

Week 7 - Friday

**COMP 1800**

# Last time

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- What did we talk about last time?
- Color and images
- **Pixel** class
- **Image** class

# Questions?

# Assignment 5

# Namespaces

# Imports

- Did you ever wonder how Python code is organized?
- How do imports work?
- What happens if you write a function called **run()** but one of the libraries you're using has a function called **run()** too?
- The key organizing principle is **namespaces**

# Builtins

- Some special functions are always available and don't need to be imported
- These are called **builtins**:

`chr()`  
`float()`  
`input()`  
`int()`  
`len()`  
`max()`

`min()`  
`print()`  
`range()`  
`round()`  
`str()`  
`sum()`

- IDLE shows these in **purple** font
- There are more, but these are the ones we've talked about in class

# Importing a module

- Most of the imports in this class have been importing a module
- Doing so gives you access to code in the module
- But it also requires you to type the name of the module with using stuff from it

```
import math
print(math.pi)
print(math.sqrt(5))
```



# Importing from a module

- If you don't want to type the name of a module, you can import functions or objects from the module

```
from math import pi
print(pi) # no math. needed!
```

- You can even import everything from a module, using the wildcard \*

```
from math import *
print(pi) # math. is never needed again!
print(sqrt(5))
```

- The problem is that you will run into problems if something is named **pi** or **sqrt** in another module you import everything from

# If something goes wrong ...

- You can use the `dir()` command to see what names are visible in your current Python environment
- We usually run `dir()` in interactive mode so that we can look through the names

```
>>> dir()
```

- You can also use it to see what's inside a module you import

```
>>> import math  
>>> dir(math)
```

# Work Time

# Upcoming

# Next time...

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- More image processing

# Reminders

- Keep reading 6.4 and also read 6.5
- **Finish Assignment 5**
  - **Due tonight before midnight!**
- Work on Assignment 6
  - Due next Friday before midnight