aaWeb IDE – Python3 Environment

Accessing the IDE

1. Go to: <https://repl.it/>
2. Select Python3
3. Sign-up / Create an account
4. Make sure you can remember your account information for the rest of the course.

Using the IDE

* Use the black area like a calculator to try simple statements or commands
* Use the white area to create programs with multiple statements

Level 0: Basic Math & Strings

Accessing the Tutorial

* Go to: <http://www.letslearnpython.com/learn/>
* Skip directly to “Lesson 3: Math”

Questions

1. Complete “Lesson 3: Math – Math Basics” by typing the sample commands in the black area of the IDE.
   1. Create your own expression using 5 “+” and “-“ operators.
   2. List your expression and the result below.

5+2-3+21=25

1. Complete “Lesson 3: Math – More Operators” by typing the sample commands in the black area of the IDE.
   1. Create your own expression using 5 “\*” and “/” operators.
   2. List your expression and the result below.

5\*10/2=25

1. Complete “Lesson 3: Math – More Division” by typing the sample commands in the black area of the IDE.
   1. Create one division expression that gives a whole number answer
   2. And one division expression that gives a decimal number answer.
   3. List your expressions and the results below.

10/2/2=2.5

10/2=5

1. Complete “Lesson 3: Math – Floats” by typing the sample commands in the black area of the IDE.
   1. Use the “round()” function for the expressions you created in question #3 above.
   2. List your “round()” expressions and the results they return below.

Round(10/2/2)=2

1. Read through “Lesson 3: Math – Comparison Operators”.
   1. Why do you think Equals is “==” instead of “=”?
   2. the **double equal** sign **means** "is **equal** to" and the single **equal** sign can be roughly translated into "is."
   3. What does “=” mean?

You'll also see a single **equal** sign being used to denote variables and the like.

1. Complete “Lesson 3: Math – Practice” and “Lesson 3: Math – Practice Answers” by typing the sample commands in the black area of the IDE.
   1. Create an expression using 5 different operators that returns a “True” result
   2. And an expression using 5 different operators that returns a “False” result.
   3. List your expressions and the results returned below.
   4. 10\*2==20
   5. 10\*3==”20”
2. Complete “Lesson 4: Strings – Strings” and “Lesson 4: Strings – Examples” by typing the sample commands in the black area of the IDE.
   1. Explain why typing “apple” works and why typing apple without quotes gives an error.

When we use the word *string* in programming, we're talking about characters, like letters or symbols, or a bunch of characters put together, like words

* 1. Also explain why “2 + 5” does not equal 7.

when you use quotes it consniders it as words

1. Complete “Lesson 4: Strings – Operators” by typing the sample commands in the black area of the IDE.
   1. Explain why typing “appl” + “e” works and why typing “apple” - “e” gives an error.
   2. Concatenation is a little bit like adding - we use it to put strings together side by sidethats .You can add strings but cant subtract
   3. Also explain why “Hello” \* 10 works but why “Hello” / 10 does work.

multiplying controls how many times we show a string so it times the word by number and displays it that many times. But dividing won’t work because you can’t divide a single word.

1. Complete “Lesson 4: Strings – Indexes” by typing the sample commands in the black area of the IDE.
   1. List the letters in your first name and the index for each letter in your first name.

‘G; + ;U; + ‘R’ + ‘N’ + ‘O’ + ‘O’ + ‘R’

0 1 2 3 4 5 6

1. Complete “Lesson 4: Strings – Indexes Examples” by typing the sample commands in the black area of the IDE.
   1. Explain why print(“Hello!”[4]) does not print “l”

Because the first letter is 0 and I is 3 if you wanted to print it.

* 1. What does print(“Hay, Bob!”[4]) print? For a hint try print(“Hay, Bob!”[ 3]) and print(“Hay, Bob!”[5])

It prints B

1. Complete “Lesson 4: Strings – Rules” by typing the sample commands in the black area of the IDE.
   1. Explain why print(“Hello!”[7]) gives an error.

(“Hello!”[7]) gives error because there are not 7 letters in the word.

Level 1: Basic Math & Strings

Accessing the Tutorial

* Go to: <http://www.letslearnpython.com/learn/>
* Skip directly to “Lesson 5: Variables”

Questions

1. Complete “Lesson 5: Variables – Save a Value” by typing the sample commands in the black area of the IDE.
   1. What do you get if you type puppies / 3?

When I type in puppies / 3 I get the number 12

* 1. Why doesn’t typing kittens / 3 work?

Kittens does not work because the variable is set to puppies so the software does not recognize the variable and that’s why it does not work. Kittens has no value set to it that’s why it does not work

1. Complete “Lesson 5: Variables – Assign a New Value” by typing the sample commands in the black area of the IDE.
   1. Explain how the following sequence of commands works:
      * puppies = 36

This gives puppies the variable a value of 36

* + - puppies = puppies / 6

this command says that puppies which has a value of 36 divided by 6 will give puppies a new value which would be 6

* + - puppies

by typing puppies it would show the value of the variable which is 6

1. Read through “Lesson 5: Variables – Rules”.
2. Complete “Lesson 5: Variables – Math Operators” by typing the sample commands in the black area of the IDE.
   1. Explain what happens for following sequence of commands:
      * colour = “red”
      * puppies = 36
      * colour + puppies

I get red36

1. Complete “Lesson 5: Variables – String Operators” by typing the sample commands in the black area of the IDE.
   1. Explain why the following commands give different results:
      * Color + day \* fishes
      * 'yellowMondayMondayMonday'
      * ( Color + day ) \* fishes  
        'yellowMondayyellowMondayyellowMonday'
2. Complete “Lesson 5: Variables – Indexes” by typing the sample commands in the black area of the IDE.
   1. What is the index of ‘r’ in “watermelon”?

4

* 1. Write an expression using mynumber to return ‘r’

r = "watermelon"

r [4]

'r'

1. Complete “Lesson 5: Variables – Assignments or Comparisons” by typing the sample commands in the black area of the IDE.
   1. What is the difference between “=” and “==”?

When we're assigning a value, we're saying "this equals that". That's a short sentence, so it only gets one equal sign: =

Create your own mnemonic to remember this difference.

But when we're comparing values, we're asking "is this thing equal to that thing?". And that's a longer sentence, so it gets two equal signs: ==

1. Complete “Lesson 6: Errors – Examples” by typing the sample commands in the black area of the IDE.
   1. What doesn’t “friend” + 5 work?

TypeError: must be str, not int

* 1. Wht is the difference between int and str?

int = integer, str = string

1. Read through “Lesson 6: Errors – Parts of an Error Message”.
   1. Is “friend” + 5 an example of:
      1. A Syntax Error?
      2. A Runtime Error?
      3. A Logic Error?

Syntax error

1. Read through “Lesson 6: Errors – Fixing Errors”.
   1. Use the ‘print’ command to print your first name and last name.

print("Gurnoor", "Samra")

Gurnoor Samra

1. Complete “Lesson 7: Booleans – Types of Data” by typing the sample commands in the black area of the IDE.

a) type("True")

<class 'str'>

b) type(True)

<class 'bool'>

c) It’s because one has quotations and the other doesn’t

1. Complete “Lesson 7: Booleans – What Is A Boolean” by typing the sample commands in the black area of the IDE.
   1. Why do you think that having a Boolean data type is important in computer programming?

We use them in programming a lot when we need to make decisions about what to do in our code

1. Complete “Lesson 7: Booleans – Trying Out Booleans” by typing the sample commands in the black area of the IDE.
   1. Why do you think that there is no Maybe” Boolean data value in computer programming?

There is no “maybe” in program data because

Level 2: Lists & Logic

Accessing the Tutorial

* Go to: <http://www.letslearnpython.com/learn/>
* Skip directly to “Lesson 7: Booleans”

Questions

1. Complete “Lesson 7: Booleans – AND Comparisons” by typing the sample commands in the black area of the IDE.
   1. Try the following Python statements and record the results.
      1. True and True

True

* + 1. True and False

False

* + 1. False and True

False

* + 1. False and False

False

* 1. Explain if there are any other combinations of True / False.

There are no other possible outcomes with True/False because the outcomes listed above are the only outcomes(2\*2=4)

* 1. Explain how the AND operator is similar to a math operator and how it is different.

The (and) is similar to (or) it is different because and is comparing more than one thing while or compares two

1. Complete “Lesson 7: Booleans – OR Comparisons” by typing the sample commands in the black area of the IDE.
   1. Try the following Python statements and record the results.
      1. True or True
      2. True
      3. True or False
      4. true
      5. False or True

True

* + 1. False or False

False

* 1. Explain how the OR operator is similar to the AND operator and how it is different.

The (and) is similar to (or) it is different because and is comparing more than one thing while or compares two

1. Complete “Lesson 7: Booleans – NOT Comparisons” by typing the sample commands in the black area of the IDE.
   1. Try the following Python statements and record the results.
      1. not (True or True)

False

* + 1. not (True or False)

False

* + 1. not (False or True)

Flase

* + 1. not (False or False)
    2. True
  1. Explain how the combination of the NOT & OR operators is similar to the AND operator by itself and how it is different.

The (and) is similar to (or) it is different because and is comparing more than one thing while or compares two But its saying the option has to be opposite

1. Complete “Lesson 7: Booleans – Expressions” by typing the sample commands in the black area of the IDE.
   1. Explain why the following two Python statements give different results.
      1. not (True or True)
      2. not True or True

because one is saying that it cant be True and the second one is saying that it cant be true but can be true

* 1. Explain why the following two Python statements give the same results.
     1. not (True and True)
     2. not True and True

because both of them are saying that True cannot be the answer given so that’s why it gave false

1. Complete “Lesson 7: Booleans – Practice” by typing the sample commands in the black area of the IDE.
   1. Create three more practice expressions similar to those in the tutorial.

3==1 3==3, “Gurnoor”== “Gurnoor”, 2==2,2==1

* 1. Provide the results for your practice expressions

1. False True, True, True False
2. Complete “Lesson 8: Lists – A Collection of Objects” by typing the sample commands in the black area of the IDE.
   1. Create a list of your favorite sports teams.

FC Barcelona, Eagle volley

* 1. Assign your list to a variable.
  2. Confirm that your variable and your list are the same.

1. Complete “Lesson 8: Lists – List Indexes” by typing the sample commands in the black area of the IDE.
   1. What is the list index of the last team in your list of favorite sports teams.
   2. In the tutorial, the error produced by typing “fruit[3]” is an example of:
      1. A Syntax Error?
      2. A Runtime Error?
      3. A Logic Error?
2. Complete “Lesson 8: Lists – Practice” and “Lesson 8: Lists – Practice Answers” by typing the sample commands in the black area of the IDE.

NOTE: Starting with Lesson 9 you should use the WHITE area of the IDE for entering example code with multiple statements.

1. Complete “Lesson 9: Logic – Making Decisions” by typing the sample commands in the white area of the IDE.
   1. Modify the tutorial code to print “Hi Alfred!” based on a decision using numbers
2. Complete “Lesson 9: Logic – Adding A Choice” by typing the sample commands in the white area of the IDE.
   1. Modify the tutorial code to print your first name or your last name based on a choice (using “else”).
3. Complete “Lesson 9: Logic – Adding Many Choices” and “Lesson 9: Logic – Practice” by typing the sample commands in the white area of the IDE.
   1. Modify the tutorial code and “elif” statements to make a choice using at least 4 of your friends names.