Lab 1

Wednesday, August 28, 2024 15:44

Objectives

In this lab, you will:

1. Find your partner and become familiar with pair programming.
2. Learn some essential elements of the Python programming language, including arithmetic operations, Type and Print functions, and writing comments.
3. Learn about different error types.

Getting Started

Introduce yourself to your partner. Decide who will start as the driver and who will start as the observer. Remember that you will switch roles every 10 minutes or so. Have the driver login an open **Python 3 IDLE** (you can search for this in the search bar on the bottom left).

You will use the interactive shell (the window that should now be open with some text and the last line consisting of > > >) for this lab. You may want to save a copy of the code for your own notes.

Part I: Tutorial

As mentioned, you will use the interactive shell for this Lab. Do not close out of the shell or clear it until the instructor or TA has checked your output.

Each of the following three sections will explore an aspect of Python. Each section is split up into the following parts:

- **Try:** Type in the commands exactly as written and observe the output.
- **Explain:** Discuss the behavior of the statements from the try section with your partner. Explain what the commands are doing.
- **Predict:** Predict what each of these commands is going to do, and then type them into the interactive shell to see if your predictions were correct.
- **Adapt:** Use what you have learned to write your own command to complete the listed tasks.

A: Write Comments

Writing comments is a necessary and important task in programming. In Python, we use # sign to add comments to our codes. Lines that begin with #, are ignored by Python.

Try:

the authors' name are:

B: Print statements

```
print("Hello, world")
print("Welcome to CPSC 207")
print("Hello\nWorld")
print("How\nare\nyou?")
print("Today", "is", "Wednesday")
print("Today" + "is" + "Wednesday")
```

Explain:

1. What does the print statement do? It interprets what was written in code
2. What does \n do? It breaks the line or makes a new line
3. A string is text enclosed by quotation marks. What happens when you add strings together with the + operator (as in the last line of code)? All the words become one string without spaces.

Predict:

```
print("a\nb\nc")
print("Hello" + "World")
print("Hello\n" + "\nWorld!")
```

a
b
c
HelloWorld
Hello
World

We predicted correctly!

Adapt:

Write a *single* line of code to display the following text:

123
45
6

print("123\n45\n6")

C: Arithmetic Operations

Try:

```
1+2*3
(1+2)*3
7/3
7//3
7%3
22/4
22//4
22%4
3**2
2**3
```

Explain:

1. Does Python follow the usual order of operations? Yes
2. What is the difference between / and //? / will compute division normally.
3. What does % do? % shows the remainder of a division computation. // will show the division answer with only the integer, not with the remainder
4. What does ** do? ** is a math power function and will place the next number as an exponent.

Predict:

```
(4 + 3)//2 =3
 6%2 =0
```

Adapt: Write a single line of code to compute $1 + 2 \times 3^4$. 1+2*3**4

Write a single line of code to return $2 + 2 = 4$.
Hint: print("2+2=", 2+2). print("2+2=", 2+2)

Write a single line of code to convert 50 pounds to kg.
Hint: print("50 pounds is ", 50*0.453592, "Kilograms").
print("50 pounds is ", 50*0.453592, "Kilograms").