

Hello World Game

Making Game with Python (1)

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Today

- Review: python basic
- String and string operator
- Input
- Print
- Save a program
- Hello World Game
- Exercise

Python Basic

- A program is a sequence of definitions and commands
- Python primitives: e.g., number, string
- Python is an object-oriented programming language, and in Python everything is an object.
- Syntax: Combine objects and operators to form expressions

Objects

- Programs manipulate data objects
- Objects have a type that defines the kinds of things program can do to them
 - Andrew is a human so he can walk, speak English, etc.
 - Chewbacca (Star wars) is a wookiee so he can walk, “mwaaarhrhh”, etc.
- Objects in python are
 - Scalar (cannot be subdivided)
 - Non-scalar (have internal structure that can be accessed)

Primitives

- Number:
 - int, float
 - +, -, *, /
- Bool:
 - True/False
 - or/and
- String:
 - +, lower(), upper()
- NoneType: None
- Type conversion: $\text{int}(x) \longleftrightarrow \text{str}(x)$

Binding Variables and Values

- Equal sign is an assignment of a value to a variable name
 - $\text{Pi} = 3.14$
 - $\text{Pi_approx} = 22/7$
- Value stored in computer memory
- An assignment binds name to value: $x=5$
- Retrieve value associated with name or variable by invoking the name
- **Variable is case-sensitive**

String

- String can be created by single quote or double quote
 - `x='this is a string'`
 - `y="this is string also"`
- Combination of single quote and double quote
 - `"I don't like this type pizza"`
 - `'He said "that is ok", then left'`
 - `'I don't like this type pizza' ??`

String operators

- `'this is ' + ' a test'`
- `int('123')`
- `float('123.45')`
- `'aBc'.lower()`
- `'aBc'.upper()`
- `'This is a test'.title()`
- `len('aBc')`
- `'I saw a dog'.find('dog')`
- `'I saw a dog'.replace('dog', 'cat')`
- `'I saw a dog'.split('a')`

Input

- input is a build-in function allowing a user to input
- Syntax:
 - input(prompt)
 - Prompt: a string representing a message before input
 - Return: a input string from keyboard
- Example:
 - name = input('What is your name')
 - print(name)
 - age = input('how old are you?')
 - age = int(age)

print

- print is a build-in function to print the message to screen or other standard output device.
- Syntax:
 - `print(object(s), sep=' ', end='\n')`

Print examples

- `print('apple', 'orange', 'banana')`
- `print('apple', 'orange', 'banana', sep=', ')`
- `print(1, 2, 3)`
- `print(1, 2, 3, sep='-', end='**')`
- `print()`
- `myname = 'John'`
- `print(f'My name is {myname}')`
- `a = 1`
- `b = 2`
- `print(f'{a} + {b} = {a+b}')`

Save a program

- Open python IDLE
- File -> new file -> type your code -> save
- Run -> run module
- Or Open terminal
 - Windows: `py your_program`
 - Mac: `python3 your_program`

Hello Word Game

- Open python IDLE
- File -> New file or shortcut key: ctr + n
- Typing
 - `# this is hello world program`
 - `print('Hello world!')`
 - `name = input('What is your name?')`
 - `print('It is nice to meet you, ' + name)`
 - `age = int(input('How old are you? '))`
 - `print(f'You will be {age+1} years old next year')`

Hello World Game (cont)

- Save the program: File -> save or shortcut: ctr + s -> helloworld.py -> enter
- Run the program: Run -> run module or shortcut: F5
- Terminar: python helloworld.py

Open computer -> Play

