Herrera_Christian_Lab1

February 14, 2026

1 Lab 1.Basic Python Questions

2 Assignment Submission Guidelines

Please follow the guidelines below for submitting your assignment:

1. **Submission Deadline:**
   - All assignments must be submitted **by end of the lab class**.
   - Late submissions will not be accepted unless prior arrangements have been made by the TAs.
2. **Submission Platform:**
   - Submit your assignment through **Canvas**. Ensure that you upload the files to the correct assignment link.
3. **Required Files:**
   - **Python Script (.ipynb file):** Submit the Python script you used to complete the assignment. The file should contain your well-commented code.
   - **PDF Version (.pdf file):** Additionally, submit a PDF version of your Python code. This can be a printout or export of your script, showing all the code with any necessary explanations or output results included.
4. **File Naming Convention:**
   - Please name your files as follows: `Lastname_Firstname_AssignmentName`
   - Example: `Alex_John_Lab1.ipynb` and `Alex_John_Lab1.pdf`
5. **Technical Issues:**
   - If you encounter any technical issues with Canvas or your submission, please contact the TAs immediately **before the deadline** to avoid penalties.
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3 Questions

Question 1: What are the two types of numeric data types in Python? give me example of each example. (5 Points)

[35]:
```
#In python the two numeric data types are integers (int) and floating point␣
↪(float) numers.
#ints are whole numbers, eg 1, 2, 3 and floats are numbers such as 1.23 or 2.41.
↪
```

```
int_ex = 1
float_ex = 1.24
```

Question 2: How do you convert the string "123" into an integer? (5 Points)

[36]:
```
#You can call the int() function on the string to convert it to an integer.
#eg int('123') will give you the integer 123 as an integer data type.

str_ex = '123'
int_from_str = int(str_ex)
```

Question 3: Write a Python expression that adds two integers and then multiplies the result by a float. (5 Points)

[ ]:
```
num_1 = 5 # Integer 1
num_2 = 4 # Integer 2
num_3 = 44.22 # Float 1

result = (num_1 + num_2)* num_3 # Performing the mathematical operation.

print(result) # PRinting the result.
```

```
397.98
```

Question 4: What is the output of the following code: print(8 / 4)? (5 Points)

[38]:
```
print(8/4)

# The resulting output is 2.0, which is a float data type.
```

```
2.0
```

Question 5: Given the variables x = 5 and y = 2, write a Python expression that uses PEMDAS rules to calculate (x^2 + y) / (y - x). (5 Points)

[ ]:
```
x = 5 # Defining x
y = 2 # Defining y

calculation = (x**2 + y)/(y-x) # Performing the calculation.
print(calculation) # Printing the result.
```

```
-9.0
```

Question 6: How do you create a string variable containing the text "Hello, Python!"? (5 Points)

[40]:
```
# You write your variable name, then the equal sign, then you use ' ' to define␣
 ↪the string.

string_ex = 'Hello, Python!'
```

Question 7: Write a Python line of code that asks the user for their name and then prints a greeting including the name. (5 Points)

[ ]:
```
input_name = input("Enter your name: ") # Getting the user input.
print(f'Hello, {input_name}!') # Printing the output based on the input.
```

```
Hello, Christian !
```

Question 8: What will be the output of the following code snippet: print(10 % 3)? (5 Points)

[42]:
```
print(10%3)
# This represents the remainder after dividing 10 by 3, which is 1.
```

```
1
```

Question 9: Create a float number, then convert a float to an integer in Python? (5 Points)

[ ]:
```
float_ex = 1.24 # Random float.
int_from_float = int(float_ex) # Converting to int.

print(int_from_float)
```

```
1
```

Question 10: Write a Python code snippet that calculates the average of three numbers: 4, 5, and 8. (5 Points)

[ ]:
```
num_list = [4,5,8] # Defining the list of numbers provided.

def average(num_list):
    return sum(num_list) / len(num_list) # Returning the average of the list of␣
 ↪numbers.

average(num_list) # Calling the function on the list.

# I prefer to think of this in terms of a function instead of individually␣
 ↪defined variables and such.
```

[ ]:
```
5.666666666666667
```

Question 11: Explain the difference between the output of print(9 // 2) and print(9 / 2). (5 Points)

[ ]:
```
# // is floor division, it will divide and then round down.
# / is normal division, which will yield a float.

print(9//2, 9/2)
```

```
4 4.5
```

Question 12: Write a Python script that takes two user inputs: first_name and last_name, then prints them in reverse order with a space between them. (5 Points)

[ ]:
```
first_name = input("Enter your first name: ") # Getting first name input.
last_name = input("Enter your last name: ") # Getting last name input.
```

```
print(f'Hello, {last_name} {first_name}!') # Printing the output based on the␣
↪inputs.
```

```
Hello, Herrera Christian!
```

Question 13: What is the result of the following expression: (100 - 5 ** 3) / 5? (5 Points)

[ ]:
```
expression = (100 - 5**3)/5 # Performing the mathematical operation.
print(expression) # Printing the result.

# Result is -5.0, a float.
```

[ ]:
```
-5.0
```

Question 14: Calculate the result of the following expression and explain the order of operations: (8 + 2 * 5) / (1 + 3 * 2 - 4). (5 Points)

[ ]:
```
expression_1 = (8 + 2*5)/(1 + 3*2 - 4) # Performing the operation.
print(expression_1) # Printing the result.

# The order of operations handled by evaluating the numerator and denominator␣
↪separately, then dividing.
# The numerator is 8 + 2*5 = 8 + 10 = 18
# The denominator is 1 + 3*2 - 4 = 1 + 6 - 4 = 3
# So the final result is 18 / 3 = 6.0, a float.
```

```
6.0
```

Question 15: String and Arithmetic Operations: Given x = “100” and y = “200”, convert them to integers, add them, then convert the result back to a string. (5 Points)

[ ]:
```
x = '100' # The provided x value as a string.
y = '200' # The provided y value as a string.

x_int = int(x) # Converting x to int.
y_int = int(y) # Converting y to int.

add_strings = x_int + y_int # Adding the two integers.

add_strings_as_str = str(add_strings) # Converting the result back to string.

print(add_strings_as_str, type(add_strings_as_str))  # This will print '300' as␣
↪a string.
```

```
300 <class 'str'>
```

Question 16: User Input Conversion: Write a Python script that asks for two numbers from the user, converts them to integers, multiplies them, and prints the result. Comparing Strings and Integers: What will be the result of comparing (5 Points)

[ ]:
```
num_1 = int(input("Enter first number: "))
num_2 = int(input("Enter second number: "))

# I handled the int conversion up front.

num_multiply = num_1 * num_2 # Multiplying the two integers.

print(num_multiply) # Printing the result.
```

```
8
```

Question 17: Given a = 5.7 and b = "3", convert b to an integer, add a and b, and round the result to the nearest integer. (5 Points)

[ ]:
```
a = 5.7 # The provided float number.
b = '3' # The provided string number.

b_as_int = int(b) # Converting to int here.

a_b_add = a + b_as_int # Adding the float and int.

a_b_add_rounded = round(a_b_add,0) # Rounding to nearest integer.

print(a_b_add_rounded) # printing the result
```

```
9.0
```

Question 18: Write a Python program that requests the user to input a distance in kilometers and then converts it to miles." (5 Points)

[ ]:
```
km = float(input("Enter distance in kilometers: ")) # Getting distance in␣
↪kilometers.
miles = km * 0.621 # Converting to miles.
print(f"Distance in miles: {miles}") # Printing the distance in miles.
```

```
Distance in miles: 1505.304
```

Question 19: Develop a Python script that prompts the user to provide a speed in kilometers per hour and then converts it to meters per second (5 Points)

[ ]:
```
kmph = float(input("Enter speed in kilometers per hour: ")) # Getting the user␣
↪input.
mps = kmph * 1000 / 3600 # Converting km/h to m/s
print(f"Speed in meters per second: {mps}") # Printing the result.
```

```
Speed in meters per second: 123151206484537.23
```

Question 20: Create a Python application that asks the user to enter an amount in pounds and then converts it to kilograms. (5 Points)

[34]:
```
lbs = float(input("Enter weight in pounds: ")) # Getting user input, again.
kilograms = lbs * 0.453 # Converting pounds to kilograms.
print(f"Weight in kilograms: {kilograms}") # Printing the result.
```

```
Weight in kilograms: 109818.072
```