Web 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 1: Booleans & Variables

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?

You can give your value a name, then you can use that name over and over again. Here we're using the name 'puppies' then saying that puppies is equal to 6 times 6.

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

You can give your value a name, then you can use that name over and over again. Here we're using the name 'puppies' then saying that puppies is equal to 6 times 6.

It doesn’t work because kittens have no value

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
      * puppies = puppies / 6
      * puppies

it works because you’re giving it a new value

• puppies = 36 means puppies==36

• puppies = puppies / 6 means 36=6/6

• puppies means 6\*6\*6=36

1. Read through “Lesson 5: Variables – Rules”.

Here are some of the rules to remember about variables:

* Calculate once, keep the result to use later

The first thing is that you can use them to store values. You only have to do the calculation once, but you can keep the result around to use later.

* Keep the same name, change the value

The second thing is that you can keep the same name for your variable, but give it different values.

Example:

color = "yellow"

color

'yellow'

And

color = "red"

color

'red'

1. 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

• colour = “red” the variable is color and the value is red, when you enter the variable you will see red

* puppies = 36 means puppies==36
  + - colour + puppies

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
      * ( Color + day ) \* fishes
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”?
   2. Write an expression using mynumber to return ‘r’
3. 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 “==”?
   2. Create your own mnemonic to remember this difference.
4. Complete “Lesson 6: Errors – Examples” by typing the sample commands in the black area of the IDE.
   1. What doesn’t “friend” + 5 work?
   2. Wht is the difference between int and str?
5. 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?
6. Read through “Lesson 6: Errors – Fixing Errors”.
   1. Use the ‘print’ command to print your first name and last name.
7. Complete “Lesson 7: Booleans – Types of Data” by typing the sample commands in the black area of the IDE.
   1. What is the value of: type(“True”)
   2. What is the value of: type( True )
   3. Why is the result different?

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?
2. 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?

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
      2. True and False
      3. False and True
      4. False and False
   2. Explain if there are any other combinations of True / False.
   3. Explain how the AND operator is similar to a math operator and how it is different.
2. 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 or False
      3. False or True
      4. False or False
   2. Explain how the OR operator is similar to the AND operator and how it is different.
3. 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)
      2. not (True or False)
      3. not (False or True)
      4. not (False or False)
   2. Explain how the combination of the NOT & OR operators is similar to the AND operator by itself and how it is different.
4. 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
   2. Explain why the following two Python statements give the same results.
      1. not (True and True)
      2. not True and True
5. 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.
   2. Provide the results for your practice expressions
6. 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.
   2. Assign your list to a variable.
   3. Confirm that your variable and your list are the same.
7. 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?
8. 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.