Day 1

1. Input your name into a variable called $name and then print "Hello, <your name here>".

# -\*- coding: utf-8 -\*-

"""

Created on Thu Aug 16 17:58:57 2018

@author: asakumar

"""

name="Asanga Kumar"

print("Hello,",name)

1. Write a program that adds two numbers and then prints out whether the sum of those two numbers is positive or negative.

# -\*- coding: utf-8 -\*-

"""

Created on Thu Aug 16 18:00:37 2018

@author: asakumar

"""

first=input("enter first number")

second=input("enter second number")

first=int(first)

second=int(second)

sum1=first+second

if sum1>0:

print("The sum is positive")

else:

print("The sum is negative")

1. Write a program that stores a number and keeps trying to get user input until the user enters the number correctly. As soon as the correct number is entered, it prints: Correct!

# -\*- coding: utf-8 -\*-

"""

Created on Thu Aug 16 18:04:58 2018

@author: asakumar

"""

correct=10

while 1:

number=input("enter a number")

number=int(number)

if number==correct:

print("Correct!")

break;

1. Input your first name and last name as two separate variables, labeled as $firstname and $lastname respectively. Concatenate them together using the dot operator '.' into a new variable called $wholename. Then print out the $wholename.

# -\*- coding: utf-8 -\*-

"""

Created on Thu Aug 16 18:07:06 2018

@author: asakumar

"""

firstname=input("enter your first name")

secondname=input("enter your last name")

firstname=str(firstname)

secondname=str(secondname)

wholename=[]

wholename.append(firstname)

wholename.append(secondname)

print(' '.join(wholename))

1. Write a program to accept an input string from the user and toggle the character cases.

For example, $str=” Hello How Are You?”

# -\*- coding: utf-8 -\*-

"""

Created on Thu Aug 16 18:22:10 2018

@author: asakumar

"""

data=input("enter the data")

print(data.swapcase())

1. Write a program which will perform sum and multiplication ,that sums and multiplies (respectively) all the numbers in a list of numbers. For example, sum([1, 2, 3, 4]) should return 10, and multiply([1, 2, 3, 4]) should return 24.

# -\*- coding: utf-8 -\*-

"""

Created on Fri Aug 17 08:55:15 2018

@author: asakumar

"""

op=input("enter sum or mul")

list1=[]

while 1:

a=input("enter the number")

if a=="":

break

list1.append(int(a))

sum1=0

mul1=1

if op=="sum":

for a in list1:

sum1+=a

print(sum1)

elif op=="mul":

for a in list1:

mul1 \*=a

print(mul1)

1. Write a program that takes a value (i.e. a number, string, etc) x and a list of values a, and returns True if x is a member of a, False otherwise. (Note that this is exactly what the in operator does, but for the sake of the exercise you should pretend Python did not have this operator.)

# -\*- coding: utf-8 -\*-

"""

Created on Fri Aug 17 09:06:20 2018

@author: asakumar

"""

print("enter the list")

list1=[]

while 1:

a=input("enter the element")

if a=="":

break

list1.append(a)

number=input("enter the value that is to be found")

z=0

for a in list1:

if a==number:

print("True")

z=1

break

if z==0:

print("False")

1. Write a program that has two lists and print True if they have at least one member in common, False otherwise. You may use your is\_member() function, or the in operator, but for the sake of the exercise, you should (also) write it using two nested for-loops.

# -\*- coding: utf-8 -\*-

"""

Created on Fri Aug 17 09:14:00 2018

@author: asakumar

"""

list1=[]

list2=[]

print("enter the first list")

while 1:

a=input("enter first list element")

if a=="":

break

list1.append(int(a))

while 1:

a=input("enter second list elemnts")

if a=="":

break

list2.append(int(a))

chk1=0

ck2=0

for a in list1:

for b in list2:

if a==b:

print("True")

chk1=1

break

if chk1==0:

print("False")

1. Write a program for histogram that takes a list of integers and prints a histogram to the screen. For example, histogram([4, 9, 7]) should print the following:

\*\*\*\*

\*\*\*\*\*\*\*\*\*

\*\*\*\*\*\*\*

# -\*- coding: utf-8 -\*-

"""

Created on Fri Aug 17 09:18:24 2018

@author: asakumar

"""

list1=[]

while 1:

a=input("enter the numbers")

if a=="":

break

list1.append(int(a))

for a in list1:

str1= "\*" \*a

print(str1)

Day 2

1. Define a function generate\_n\_chars() that takes an integer n and a character c and returns a string, n characters long, consisting only of c:s. For example, generate\_n\_chars(5,"x") should return the string "xxxxx". (Python is unusual in that you can actually write an expression 5 \* "x" that will evaluate to "xxxxx". For the sake of the exercise you should ignore that the problem can be solved in this manner.)

# -\*- coding: utf-8 -\*-

"""

Created on Fri Aug 17 10:03:21 2018

@author: asakumar

"""

def generate\_n\_chars(size,a):

str1=""

for i in range(0,size):

str1 +=a

print(str1)

size=input("enter the size")

size=int(size)

a=input("enter the character")

generate\_n\_chars(size,a)

1. The function max() from exercise 1) and the function max\_of\_three() from exercise 2) will only work for two and three numbers, respectively. But suppose we have a much larger number of numbers, or suppose we cannot tell in advance how many they are? Write a function max\_in\_list() that takes a list of numbers and returns the largest one.

# -\*- coding: utf-8 -\*-

"""

Created on Fri Aug 17 10:08:33 2018

@author: asakumar

"""

list1=[]

while 1:

a=input("enter the numbers")

if a=="":

break

list1.append(int(a))

max1=list1[0]

for a in list1:

if a>max1:

max1=a

print("largest is", max1)

1. Write a program that maps a list of words into a list of integers representing the lengths of the correponding words.

# -\*- coding: utf-8 -\*-

"""

Created on Fri Aug 17 10:12:15 2018

@author: asakumar

"""

print("enter the list of strings")

list1=[]

while 1:

a=input("enter the string")

if a=="":

break

list1.append(a)

print("the string list is", list1)

print("enter the list of lengths")

list2=[]

while 1:

a=input("enter th elength of strings")

if a=="":

break

list2.append(int(a))

dict1={}

for i in list1:

for j in list2:

if len(i)==j:

dict1[i]=j

list2.remove(j)

break

print(dict1)

1. Write a function find\_longest\_word() that takes a list of words and returns the length of the longest one. Modify the same to do with lambda expression.

# -\*- coding: utf-8 -\*-

"""

Created on Fri Aug 17 10:27:40 2018

@author: asakumar

"""

list1=[]

while 1:

a=input("enter the strings")

if a=="":

break

list1.append(a)

long=len(list1[0])

for i in list1:

if len(i)>long:

long=len(i)

print(long)

1. Write a function filter\_long\_words() that takes a list of words and an integer n and returns the list of words that are longer than n. Modify the same to do with lambda expression.

# -\*- coding: utf-8 -\*-

"""

Created on Fri Aug 17 10:44:39 2018

@author: asakumar

"""

number=input("enter the number")

number=int(number)

list1=[]

while 1:

a=input("enter the strings")

if a=="":

break

list1.append(a)

list2=[]

for i in list1:

if len(i)>=number:

list2.append(i)

print(list2)

1. Write a version of a palindrome recognizer that also accepts phrase palindromes such as "Go hang a salami I'm a lasagna hog.", "Was it a rat I saw?", "Step on no pets", "Sit on a potato pan, Otis", "Lisa Bonet ate no basil", "Satan, oscillate my metallic sonatas", "I roamed under it as a tired nude Maori", "Rise to vote sir", or the exclamation "Dammit, I'm mad!". Note that punctuation, capitalization, and spacing are usually ignored.

# -\*- coding: utf-8 -\*-

"""

Created on Fri Aug 17 10:51:15 2018

@author: asakumar

"""

phrase=input("enter the phrase")

list1=[]

list1=list(phrase.split())

list2=[]

for i in list1:

a=list(i.strip())

list2+=a

x=0

list3=[]

for i in list2:

if (65<= ord(i) <= 90) | (97<= ord(i) <=122):

x=1

list3.append(i.lower())

list4=[]

for i in range(len(list3)-1,-1,-1):

list4.append(list3[i])

z=0

for i in range(0,len(list4)):

if list3[i]!=list4[i]:

print("false")

z=1

break

if z==0:

print("true")

1. A pangram is a sentence that contains all the letters of the English alphabet at least once, for example: The quick brown fox jumps over the lazy dog. Your task here is to write a function to check a sentence to see if it is a pangram or not.

# -\*- coding: utf-8 -\*-

"""

Created on Fri Aug 17 11:27:23 2018

@author: asakumar

"""

str1=input("enter the sentence")

list1=list(str1.split(" "))

list2=[]

for i in list1:

list2+=list(i.strip())

list3=[]

for i in list2:

i=i.lower()

if i not in list3:

list3.append(i)

if len(list3)==26:

print("it is pangram")

else:

print("it is not pangram")

1. Represent a small bilingual lexicon as a Python dictionary in the following fashion {"merry":"god", "christmas":"jul", "and":"och", "happy":gott", "new":"nytt", "year":"år"} and use it to translate your Christmas cards from English into Swedish. That is, write a function translate() that takes a list of English words and returns a list of Swedish words.

# -\*- coding: utf-8 -\*-

"""

Created on Fri Aug 17 12:00:20 2018

@author: asakumar

"""

str1="merry christmas and happy new year"

list1=list(str1.split(" "))

dict1={"merry":"god", "christmas":"jul", "and":"och", "happy":"gott", "new":"nytt", "year":"år"}

list2=[]

for i in list1:

list2.append(dict1[i])

str2=" ".join(list2)

print(str2)

1. Write a function char\_freq() that takes a string and builds a frequency listing of the characters contained in it. Represent the frequency listing as a Python dictionary. Try it with something likechar\_freq("abbabcbdbabdbdbabababcbcbab").

# -\*- coding: utf-8 -\*-

"""

Created on Fri Aug 17 12:09:05 2018

@author: asakumar

"""

str1=input("enter the string")

list1=list(str1.strip())

dict1={}

for i in list1:

i=i.lower()

if i not in list(dict1.keys()):

dict1[i]=1

else:

dict1[i]+=1

print(dict1)

1. Create a module called mathematics.py and provide subroutines (should be defined generally and should work for any number of arguments) such as:

Add

Sub

Sort the values

Max

Sort

Use the module in a program and apply the functions on two array variables (say a and b) to:

Add two arrays (and store it in c)

Subtract two arrays(and store it in d)

Find the minimum and maximum value of the resultant array (c or d)

Sort the resultant array(c or d)

# -\*- coding: utf-8 -\*-

"""

Created on Fri Aug 17 12:22:00 2018

@author: asakumar

"""

import mathematics

print("enter the first array")

one=[]

while 1:

a=input("enter the first array")

if a=="":

break

one.append(int(a))

two=[]

while 1:

a=input("enter the second array")

if a=="":

break

two.append(int(a))

third=mathematics.add(one,two)

print(third)

fourth=mathematics.sub(one,two)

print(fourth)

print(mathematics.sort(third))

print(mathematics.maximum(one))

mathematic.py

# -\*- coding: utf-8 -\*-

"""

Created on Fri Aug 17 12:45:45 2018

@author: asakumar

"""

def add(list1,list2):

list3=list1+list2

return list3

def sub(list1,list2):

list3=[]

for i in list1:

if i not in list2:

list3.append(i)

return list3

def sort(list1):

list2=[]

l=len(list1)

for i in range(0,l):

m=max(list1)

list1.remove(m)

list2.append(m)

list3=[]

for j in range(len(list2)-1,-1,-1):

list3.append(list2[j])

return list2

def maximum(list1):

a=max(list1)

return a

1. Try above programe with package.

Mathematics.py

# -\*- coding: utf-8 -\*-

"""

Created on Fri Aug 17 12:45:45 2018

@author: asakumar

"""

def add(list1,list2):

list3=list1+list2

return list3

def sub(list1,list2):

list3=[]

for i in list1:

if i not in list2:

list3.append(i)

return list3

def sort(list1):

list2=[]

l=len(list1)

for i in range(0,l):

m=max(list1)

list1.remove(m)

list2.append(m)

list3=[]

for j in range(len(list2)-1,-1,-1):

list3.append(list2[j])

return list2

def maximum(list1):

a=max(list1)

return a

# -\*- coding: utf-8 -\*-

"""

Created on Fri Aug 17 14:55:23 2018

@author: asakumar

"""

from simple\_package import mathematics

print("enter the first array")

one=[]

while 1:

a=input("enter the first array")

if a=="":

break

one.append(int(a))

two=[]

while 1:

a=input("enter the second array")

if a=="":

break

two.append(int(a))

third=mathematics.add(one,two)

print(third)

fourth=mathematics.sub(one,two)

print(fourth)

print(mathematics.sort(third))

print(mathematics.maximum(one))

1. Create a Date class, which represents the Date with its attributes. Write a UseDate class, which makes use of the Date class to instantiate, and call methods on the object.
2. WAP to read data from one file and writes in second file.

# -\*- coding: utf-8 -\*-

"""

Created on Fri Aug 17 15:11:05 2018

@author: asakumar

"""

file1=open("mathematics.py","r")

file2=open("test.py", "w")

file1.seek(0)

cont=file1.read()

amount=file2.write(cont)

print(amount)

file1.close()

file2.close()

1. WAP which will display diffrenent function of math and numpy library.

# -\*- coding: utf-8 -\*-

"""

Created on Fri Aug 17 15:19:21 2018

@author: asakumar

"""

import math

import numpy as np

print(int(math.sqrt(4)))

print(np.zeros((2,2)))