
 - private int value;
 - private boolean penny;
- Methods Signatures:
 - public Square(int v); // constructor
 - public void reset();
 - public int hit();
 - public int getValue();
 - public String toString();

Penny Pitch Project – Short Cut

ISSUE: Lack of Conceptual Knowledge / Slow Typist

Provide “Guided” Code

GOAL: Hit Objectives and Boost Comfort Level

- Provide partially completed code
- Focus on the Big Ideas
- Allow the student to bypass previously mastered concepts

NOTE: No Free Rides!!

If student is struggling conceptually due to extended absence or lack of effort, then time must be scheduled outside of class in exchange for “Guided” Code.

HELLO

My name is

Sage Miller

Webster Schroeder High School (Webster, NY)

Ask Me About

Potato Head Role Play: Interacting Objects

Up next: Lora Santucci

Potato Head Role Play

Disclaimer: This activity morphs two activities that I hear about at previous Toy Nights! Credit belongs to Dave Levine (original Role Play) and unknown (Potato Head)



Script: <https://docs.google.com/document/d/1W6aEuXRqXah2sQh0lVTaZescNHTyVERdaRddksdCOn4/edit?usp=sharing>

Important: Do NOT try to purchase before asking your school community if anyone has ones laying around that they are willing to donate. If none are donating, try garage sales to find cheap sets!!! You will want multiple sets:

- Different size bodies
- Multiple types of a few accessories

H E L L O
My name is

Lora Santucci

Morris Hills High School

Ask Me About

Duck Draft

