

~~1. Object oriented programming~~

Python



LTCE

Dept - I

Implementation program using diff datatypes.

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Subject - Python.

marks - ~~89/100~~

Sign - ~~13/02/23~~
~~92/02/23~~

Write a python program to calculate the length of strings.

Code:

```
string = input("Enter a string: ")  
length = len(string)  
print ("The length of the string is : ", length)
```

output :-

Enter a string : Hello, world!

The length of the string is : 13.

Write a python program to count numbers of characters in string given by user.

String = input("Enter a string:")

char_count = {}

for char in my_string:

if char in char_count:

char_count[char] += 1

else:

char_count[char] = 1

print("Character counts are:").

for char, count in char_count.items():

print(char, count)

output!

Enter a string! Hello, world!

character counts

H 1

e 1

l 1

L 2

O 1

w 1

O 2

r 1

L 3

d 1

! 1

o 1

(c) write a python program to sum all the item in a list.

Code:-

```
my_list = input("Enter a list of numbers  
seperated by spaces: ")
```

```
my_list = my_list.split()
```

```
my_list = [int(num) for num in my_list]
```

```
total = 0 + sum(my_list)
```

```
print("The sum of the numbers in the list  
is : ", total).
```

output

Enter a list of numbers by spaces:

1 2 3 4 5

The sum of the numbers in the list

is 15



write a python program to get the largest number from the list given by user

code :-

```
my_list = input("Enter a list of numbers separated by spaces : ")
```

```
my_list = my_list.split()
```

```
my_list = [int(num) for num in my_list]
```

```
largest = max(my_list)
```

```
print("The largest number in the list is : "  
      , largest).
```

Output :-

Enter a list of numbers separated by
Space :

1 2 3 4 5 10 17.

The largest number in the list is:

17.

write a python program to creat tuple
code :-

my_tuple = (1, 2, 3, Vinayak, Suraj)
print(my_tuple)

write a python program to creat a
empty set
code :-

my_set = set()
print(my_set)

(E) output :-

(1, α , 3, Vinayak, Swraj).

(F) output :-

Mathematical induction
1. If $n = 1$,
L.H.S. = $1^2 + 2^2 + \dots + n^2$
= 1^2
= 1
R.H.S. = $n(n+1)(2n+1)/6$
= $1(1+1)(2(1)+1)/6$
= $1(2)(3)/6$
= 1
∴ L.H.S. = R.H.S.
Hence, the result is true for $n = 1$.
2. Assume that the result is true for $n = k$.
i.e., $1^2 + 2^2 + \dots + k^2 = k(k+1)(2k+1)/6$
Now, we have to prove that the result is true for $n = k+1$.
i.e., $1^2 + 2^2 + \dots + k^2 + (k+1)^2 = (k+1)(k+2)(2k+3)/6$
L.H.S. = $1^2 + 2^2 + \dots + k^2 + (k+1)^2$
= $k(k+1)(2k+1)/6 + (k+1)^2$
= $(k+1)[k(2k+1)/6 + (k+1)]$
= $(k+1)[(2k^2+k)/6 + (k+1)]$
= $(k+1)[(2k^2+6k+6)/6]$
= $(k+1)(k+2)(2k+3)/6$
= R.H.S.
∴ L.H.S. = R.H.S.
Hence, the result is true for $n = k+1$.
By the principle of mathematical induction, the result is true for all positive integers n .



(01)

write a python program to add members in a set.

Code :-

my_set = set()

while True:

 member = input("Enter a member to add
 to the set (or 'done' to finish):")

 if member == 'done':

 break

 my_set.add(member)

print("The final set is:", my_set).

output:-

Enter a member to add to the set : Vinayak
Enter a member to add to the set : Luvaj
Enter a member to add to the set : Priyanshu
Enter a member to add to the set : Aditya

the final set is : { 'Vinayak', 'Luvaj',
'Priyanshu',
'Aditya' } .



(H) write a python program to create an array of 5 integers & display the array items

import numpy

my_array = numpy.array([int(i) for i in input().split()])

print(my_array[0])
print(my_array[1])
print(my_array[2])
print(my_array[3])
print(my_array[4])

Chlorophyll

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write a program in python to sort dictionary by values.

Code :-

```
my_dict = {'a': 3, 'b': 1, 'c': 0, 'd': 4}
```

```
Sorted_dict = dict(sorted(my_dict.items(), key=lambda item: item[1]))
```

print(Sorted_dict)

multiple
is

{M-i-c-e-l-d-i-g
w-i-d-i-f}



(T) WAP - To add key to a dictionary

Code:-

```
my_dict = {}
```

```
while True:
    key = input("Enter a key to add to the
    dictionary or finish: ")
```

```
if key == 'done':
    break
```

```
value = input("Enter the corresponding
    value: ")
my_dict[key] = value
```

print ("The final dict is : ", my_dict).

Output:

After adding to the dict {
name : "John",
height : 180}

Enter the corresponding value : Alice
The final dict is : {name : "John",
height : 180,
name : "Alice",
height : 180}



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WAP to creat a tuple with no. &
print one item.

Code :-

my_tuple = (1, 2, 3, 4, 5).

print ("Third item in tuple!",
my_tuple[2])

Output :-
Third item in tuple : 3

WAP To append a new item in array
of the array.

Code :-

```
my_array = [1, 2, 3, 4, 5]
my_array.append(6)
print("Update wrong", my_array)
```



Output :-

Updated array : [1, 2, 3, 4, 5, 6]

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