

1. What is the output of the following code?

```
nums = set([1,1,2,3,3,3,4,4])
print(len(nums))
```

Answer : 4

2. What will be the output? d = {"john":40, "peter":45} print(list(d.keys()))

Answer : ['john', 'peter']

3. A website requires a user to input username and password to register. Write a program to check the validity of password given by user. Following are the criteria for checking password:

- a) At least 1 letter between [a-z]
- b) At least 1 number between [0-9]
- c) At least 1 letter between [A-Z]
- d) At least 1 character from [\$#@]
- e) Minimum length of transaction password: 6
- f) Maximum length of transaction password: 12

Answer:

```
import re

def pwdvalidator(string password):
    if len(password) < 6 or len(password)>12
        print("Password length out of range")
        return false
    if not re.search("[A-Z]",password)
        print("Not contain A-Z")
        return false;
    if not re.search("[0-9]",password)
        print("Not contain 0-9")
        return false;
    if not re.search("[$#@]",password)
        print("Not contain $#@")
        return false;
    return true

pwsd = input("Enter password:")
if pwdvalidator(pwsd):
    print("Valid password")
else:
    print("In-Valid password")

input("")
```

4. Write a for loop that prints all elements of a list and their position in the list.

```
a = [4,7,3,2,5,9]
```

Answer:

```
a = [4,7,3,2,5,9]
```

```
for i in a:
```

```

print("Value:", i)
print("Position:", a.index(i))

input("")

```

5. Please write a program which accepts a string from console and print the characters that have even indexes.

Example: If the following string is given as input to the program: H1e2l3l4o5w6o7r8l9d
Then, the output of the program should be: Helloworld

Answer:

```

def getcharacters-only(inputParam):
    return "".join([char for char in input_string if char.isalpha()])

inputval = input("Enter")
getcharacters-only(inputval)
input("")

```

6. Please write a program which accepts a string from console and print it in reverse order.

Example: If the following string is given as input to the program: **rise to vote sir**
Then, the output of the program should be: **ris etov ot esir**

Answer:

```

original_string = "Hello, World!"
reversed_string = original_string[::-1]
print(reversed_string)

```

7. Please write a program which count and print the numbers of each character in a string input by console.

Example: If the following string is given as input to the program: **abcdefgabc**
Then, the output of the program should be:

```

a,2
c,2
b,2
e,1
d,1
g,1
f,1

```

Answer:

```

def get-char-and-count(input):
    char-count={}
    for char in input:
        if char in char-count:
            char-count[char] +=1
        else:
            char-count[char] =1
    return char-count

valuetoverify = input("Enter string")

```

```
charcount = get-char-and-count(valuetoverify)
```

```
for char,count in charcount.items():  
    print("Char:{char},Count:{count}")
```

8. With two given lists [1,3,6,78,35,55] and [12,24,35,24,88,120,155], write a program to make a list whose elements are intersection of the above given lists.

Answer : intersection = [value for value in list1 if value in list2]

9. With a given list [12,24,35,24,88,120,155,88,120,155], write a program to print this list after removing all duplicate values with original order reserved.

Answer:

```
def remove-duplicate(input):  
    valueset =set()  
    valuelist=[]  
    for item in input:  
        if item not in valueset:  
            valuelist.append(item);  
            valueset.Add(item)  
  
    return valuelist
```

```
valuesto-compare = input("Enter values")
```

```
nonduplicate-values = remove-duplicate(valuesto-compare)
```

```
for char in nonduplicate-values  
    print("Char:{char}")
```

10. By using list comprehension, please write a program to print the list after removing the value 24 in [12,24,35,24,88,120,155].

Answer: 24removedlist= [value for value in list1 if value in list2]

11. By using list comprehension, please write a program to print the list after removing the 0th,4th,5th numbers in [12,24,35,70,88,120,155].

Answer: filtered_list = [item for item in original_list if item != 24]

12. . By using list comprehension, please write a program to print the list after removing delete numbers which are divisible by 5 and 7 in [12,24,35,70,88,120,155].

Answer : filtered_list = [item for item in original_list if not (item % 5 == 0 and item % 7 == 0)]

13. Please write a program to randomly generate a list with 5 numbers, which are divisible by 5 and 7 , between 1 and 1000 inclusive.

Answer:

```
import random  
def random_numbers(count, lower_bound, upper_bound):  
    divisible_numbers = [num for num in range(lower_bound, upper_bound + 1) if num % 5 ==  
0 and num % 7 == 0]  
    return random.sample(divisible_numbers, count)  
  
result = random_numbers(5, 1, 1000)  
print(result)
```

14. Write a program to compute $1/2+2/3+3/4+\dots+n/n+1$ with a given n input by console ($n>0$).

Example: If the following n is given as input to the program: 5

Then, the output of the program should be: 3.55

Answer:

```
def n-by-nplus1(n):  
    for i in range(1,n+1):  
        result = i/i+1
```

```
  
    result = n-by-nplus1(4)  
    print(result)
```

15.