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 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.**
2. **5+5-2**
3. => 8 **9+5-10**
4. => 4 **10-20**
5. => -10 **56+79**
6. => 135 **8+9-16**
7. => 1 **9+10**
8. => 19
9. **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.**
10. **5\*6**
11. => 30
12. **7\*9**
13. => 63
14. **12\*12**
15. => 144
16. **4\*4/2**
17. => 8.0
18. **9\*16**
19. => 144
20. **18/4**
21. => 4.5
22. **100/5**
23. => 20.0
24. **2/2**
25. => 1.0
26. **5/2**
27. => 2.5
28. **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**
29. **10/2**
30. => 5.0

* 1. **And one division expression that gives a decimal number answer.**

1. **7/4**
2. => 1.75
3. **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.**
4. **round(7/4)**
5. => 2
6. **Read through “Lesson 3: Math – Comparison Operators”.** 
   1. **Why do you think Equals is “==” instead of “=”?**

“==” Means equal to

* 1. “=” translates to “is”

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. **16 \* 2 == 32**
3. => True
4. **5<6**
5. => True
6. **34<=45**
7. => True
8. **25==25**
9. => True
10. **23<=23**
11. => True
    1. And an expression using 5 different operators that returns a “False” result.
12. **16 != 16**
13. => False
14. **5>6**
15. => False
16. **16!=16**
17. => False
18. **23<=6**
19. => False
20. **45>100**
21. => False
22. **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.**

Because a string is letters and characters such as the abc’s and commas and other symbols and “Apple” consists of letters which makes it a string and need qoutes

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

Because the question has quotes around it, the program considers it a string

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.

You cannot subtract strings

* 1. Also explain why “Hello” \* 10 works but why “Hello” / 10 does work.

Because you cannot divide strings

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.

‘K’+‘A’+‘R’+‘M’+‘A’+‘N’

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 print outs “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]) produces an error because there are not a total of 7 letters

\*Level 1 is on the next page

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?**

**Puppies = 6\*6**

Puppies / 3 then you get 12.0

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

Kittens / 3 produces an error because it is not assigned the variable: 6\*6

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 now has a new value of 36

* + - **puppies = puppies / 6**

Since the new value for puppies is 36, when divided by 6, the new value is 6

* + - **puppies**

When you type in puppies it will return a value of 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

When you type in the sample commands then the output will 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

1. **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”?**

The index of r is 4.

**b)Write an expression using mynumber to return ‘r’**

r = ‘Watermelon’

r[4]

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: =
      * 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: ==

**Create your own mnemonic to remember this difference.**

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: should 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?**

It is an example Syntax error

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

print("Karman", "Gill")

**Karman Gill**

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

**What is the value of: type(“true”)**

a) type("True")

      <class 'str'>

**What is the value of: type(true)**

   b)  type(True)

     <class 'bool'>

**Why is the result different**

    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.**

**a)Why do you think that having a Boolean data type is important in computer programming?**

We use Boolean type data in programming a lot when we need to make decisions about what to do in our code,  the Boolean data type is a data type, having two values (usually denoted true and false), intended to represent the truth values of logic and Boolean algebra.

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

**a)Why do you think that there is no Maybe”  Boolean data value in computer programming?**

There is no “Maybe” because our technology is not yet advanced enough