The Python Bible

Ben Lloyd

2021

Table of Contents

[What is IDLE 2](#_Toc60695966)

[Saving Python Files 2](#_Toc60695967)

[What is a Variable? 2](#_Toc60695968)

[Variable Quiz 3](#_Toc60695969)

[Arithmetic, Floats and Modulo 3](#_Toc60695970)

[Ordering Operations using Brackets 3](#_Toc60695971)

[Random Module 3](#_Toc60695972)

[Force a float to become an integer 3](#_Toc60695973)

[How to round numbers 3](#_Toc60695974)

[Python Number Quiz 3](#_Toc60695975)

[Storing Strings 4](#_Toc60695976)

[Python Comments 4](#_Toc60695977)

[Python Input Function 4](#_Toc60695978)

[How to stick strings together 4](#_Toc60695979)

[How to turn an integer into a string 4](#_Toc60695980)

# **What is IDLE**

* IDE – allows use to program in Python language
* Run commands and write scripts

# **Saving Python Files**

* Make sure when saving a file, it has the .py file extension

# **What is a Variable?**

* Variables can store values
* Numbers, words
* Can use a name to capture the data inside of the variable
* Number = 1
* Typing number in the shell will print out what is stored in the box
* Type(number) will print out what kind of data is stored in the variable

# **Variable Quiz**

* Python is dynamically types language what does this mean?
  + The variable type can change throughout your program
* Which of the following are some of the data types in Python?
  + Integers, Strings and Floats
* Why do we use variables?
  + To keep useful or important data for later
  + To make our code more organised
  + To make our code easier to change
* What does this python code mean? X = 2
  + Create a variable with the name x, and assign it the value of 2
* Which of these functions is used to see a variables type?
  + Type ()

# **Arithmetic, Floats and Modulo**

* Operators
  + + - \* /
* Float – decimal points – take more space than integers
* Modulo – % symbol – prints out the remainder of a sum

# **Ordering Operations using Brackets**

* BODMAS – Brackets, Order, Division, Multiplication, Addition, Subtraction
* 2 \* (5 – 1 ) = 8

# **Random Module**

* Usual done at the top of the script
* Import random
* Random.randint(1,50)

# **Force a float to become an integer**

* Potion\_health = int(random.randint(25, 50) / difficulty)

# **How to round numbers**

* Import math
* Round(1.5) – will round to 2
* To force the round down
* Math.floor(1.5) – Will round down to 1
* Math.ceil(2.1) – Will round up to 3

# **Python Number Quiz**

* What is an integer?
  + A whole number
* 2.5 is an example of…
  + A float
* What does modulo operator do?
  + Finds the remainder of a division
* How would I find the remainder of 3 divided by 2
  + 3 % 2
* What is the result of 5 % 2
  + 1
* Why do we use brackets when working with numbers?
  + Control the order in which mathematical operations are performed
* Which is the correct way to gain access to python random module?
  + Import random

# **Storing Strings**

* Name = “Ben”
* Broken string is when a string has been closed
* ‘John said to me “I will see you later”’
* When it’s a large paragraph and it keeps breaking use “””

# **Python Comments**

* Use the hash key #

# **Python Input Function**

* Python standard library
* S = Input(‘What is your name?”

# **How to stick strings together**

* Use the + operator

# **How to turn an integer into a string**

* A = “part”
* B = 1
* A + str(B)
* Python format function
  + “{} – {}”.format(A,B)
  + “{1} – {0}”.format(A,B)

# **String Function**

* String methods
* String.method()
* “Hello”.count(e)
* This will count how many e’s are in hello

# **Convert a string to Uppercase or Lower**

* X = “Happy Birthday}
* X.lower()
* “happy birthday”
* Likewise for uppercase
* Strings are an immutable type so they cannot be changed only overwritten

# **Capitalize the first letter**

* X.capitalize()

# **Capitalize the first letter of every word**

* X.title()

# **Check if something is upper or lower case**

* X.islower()
* Will return true or false

# **Check if everything is just letters**

* X.isalpha()

# **Check if everything is just numbers**

* X.isdigit()

# **Check if a piece of text is alpha numeric**

* X.isalnum()

# **Search for a piece of text**

* X = “Happy Birthday”
* X.index(“Birthday”
* 6
* Index’s start counting from 0
* If it does not exist it will give an error
* You can use x.find(“ihiuh”)
* This will give -1 and will not crash
* This is case sensitive

# **To strip everything from a string you don’t need**

* X = “00000Happy Birthday00000”
* X.strip(“0”)
* You can strip just the one side of the string
* X.lstrip(“0”)
* X.rstrip(“0”)

# **To strip spaces from either side**

* X.strip()
* Without putting anything in the ()
* Name = input(“What is your name? “).strip()
* This will remove any spaces from the side of a name

# **What is a Slice**

* Strings are itterable meaning you can go step by step until you get to the end which are called elements
* Each element has a number
  + Word = “Hello”
  + Word[0]
  + H
* To take a slice out of a string you start with a variable[start:end:steps]
* To end you need to go to the letter you want to end at and include it
* Word[0:4:1]
* Hell

# **How to slice from a letter to the end**

* Word[5:] this will go from the 5th letter to the end
* Word[5::2] will go from the 5th letter in intervals of 2
* Word[:7] will include everything up until the 7th letter

# **How to reverse a string**

* Word[::-1]

# **How to slice from the other end of the string**

* Word[-2] will give u

# **How to slice 2 parts of a string**

* Word[word.index(“cali”):word.index(“fragi”)]
* Index only returns the first instance

# **Slices Quiz**

* A string is an iterable data type
  + True
* The basic slice format is:
  + Variable[start:end:step]
* If you have string = “happy birthday” how can we pull out the word happy using a slice?
  + String[ : string.index(“\_”)]