

Coding Fundamentals ASPIRE

[8/11 - 12/12]

Helix Charter High School

Isabelle Viraldo

Week 1 [8/11 + 8/15]

Welcome!

- Mondays: Discussion + Activity
- Fridays: Review + Programming Exercise

What do you want to learn?

What do you care about?

What do you want to accomplish?

feedback!



Week 1 [8/11 + 8/15]

Topics I hope to cover:

- GitHub (How to use and let's set one up!)
- AI (Machine Learning vs Generative AI vs Image Detection, let's break it down (and make one of our own))
- How to code! (Some practical skills, and also best practices)
- Binary (What is it? Why is it important? Who cares?)
- Robotics (What do you need to get a robot working?)
- How does your computer work? (What do computers do when you're not looking?)
- What do you want to learn?

Week 1 [8/11 + 8/15]

Quick About Me! (Why should you trust anything I have to say?)

Helix High School >> Grossmont College >> San Diego State University

Hardware vs Electronics vs Software

What is code? What is programming?

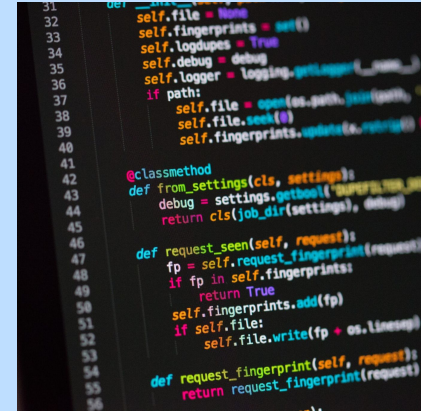
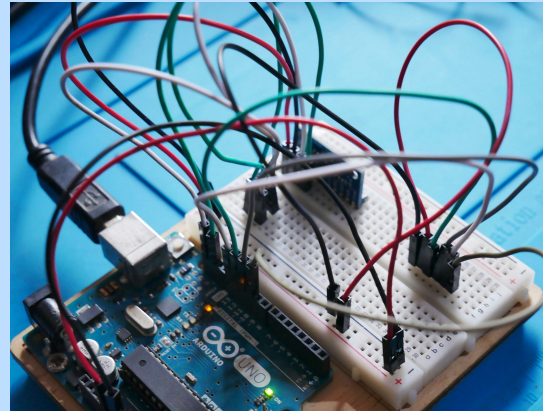
Python vs C++ vs Java vs Bash

feedback!



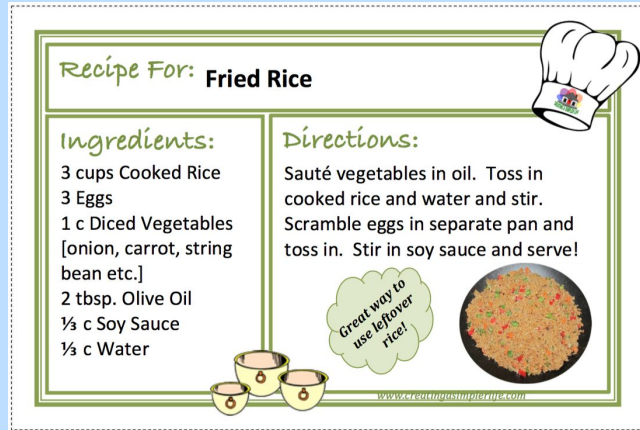
Week 1 [8/11 + 8/15]

Hardware vs Electrical vs Software



Week 1 [8/11 + 8/15]

What is code? What is programming?



Helix Charter High School
Isabelle Viraldo

Your Program

Import:

Library1
Library2

Execute:

1. Step 1
2. Step 2
3. Step 3
4. Step 4

Week 1 [8/11 + 8/15]

Python vs C++ vs Java vs Bash vs Assembly

```
print ( "Hello, World" )
```

```
1 #include <iostream>
2
3 int main(){
4     std::cout << "Hello, World!" << std::endl;
5     return 0;
6 }
7
8
```

```
class Hello
{
    public static void main ( String[] args )
    {
        System.out.println( "Hello World!" );
    }
}
```

```
Terminal — bash —
bash-3.2$ echo "Hello, world"
Hello, world
bash-3.2$
```

```
1  org 0x7C00
2  bits 16
3
4  %define ENDL 0x0D, 0x0A
5  %define ENDS 0x00
6
7  cls:
8      pusha
9      mov al, 0x03
10     mov ah, 0x00
11     int 0x10
12     popa
13     ret
14
15  main:
16     call cls
17     hlt
18     jmp main
19
20  string: db "Hello World", ENDL, ENDS
21
22  times 510 - ( $$ - $$ ) db 0
23  dw 0AA55h
```

Week 1 [8/11 + 8/15]

Coding activity! Get out your Chromebooks!

Everyone look up:

python online compiler

Or

Go to: <https://tinyurl.com/yc4w9mdh>



Week 1 [8/11 + 8/15]

Programming Activity:

Make a choose your own adventure story

1. Get a user's input
2. Use an if/else statement
3. Use a match/case statement

```
choice = input("Choose a color (red/blue): ")
match choice:
    case "red":
        print("You chose red!")
    case "blue":
        print("You chose blue!")
    case _:
        print("That color is not available.")
```

```
if age < 18:    # if the user's age is less than 18, they are a kid
    print("You're a kid!")
else:          # otherwise, they are an adult
    print("You're an adult!")
```

