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STATIC TO DYNAMIC WORLD

(PYTHON BASICS)

by-PARADOX ALPHA COMMUNITY

in colab with GROW IND

ASSIGNMENT-1

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que.1- You are an employer in a company which have a web application for which you have to develop a calculator. Write a program to design a calculator in which you have to give some scientific function like comparing two numbers and find the smaller and greater one as well.

Ans-

Code :

```
num1=float(input("enter 1st no="))
```

```
num2=float(input("enter 2st no="))
```

```
def add(num1,num2):
```

```
    return num1+num2
```

```
def sub(num1,num2):
```

```
    return num1-num2
```

```
def mul(num1,num2):
```

```
    return num1*num2
```

```
def div(num1,num2):
```

```
    return num1/num2
```

```
def mod(num1,num2):
```

```

    return num1%num2
def exponent(num1,num2):
    return num1**num2
def greaterthan(num1,num2):
    return num1>num2
def lessthan(num1,num2):
    return num1<num2

print("Select operation : \n" \
      "1. add\n" \
      "2. sub\n" \
      "3. mul\n" \
      "4. div\n" \
      "5. mod\n" \
      "6. exponent\n" \
      "7. greaterthan\n" \
      "8. lessthan\n" )

operation=int(input("select the operation that needs to be perform from 1 to :8"))

if operation ==1:
    print("addition of two numbers is" ,add(num1,num2))
elif operation ==2:
    print("subtraction of two numbers is" ,sub(num1,num2))
elif operation ==3:
    print("multiplication of two numbers is" ,mul(num1,num2))
elif operation ==4:
    print("division of two numbers is" ,div(num1,num2))

```

```
elif operation ==5:
    print("modulas of two numbers is" ,mod(num1,num2))
elif operation ==6:
    print("exponential of two numbers is" ,exp(num1,num2))
elif operation ==7:
    print(num1, ">", num2, greaterthan(num1,num2))
elif operation ==8:
    print(num1, "<", num2, lessthan(num1,num2))
else:
    print("invalid input")
#To find the greater number
if num1>=num2:
    greaternum=num1
else:
    greaternum=num2
print("Largest number is =",greaternum)
```

OUTPUT :

enter 1st no=9

enter 2st no=8

Select operation :

1. add
2. sub
3. mul
4. div
5. mod
6. exponent
7. greaterthan

8. lessthan

select the operation that needs to be perform from 1 to :87

9.0 > 8.0 True

Largest number is = 9.0

>>>

que.2- One girl named as Chandni, have to write a paragraph but by mistake she wrote some letters in upper case and some in lower case. Now she wants to arrange them in a grammatical manner as capital letter after every specific symbol like comma, full stop, etc. and rest in lower case. Write a program to help her out.

Ans-

Code :

Str=" artificial intelligence(AI) is revolutionizing entire industries, changing the way companies across sectors leverage data to make decisions."

print(my_str.capitalize())

Output :

Artificial intelligence (ai) is revolutionizing entire industries, changing the way companies across sectors leverage data to make decisions.

>

que.3- You are an employer in a company, HR gives you a task to mail a document. You want to find one word and also count how many times it came in document. {HINT-assume the data as a paragraph of your choice.}

Ans-

Code :

my_mail='My name is Kranti Patil and I am a software engineer. I am reaching out to you to communicate my interest in the AI and machine learning. I am confident that my qualifications and experiences are a great match for this position. Specifically, I have completed the certified coarse. Attached to this email for your

review are my resume and marksheets. My name and contact information are below for your convenience. Thank you in advance for your consideration. I look forward to hearing from you. Sincerely'

```
print(my_mail.count('am'))
```

Output :

5

que.4-There is a girl wants to write autobiography of her favorite player. She writes a paragraph for that but missed some words. Now help her to add those words. {HINT-use format of string function and data(autobiography)of your choice.}

Ans-

Code :

```
autobiography= "No one is born hating {} person because of the {} of his skin, or his background, or his {}. People must learn to hate, and if they can learn to {}, they can be taught to {}, for love comes more naturally to the human heart than its opposite."
```

```
print(autobiography.format("another" , "color" , "religion" , "hate" , "love"))
```

Output :

No one is born hating another person because of the color of his skin, or his background, or his religion. People must learn to hate, and if they can learn to hate, they can be taught to love, for love comes more naturally to the human heart than its opposite.

que.5- Explain standard data types in detail with example.

Ans –

Data Type may be defined as a classification that specifies which type of value a variable has, and what type of mathematical, relational, or logical operations can be applied to it without causing an error.

Python has the following standard data types :

1. **None-**

When we have a variable and it is not assigned with any value it is none.

2. **Numeric-**

A numeric value is any representation of data which has a numeric value. Python identifies following types of numbers

a. **Integer-** This data type holds positive or negative whole numbers of non-limited length

Ex-

```
>>>a=6
```

```
>>>type(a)
```

```
<class 'int'>
```

```
>>>12+22 #integer addition
```

```
34
```

b. **Float-** This data type holds floating precision numbers and it's accurate upto 15 decimal places.

Ex-

```
>>>a=46.6
```

```
>>>type(a)
```

```
<class 'float'>
```

```
>>>2.2+3.1 #float addition
```

```
5.3
```

c. Complex- Complex data types, also known as complex numbers are of the form $a + bJ$, where a and b are floats and J (or j) represents the square root of -1 (which is an imaginary number). The real part of the number is a , and the imaginary part is b .

Ex-

```
>>>a,b=2,5
```

```
>>>c=complex(a,b)
```

```
>>>c
```

```
(2+5j)
```

```
>>>type(c)
```

```
<class 'complex'>
```

d. Boolean- Data with one of two built-in values True and False.

Ex-

```
>>>a,b=45,89
```

```
>>>c=a>b
```

```
>>>c
```

```
False
```

3.Sequence

A sequence is an ordered collection of similar or different data types. Python supports Unicode characters. Generally, strings are represented by either single or double quotes. Again Sequence data types are of different types.

a. List – It is the collection of different values in which elements can be of same or different data types. Formally list is an ordered sequence of some data written using square brackets []

Ex –

```
>>>P=[25,36,48,78,56]
```

```
>>>type(P)
```

```
<class 'list'>
```

b. Tuple – It is similar to list but the only difference is tuple is immutable i.e. it can not changed the values once it is assigned. Data in a tuple is written using parenthesis ()

Ex –

```
>>>Q=(5,8,9,7,6,3,4)
```

```
>>>type(Q)
```

```
<class 'tuple'>
```

c. Set – It is also similar to list but it doesn't follow the sequence and also it doesn't take the duplicate values. Sets doesn't support indexing. The sets are represented in a curly brackets { }

Ex –

```
>>>R={33,5,6,7,55.67}
```

```
>>>type(R)
```

```
<class 'set'>
```

d. String - Strings are sequences of character data. The string type in Python is called str. String literals may be delimited using either single or double quotes. All the characters between the opening delimiter and matching closing delimiter are part of the string

Ex –

```
>>>S="Kranti"
```

```
>>>type(S)
```


<class 'string'>

4.Dictionary

Python dictionaries are known as mappings. Mappings may also be described as collections of other objects. When we have huge amount of data and we want to fetch it fast, we assign every value with its key. Here every key should be unique. Dictionaries are represented in curly brackets { }

Ex –

```
>>>Z={'navin':'samsung','vineet':'Iphone'}
```

```
>>>Z.keys()
```

```
Dict_keys(['navin','vineet'])
```

```
>>>Z.values()
```

```
Dict_values(['samsung','Iphone'])
```

```
>>>Z['vineet']
```

```
'Iphone'
```