Q1.

Output:

The user has entered this value: 500

Describe execution of output:

Inside the input(), the text in between the quotations asks the user to input an integer. The input() function allows the user to enter the text for the prompt. Once the user enters that text, then it will be stored as a variable called anIntValue. Next, inside the print function, the text in between the quotations, followed by anIntValue will be outputted to the console.

Q2.

Correct input:

x = 10.5

y = 5

print("Data type of x: ",type(x),'\n')

print("Data type of y: ",type(y),'\n')

Output:

Data type of x:  <class 'float'>

Data type of y:  <class 'int'>

Describe execution of output:

10.5 is assigned to x, 5 is assigned to y. Next there are 2 print functions, the first print function will print the text in between the quotations, followed by the type() with x inside the parentheses, which will output the data type of the x variable. After that the type(x), the ‘\n’ function is implemented to skip the python cursor in the output to the next line after everything inside the first print function is printed. Then the second print function will print the text in between the quotations, followed by the type() with y inside the parentheses, which will output the data type of the y  variable. After that the type(y), the ‘\n’ function is implemented to skip the python cursor in the output to the next line after everything inside the second print function is printed.

Q3.

Correct input:

aDaystring="6/1/2021"

aList=aDaystring.split('/')

print(aList)

Output:

['6', '1', '2021']

Describe execution of output:

A string is assigned the variable aDaystring, then is aDaystring followed by the split(). Inside the split(), it  contains a set of quotations with a ‘/’ inside of them. This will split the string into a list of separate strings, and the string will be separated by the ‘/’ in aDaystring, then it will be stored into a variable called, aList. Lastly, aList is outputted using the print function.

Q4.

Correct input:

list(range(1,21))

Output:

[1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20]

Describe execution of output:

The list function is used to create a list. Inside the list is the range function that contains a 1, which is the start parameter, and a 21, which is the stop parameter. This will output a list that ascends by a value of 1 starting from 1 and ending at 21, but the value 21 will not be included in the list.

Q5.

Correct input:

list(range(0,-20,-3))

Output:

 [0, -3, -6, -9, -12, -15, -18]

Describe execution of output:

The list function is used to create a list.Inside the list inside the list is the range function that contains a 0, which is the start parameter, a -20, which is the stop parameter, and a -3, which is the step parameter. This will output a list that descends by a value of -3. Starting from 0 and ending at -20, but the value -20 will not be included in the list.

Q6:

Correct input:

import pandas as pd

aList = [5,10,33,14,245]

df = pd.DataFrame(aList)

print(df)

Output:

      0

0    5

1   10

2   33

3   14

4  245

Describe execution of output:

Pandas library is imported. The variable aList is assigned a list. pd.DataFrame with aList inside the parentheses will convert aList into a dataframe and then stored as a variable called df. Lastly, df is outputted using the print function.

Q7.

Correct input:

import pandas as pd

aDict= {"Name":["Sally", "Joe", "Jose", "Susan", "Saanvi"], 'Age':[20,30,40, 25,23], 'Time':[2.0,2.2,2.5,2.55,3]}

df=pd.DataFrame(aDict,index=['1st Place','2nd Place','3rd Place','4th Place', '5th Place'])

print(df)

Output:

                Name  Age  Time

1st Place   Sally   20  2.00

2nd Place     Joe   30  2.20

3rd Place    Jose   40  2.50

4th Place   Susan   25  2.55

5th Place  Saanvi   23  3.00

Describe execution of output:

Pandas library is imported. A dictionary that consists of 3 elements, where the key in each element is a string, while the values in each element are a list of values, this is then stored in the variable, aDict. Inside the pd.Dataframe, is aDict, followed by an index parameter that is equal to a list of strings, this will replace the default index with the list that the index parameter is equal to. This will create multiple columns and rows where the columns are the keys, the rows are the values, and the index is the list of strings that is equal to the index parameter. This will be stored in a variable called df. Lastly, df is outputted using the print function.

Q8.

Correct input:

import pandas as pd

aDictOfSeries = {'one':pd.Series([1,2,3,4,5], index=['z','y', 'x','w','v']),

'two':pd.Series([1,2,5,10], index= ['z', 'y', 'w', 't'])}

df=pd.DataFrame(aDictOfSeries)

df['three']=pd.Series([1,20,30], index=['z', 'v','y'])

print(df)

df['four'] = df['one'] + df['three']

print('\n')

print(df)

Output:

  one   two  three

t  NaN  10.0    NaN

v  5.0   NaN   20.0

w  4.0   5.0    NaN

x  3.0   NaN    NaN

y  2.0   2.0   30.0

z  1.0   1.0    1.0

   one   two  three  four

t  NaN  10.0    NaN   NaN

v  5.0   NaN   20.0  25.0

w  4.0   5.0    NaN   NaN

x  3.0   NaN    NaN   NaN

y  2.0   2.0   30.0  32.0

z  1.0   1.0    1.0   2.0

Describe execution of output :

Pandas library is imported. A dictionary containing two elements where the key is a string, and the value is a series using the pd.series () function, which is followed by the index parameter that is equal to a list of characters. This will be stored in a variable called a aDictofSeries. Next, aDictofSeries is converted into a dataframe by using pd.Dataframe(), where the keys are the columns and the rows are the values,  and this is assigned to df. Df is printed using the print function. After that, a new column is created called ‘four’. This is implemented by concatenating a column called ‘one’ and a column called ‘three’ and assigning it to a variable called df[‘four’].

Then the python cursor in the output skips a line by using the print function that contains, ‘\n’ inside it. Lastly, df is outputted using the print function, this will contain the new column ‘four’ and its values in the dataframe of df.

Q9.

Correct input:

import numpy as np

x= np.arange(15).reshape((3,5))

x.sum(axis=0)

Output:

array([15, 18, 21, 24, 27])

Describe execution of output:

The numpy library is imported. Then the np.arange function with a 15 inside the function, followed by the reshape function that contains a 3 and a 5. This will create a 3x5 matrix that contains the values 0 to 14 in ascending order, this will be stored in x. Lastly, the x.sum function with the axis parameter equalling 0) will output the sum of each column in the matrix and display it as an array.

Q10.

Output:

TypeError: 'tuple' object does not support item assignment

Describe execution of output:

A tuple is assigned aTuple, then the string ‘Pearson’ replaces the 2nd position of the index in aTuple, however this cannot happen because tuples are immutable.

Q11.

Correct input:

sampl\_string= "It's a Wonderful Life."

print (sampl\_string[2:-4])

Output:

's a Wonderful L

Describe execution of output: A string is assigned to a variable called sampl\_string. Then inside the print function is sampl\_string followed by a pair of brackets that contain a 2, a colon and a -4. This means that characters starting from the position 2 of the index of sampl\_string to the 4th to last character in sampl\_string will be outputted.

Q12.

Hello and welcome to my interactive tutorial.

Thank you very much Drew, you will be contacted at DrewMurray@my.unt.edu.

Welcome to the portal Drew

Successful! Welcome back Drew