Classes

Overview

- In this part we will begin working with classes. By defining your own classes, we can make our programs more efficient and applicable. Using classes, we can model physical objects or tangible ideas. We can program information about an object's attributes or it's behaviors. We will learn how to:
  - Define our own classes
  - Write our own method for class
  - Call our classes to make multiple objects
  - Update attribute of class object
  - Create parent and child classes
  - Use inheritance to inherit attributes and methods from a parent class
  - Use the tkinter library to make a graphical user interface (GUI) application

Data Types

- Strings: A collection of characters
- Integers: Whole numbers
- Float: Decimal numbers
- Lists: A mutable collection
- Tuples: An immutable collection
- Ranges: A sequence of integers
- Booleans: A True or False Value
- Dictionaries: A collection of associated key-value pairs

Control Structures

- If
- For loops
- if Statements
- if/else Statements
- if/elif/else Statements
- break
- pass
- Continue
- while
- def
- return

Operators

Assignment Operators

- = Assignment
- += Compound Assignment
- -+ Compound Assignment
- + Concatenation (strings)

Algebraic Operators

- + Addition
- - Subtraction
- * Multiplication
- / Division
- ** Exponentiation
- // Absolute Division
- % Modulo Division

Logical Operators

Logical Operators

- and
- or
- not

Membership Operators

- in
- not in

Comparison Operators

- == Equal to
- != Not Equal to
- < Less Than
- > Greater Than
- <= Less Than or Equal
- >= Greater Than or Equal

Built in Functions

- print()
- type()
- str()
- int()
- float()
- input()
- round()
- sorted()
- len()
- range()
- list()
- min()
- max()
- sum()
- zip()
- bin()
- hex()
- bool()
- super()

Methods

Strings

- .upper()
- .lower()
- .title()
- .strip()
- .count()
- .join()
- .startswith()
- .replace()
- .split()

Lists

- .append()
- .insert()
- .pop()
- .remove()
- .sort()
- .reverse()
- .copy()
- .index()

Dictionaries

- .items()
- .keys()
- .values()
- .most_common()

External Libraries

- math
- datetime
- cmath
- random
- collections
- time
- matplotlib
- tkinter

Challenges (Assignments)

- Pythonagachi Simulator App
- Casino Blackjack App
- Pykemon Simulator App
- Epidemic Outbreak Terminal App
- Epidemic Outbreak Gui App