Assignment

1. Smith wishes to register in a ticket booking website for booking bus tickets. For authenticate the registration, he needs to provide user-id and password. There are some built-in rules for checking the validity of the passwords entered by the users. Following are the rules for checking the validity of a password:

i i. At least 1 alphabet
ii ii. At least 1 digit between [0-9]
iii iii. At least 1 character from [@&]
iv iv. Minimum length of transaction password: 5
v v. Maximum length of transaction password: 10

Solution

```
import re
p= input("Input your password")
x = True
while x:
    if (len(p)<5 or len(p)>10):
        break
    elif not re.search("[a-z]",p):
        break
    elif not re.search("[0-9]",p):
        break
    elif not re.search("[A-Z]",p):
        break
    elif not re.search("[@&]",p):
        break
    elif re.search("\s",p):
        break
    else:
        print("Valid Password")
        x=False
        break

if x:
    print("Not a Valid Password")
```

2. Write a program for printing all elements of a list and their indexes in the list. Take the list as a user input.

Solution

```
# initializing lists
test_list = [9, 4, 5, 8, 10, 14]
index_list = [1, 3, 4]

# printing original lists
print ("Original list : " + str(test_list))
print ("Original index list : " + str(index_list))

# using list comprehension to
# elements from list
res_list = [test_list[i] for i in index_list]

# printing result
print ("Resultant list : " + str(res_list))
```

3. Write a program which accepts a string from the console and print the characters that have even indexes if the character is an alphabet. Concatenate the characters and print.
Example: If the following string is given as input to the program:
Ed12ur3ka1Python12
Then, the output of the program should be:
EuaPto

Solution

```
from string import digits


inputchars = input()

remove_digits = str.maketrans('', '', digits)

res = inputchars.translate(remove_digits)

print("Result:",res)

if res:
        string1 = ""

        for i in res:
```

```
        if res.index(i)%2 == 0:
            string1 += str(i)


print('--------------------')
print("You Entered:", res)
print("Result:")
print(string1)
```

4. 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:
welcome to edureka
Then, the output of the program should be:
akerude ot emoclew

Solution

```
str1= input()
str1 =  str1[::-1]
print(str1)
```

5. Please write a program which counts and prints the numbers of each character in a string input by the 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

Solution

```
string=input()
newstr=list(string)
newlist=[]
for j in newstr:
    if j not in newlist:
        newlist.append(j)
        count=0
        for i in range(len(newstr)):
            if j==newstr[i]:
                count+=1
        print("{},{}".format(j,count))
```

6. Given: Lists [1,5,10,12,34,13] and [4,7,8,10,5,13,24].
With the above give lists, write a program to create a new list whose elements are intersection of the above given lists.

Solution

```
def intersection(lst1, lst2):
    lst3 = [value for value in lst1 if value in lst2]
```

```
    return lst3


# Driver Code
lst1 = [1,5,10,12,34,13]
lst2 = [4,7,8,10,5,13,24]
print(intersection(lst1, lst2))
```

8. By using list comprehension, please write a program to print the list after removing the 1st,3rd ,5th numbers in [12,24,35,70,88,120,155].

Solution

```
def remove(list1, pos):
    newlist = []
    # traverse in the list
    for x in range(len(list1)):
        # if index not equal to pos
        if x != pos:
            newlist.append(list1[x])
    print(*newlist)
# driver code
list1 = [12,24,35,70,88,120,155]
pos =1
remove(list1, pos)
```

9. Please write a program to randomly generate a list with 6 numbers, which are divisible by 5 and 7, between 1 and 1500 inclusive.

Solution

```
mylist = []
for i in range(1,1500):
        if ((i%7==0) and (i%5==0)):
                mylist.append(i)
print (mylist[:6])
```

10. Write a program to compute 1/2+2/3+3/4+...+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

Solution

```
# Function to find the sum of series

def printSeriesSum(N) :

   sum = 0;

   for i in range(1, N + 1) :

         sum += (i * 1.0) / (i + 1.0);

     print(sum);


# Driver Code

if __name__ == "__main__" :

   N = 5;

   printSeriesSum(N);
```