Python Programming

LAB ASSIGNMENT 1

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OBJECTIVE

The objective of this assignment is to focus on the basics of Python like the syntax, data types, using arithmetic operators, use of functions and conditional statements. Also, about loops and conditional statements.

FEATURES

The task consists of 4 questions which checks our programs for all kinds of features like ability to test a password for a website or to use the arithmetic and binary operators by checking the middle and longest word in a sentence or how to create a list and extract information from that list.

CONFIGURATION

OS: Windows 10

Python version: 3.4

IDE used: PyCharm

INPUT AND OUTPUT

Question 1

To validate the password conditions of UMKC web application

Input- 280981997- all numbers

Output- error message

Input- nam123(numbers and letters)

Output- error message

Input- nam@123

Output- error message

Input- Nam@123

Output- Password is correct(as numbers, lower case letters, upper case letters all provided)

Question2

To get the middle words, longest word and reversed letters of a sentence

Input- my name is Namrata

Output- The middle word is : name is

The longest word is : namrata

Sentence with reversed words is : ym eman si atarman

Question 3

Finding triplets from a list of numbers which adds to 0

```
Input- A =[1, 1, 2, -2, 0, 9]
```

Output- Triplet is 1 , 1 , -2

Question 4

Finding the list of students from the list of students of 2 enrolled courses who have taken same courses and who have taken different courses

Input-

```
webapp = ['nam', 'puj', 'srav', 'sudhee']
python = ['nam', 'puj', 'sak', 'srini', 'dev']
```

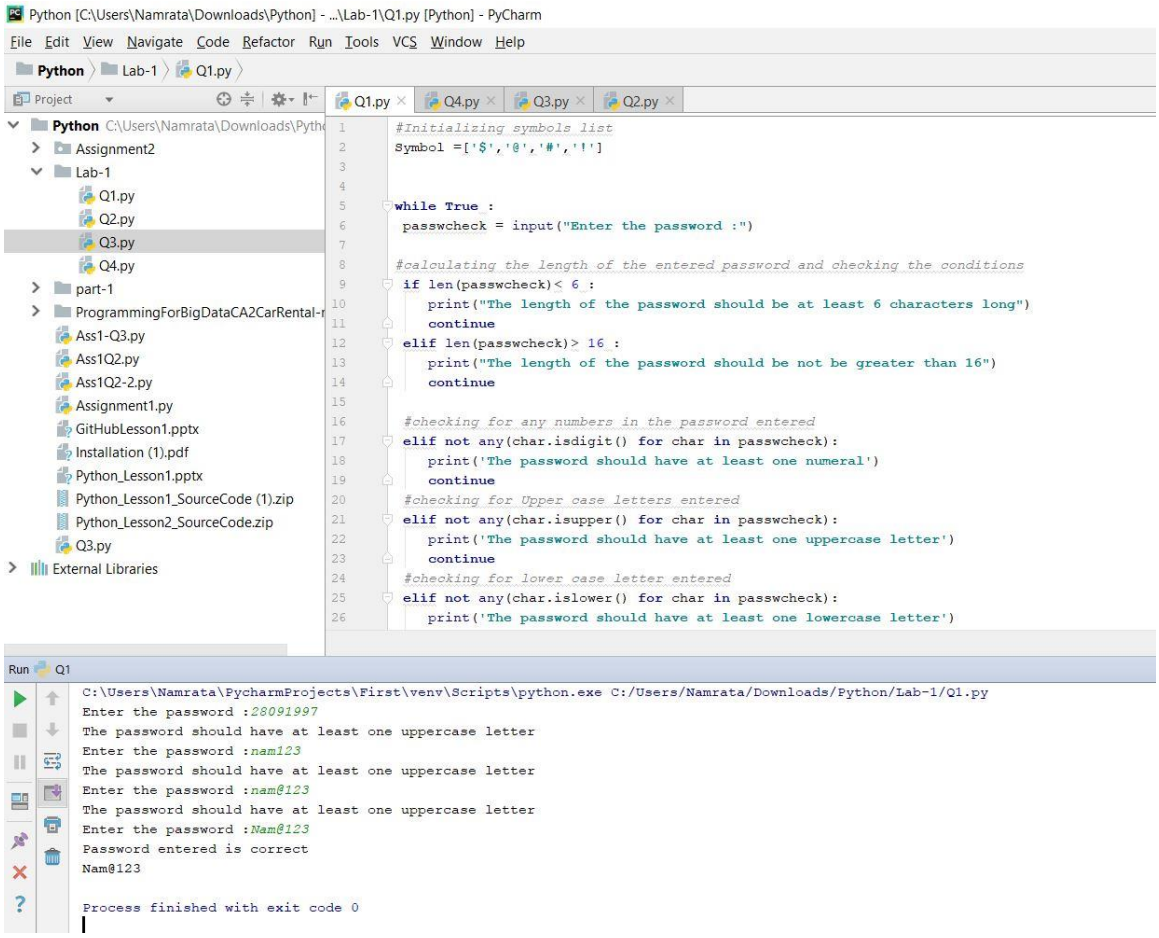
Output-

['nam', 'puj']

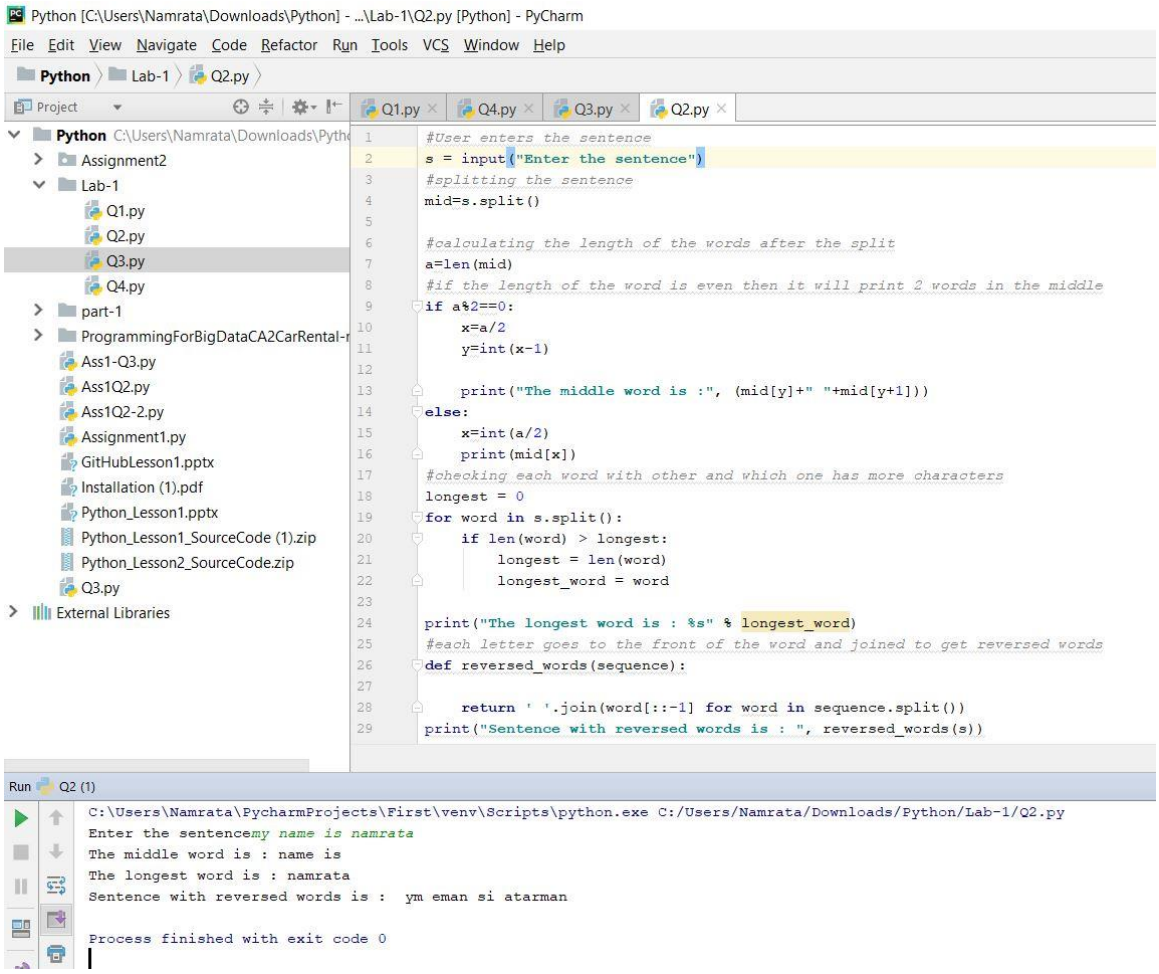
['srav', 'sudhee', 'sak', 'srini', 'dev']

IMPLEMENTATION

1. **Task 1**



2. Task 2


Python [C:\Users\Namrata\Downloads\Python] - ...\Lab-1\Q2.py [Python] - PyCharm
File Edit View Navigate Code Refactor Run Tools VCS Window Help
Python Lab-1 Q2.py
Project
Q1.py Q4.py Q3.py Q2.py
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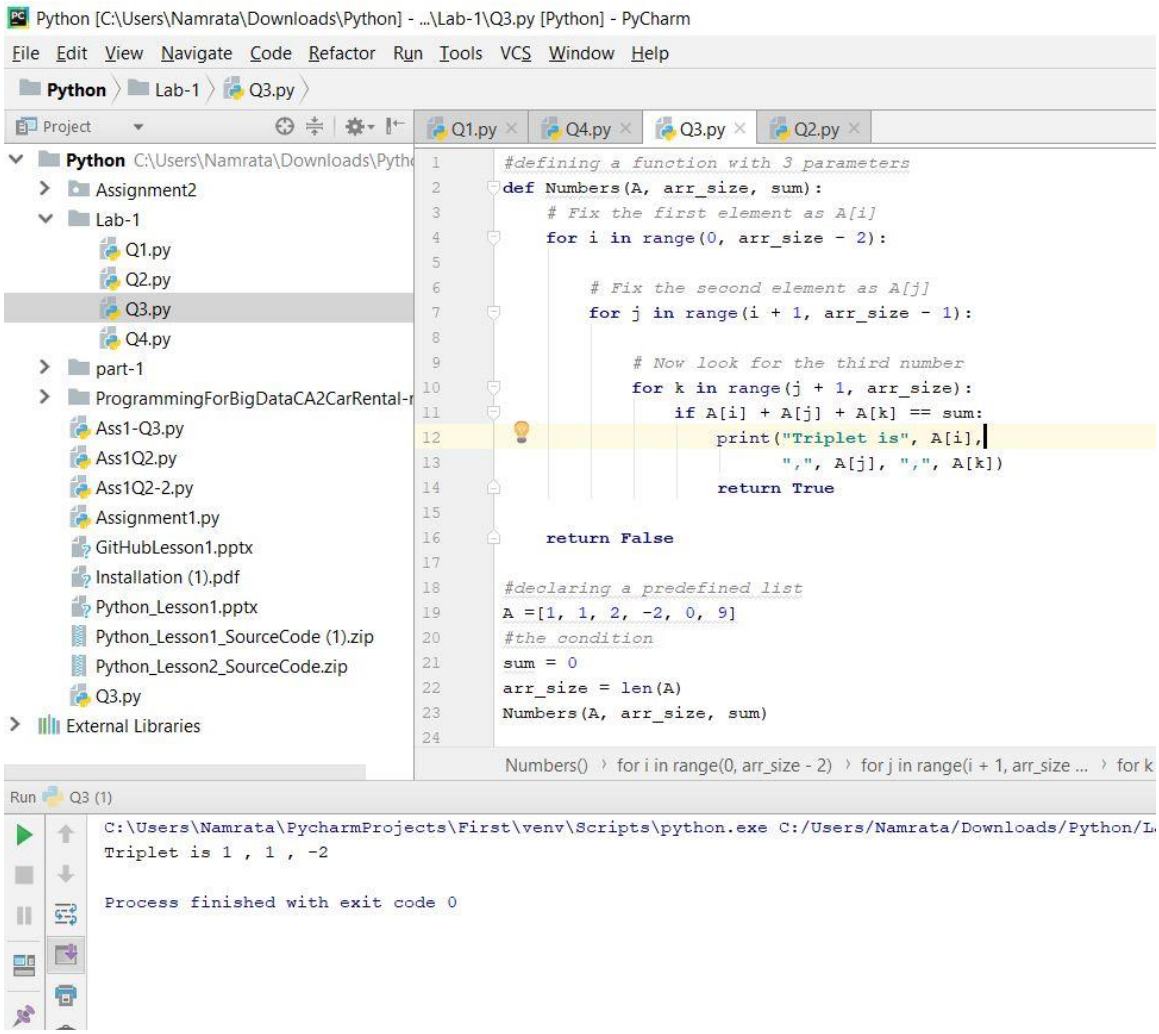
Assignment2
Lab-1
Q1.py
Q2.py
Q3.py
Q4.py
part-1
ProgrammingForBigDataCA2CarRental-
Ass1-Q3.py
Ass1Q2.py
Ass1Q2-2.py
Assignment1.py
GitHubLesson1.pptx
Installation (1).pdf
Python_Lesson1.pptx
Python_Lesson1_SourceCode (1).zip
Python_Lesson2_SourceCode.zip
Q3.py
External Libraries
#User enters the sentence
s = input("Enter the sentence")
#splitting the sentence
mid=s.split()
#calculating the length of the words after the split
a=len(mid)
#if the length of the word is even then it will print 2 words in the middle
if a%2==0:
x=a/2
y=int(x-1)
print("The middle word is :", (mid[y]+" "+mid[y+1]))
else:
x=int(a/2)
print(mid[x])
#checking each word with other and which one has more characters
longest = 0
for word in s.split():
if len(word) > longest:
longest = len(word)
longest_word = word
print("The longest word is : %s" % longest_word)
#each letter goes to the front of the word and joined to get reversed words
def reversed_words(sequence):
return ' '.join(word[::-1] for word in sequence.split())
print("Sentence with reversed words is : ", reversed_words(s))
Run Q2 (1)
C:\Users\Namrata\PycharmProjects\First\venv\Scripts\python.exe C:/Users/Namrata/Downloads/Python/Lab-1/Q2.py
Enter the sentencemy name is namrata
The middle word is : name is
The longest word is : namrata
Sentence with reversed words is : ym eman si atarman
Process finished with exit code 0

3. Task 3


Python [C:\Users\Namrata\Downloads\Python] - ...\Lab-1\Q3.py [Python] - PyCharm
File Edit View Navigate Code Refactor Run Tools VCS Window Help
Python Lab-1 Q3.py
Project
Q1.py Q4.py Q3.py Q2.py
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Assignment2
Lab-1
Q1.py
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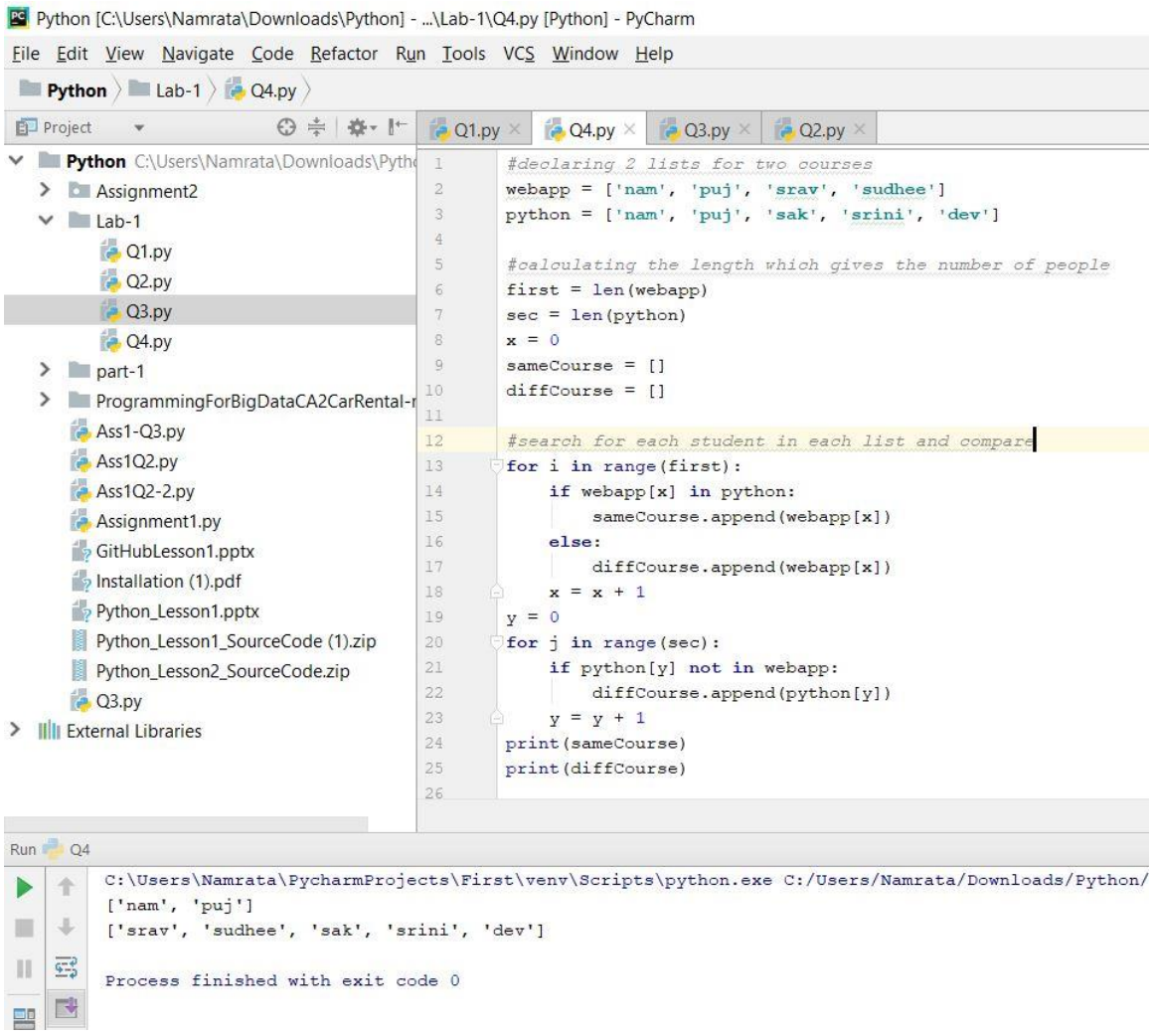
ProgrammingForBigDataCA2CarRental-r
Ass1-Q3.py
Ass1Q2.py
Ass1Q2-2.py
Assignment1.py
GitHubLesson1.pptx
Installation (1).pdf
Python_Lesson1.pptx
Python_Lesson1_SourceCode (1).zip
Python_Lesson2_SourceCode.zip
Q3.py
External Libraries
#defining a function with 3 parameters
def Numbers(A, arr_size, sum):
# Fix the first element as A[i]
for i in range(0, arr_size - 2):
# Fix the second element as A[j]
for j in range(i + 1, arr_size - 1):
# Now look for the third number
for k in range(j + 1, arr_size):
if A[i] + A[j] + A[k] == sum:
print("Triplet is", A[i],
",", A[j], ",", A[k])
return True
return False
#declaring a predefined list
A =[1, 1, 2, -2, 0, 9]
#the condition
sum = 0
arr_size = len(A)
Numbers(A, arr_size, sum)
Numbers() for i in range(0, arr_size - 2) for j in range(i + 1, arr_size ... for k
Run Q3 (1)
C:\Users\Namrata\PycharmProjects\First\venv\Scripts\python.exe C:/Users/Namrata/Downloads/Python/L
Triplet is 1 , 1 , -2
Process finished with exit code 0

4. **Task 4**



DEPLOYMENT

Implemented the program in python language and use PyCharm IDE for executing it.

LIMITATION

no limitations

REFERENCES

https://www.tutorialspoint.com/

https://stackoverflow.com