Hello Word

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, operators
- Syntax: Combine objects and operators to form expressions

Primitives

- Number:
  - int, float
  - +, -, *, /
- Bool:
  - True/False
  - or/and
- String:
  - +, lower(), upper()
- NoneType: None
- Type conversion: int(x) ←→ str(x)

Binding Variables and Values

- Equal sign is an assignment of a value to a variable name
  - Pi = 3.14
  - 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(‘ ‘)

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(input(‘how old are you?’))

print

- print is a build-in function to print the message to screen or other standard output device.
- Syntax:
  - print(object(s), sep=*separator*, end=*end*, file=*file*, flush=*flush*)
    - *object(s):* Any object, and as many as you like. Will be converted to string before printed
    - sep='*separator*': Optional. Specify how to separate the objects, if there is more than one. Default is ' '
    - end='*end*':Optional. Specify what to print at the end. Default is '\n' (line feed)
    - *File:* Optional. An object with a write method. Default is sys.stdout
    - *Flush:* Optional. A Boolean, specifying if the output is flushed (True) or buffered (False). Default is False

Print examples

- print(‘apple’, ‘orange’, ‘banana’)
- print(‘apple’, ‘orange’, ‘banana’, sep=’, ’)
- print(1, 2, 3)
- print(1, 2, 3, sep=’-’, end=’**’)

Save a program

- Open python IDLE
- File -> new file -> type your code -> save
- Run -> run module
- Open terminar -> python 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(‘You will be ‘ + str(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

String formatting with {} operator

- {} operator: place-holders of variables inside the string
- Example:
  - print('{} will be {} next year'.format(name, age+1))
- Benefit: no need conversion during string concatenation

String split

- split method is to split a string into multiple items
- Syntax: string.split(separator)
- Example:
  - a = ‘She likes drawing dogs, cats, and pandas’
  - a.split()
  - a.split(‘,’)
  - a.split(‘and’)

String join

- join method is to concatenate a list of strings
- Syntax: string.join(list of strings)
- Example:
  - a = [‘dog’, ‘cat’, ‘pandas’]
  - ‘ ‘.join(a)
  - ‘-’.join(a)
  - ‘and ‘.join(a)