

Coding Fundamentals ASPIRE

[8/11 - 12/12]

Helix Charter High School
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Week 7 + 8 [9/26 + 10/3]

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 7 + 8 [9/26 + 10/3]

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?

```
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!")
```

```
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.")
```

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What are loops?

In programming, you never want to write the same thing twice

```
count = 5
while count > 0:
    print("Counting down:", count)
    count = count - 1
print("Blast off!")
```

```
for i in range(5):
    print("i is:", i)
```

Week 7 + 8 [9/26 + 10/3]

What is a Function?

Takes input -> does something -> gives output

Why use Functions?

Functions

- def
- name
- parameters
- return

```
def double(n):  
    return n * 2  
  
print(double(5))
```

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Python's Standard Format

Define Functions

Define main function

Standard entrypoint for running programs

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```
#define your functions up here
def double(n):
    return n * 2

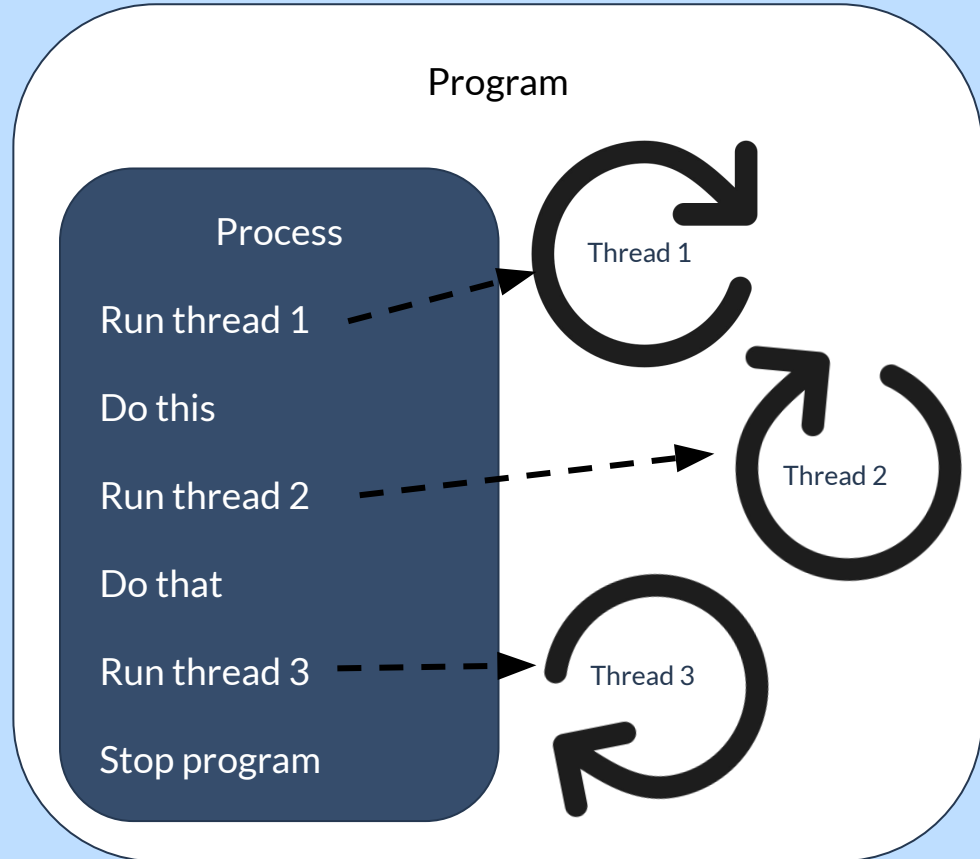
# main program
def main():
    #put your real code here
    print(double(5))

#this is just standard
if __name__ == "__main__":
    main()
```

Week 7 + 8

What is a thread?

A way to run multiple programs
at the same time



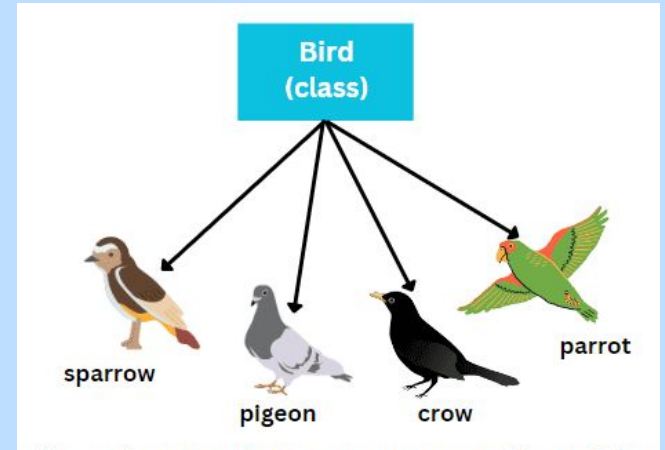
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What is a Class?

A custom object with unique:
Variables, functions, and types

Reuse and make many other similar objects

Its like a skeleton, that you fill in the details with



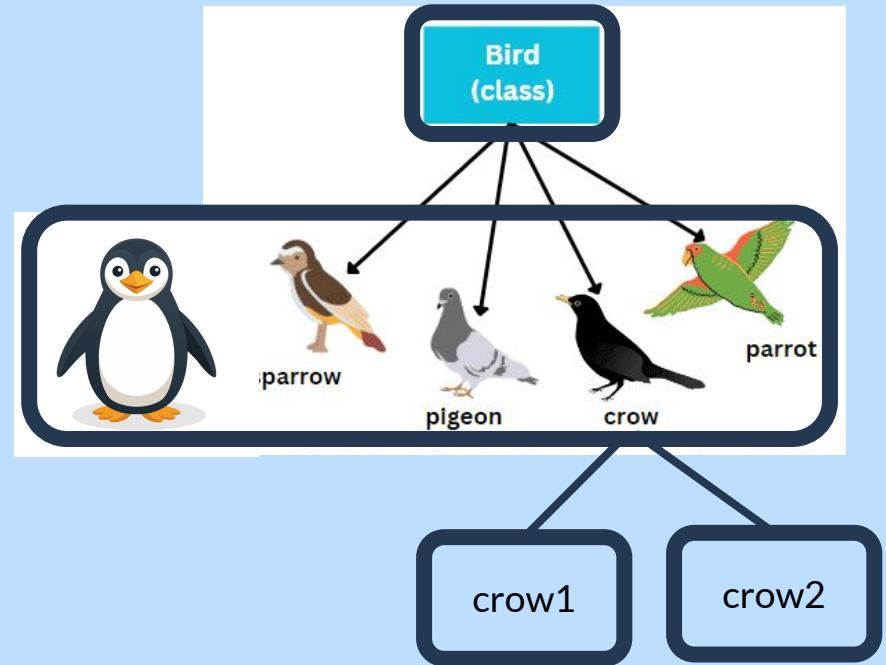
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Parent Classes

Children Classes

Variables: Shared + differences

Functions: Shared + differences



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Coding activity! Get out your Chromebooks!

Everyone look up:

python online compiler

Or

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



