1. Write a program that asks a user for a username and password. If password is “cdac” and does not contain username print “login successful” otherwise “login failure”

```
s1= input("Enter username :")
s2= input("Enter password : ")
if (s2=="cdac" and s1 not in s2):
    print("login successful")
else:
    print("login failure")
```

```
 Enter username :nikita
 Enter password : cdacnikita
 login failure
```

2. Write a program to input 2 strings. If string1 is contained in string2 ,create a third string with the first four characters of string2 added with word “cdac”

```
s1= input("Enter string 1 : ")
s2= input("Enter string 2 : ")
s3="cdac"
if s1 in s2:
  s4=s1+s2[0:4]+s3
  print(s4)
```

```
    Enter string 1 : hello
    Enter string 2 : everyonehello
    helloevercdac
```

3. Write a program that inputs a string that contains a decimal number and prints out the decimal part of the number(Do not convert the string to number)

```
s1= input("Enter a decimal number : ")
output=list(s1.partition("."))
print("The decimal part of number",s1," is ",output[2])
```

```
    Enter a decimal number : 11.25
    The decimal part of number 11.25  is  25
```

4. Write a program that takes a string with multiple words and then capitalizes the first letter of each word and forms a new string out of it

```
s1= input("Enter a sentence: ")
output=s1.title()
output
```

```
    Enter a sentence: hello everyone welcome to the world of python
    'Hello Everyone Welcome To The World Of Python'
```

5. Write a program that reads a string and prints a string that capitalizes every other letter in the string (eg: python becomes pYtHoN)

```
s1= input("Enter a sentence: ")
result=""
for i in range(0,len(s1)):
  if i % 2 == 0:
        result += s1[i].lower()
  else:
        result += s1[i].upper()
print(result)
```

```
    Enter a sentence: hello everyone
    hElLo eVeRyOnE
```

6. Write a program that asks the user for a string and creates a new string that doubles each character of the original string(eg: cdac becomes ccddaacc)

```
s1= input("Enter a string: ")
s2=""
for char in s1:
  s2=s2+(char * 2)
print(s2)
```

```
Enter a string: cdac
ccddaacc
```

7. Write a program that inputs a line of text and prints its each word in a separate line along with its length

```
s1= input("Enter a sentence: ")
s2=s1.split()
for i in range(0,len(s2)):
  print("Word ",(i+1)," ",s2[i],"\t length is",len(s2[i]))
```

```
Enter a sentence: hello everyone welcome
Word  1   hello          length is 5
Word  2   everyone       length is 8
Word  3   welcome        length is 7
```

8. Write a program which takes one string and a character. The function should create a new string after deleting all the occurrences of the character from the string

```
s1= input("Enter a string: ")
c= input("Enter a char: ")
s2=""
for char in s1:
  if char==c:
    continue
  s2=s2+char
print(s2)
```

```
Enter a string: hello
Enter a char: l
heo
```

9. Write a program that reads a sentence and print the string with lowercase characters converted to uppercase and viceversa

```
s1= input("Enter a sentence: ")
print(s1.swapcase())
```

```
Enter a sentence: HELLO EVERYONE, WELCOME TO CDAC
hello everyone, welcome to cdac
```

10. Write a program that does the following: a. Prompt the user for a string b. Extract all the digits from the string c. If there are digits a. sum the collected digits together b. print out: the original string , the digits, the sum of the digits d. If there are no digits a. print the original string and a message “has no digits”

```
s1= input("Enter a string: ")
l1=[]
if s1.isalnum:
  for i in range(0,len(s1)):
    if s1[i].isdigit():
      l1.append(int(s1[i]))
  s=0
  s=sum(l1)
  print("Original String ",s1)
  print("Digits in string",l1)
  print("Sum of digits is ",s)
else:
  print(s1,"has no digits")
```

```
Enter a string: atul12arora34
Original String  atul12arora34
Digits in string [1, 2, 3, 4]
Sum of digits is  10
```

11. Extract two list slices out of a given list of numbers. Display and print the sum of elements of the first slice which contains every other element of the list between indexes 5 to 15. Program should also display the average of elements in the second list slice that contains every fourth element of the list.

```
l1=[1,2,3,4,5,10,11,12,13,14,15,20,21,22,15,17,15,22,19,20]
l2=l1[5:16:2]
print("slice 1:",l2)
sum1=0
sum1=sum(l2)
print("sum of element",sum1)
```

```
l3=l1[0::3]
print("slice 2:",l3)
sum2=0
sum2=sum(l3)
avg=0
avg=sum2/len(l3)
print(f"average of element",'%.2f' % avg)
```

```
slice 1: [10, 12, 14, 20, 22, 17]
sum of element 95
slice 2: [1, 4, 11, 14, 21, 17, 19]
average of element 12.43
```

12. Write a program that inputs a list, replicates it twice and then prints the sorted list both in ascending and descending order

```
l1=eval(input("Enter a list"))
print("Replication of list twice")
l2=l1 * 2
print(l2)
l3=sorted(l2)
print("Sorted Replicated list in ascending order")
print(l3)
l4=sorted(l2,reverse=True)
print("Sorted Replicated list in descending order")
print(l4)
```

```
Enter a list[10, 12, 14, 20, 22, 17]
Replication of list twice
[10, 12, 14, 20, 22, 17, 10, 12, 14, 20, 22, 17]
Sorted Replicated list in ascending order
[10, 10, 12, 12, 14, 14, 17, 17, 20, 20, 22, 22]
Sorted Replicated list in descending order
[22, 22, 20, 20, 17, 17, 14, 14, 12, 12, 10, 10]
```

13. Write a program to calculate the mean of a list of numbers

```
l1=eval(input("Enter a list"))
sum3=0
sum3=sum(l1)
avg2=0
avg2=sum3/len(l1)
print(f"Mean of element",'%.2f' % avg2)
```

```
Enter a list[10, 12, 14, 20, 22, 17]
Mean of element 15.83
```

14. Write a program to check if the max element of the list lies in the first half or the second half

```
l1=eval(input("Enter a list"))
max1=0
max1=max(l1)
for i in range(0,(len(l1)//2)):
  if max1 == l1[i]:
     print("max element ",max1," in first half of list")
else:
  print("max element ",max1," in second half of list")
```

```
Enter a list[11,22,33,55,44,9]
max element  55  in second half of list
```

15. Write a program to input 2 lists and display the maximum element from the elements of both the list, along with its index in the list

```
l1=eval(input("Enter a list1 "))
l2=eval(input("Enter a list2 "))
max1=max(l1)
max2=max(l2)
print("Maximum value of list1 is",max1," at index ",l1.index(max1))
print("Maximum value of list2 is",max2," at index ",l2.index(max2))
```

```
Enter a list1 [11,22,33,55,44,9]
Enter a list2 [11,22,33,55,44,9,99]
Maximum value of list1 is 55  at index  3
Maximum value of list2 is 99  at index  6
```

16. Given 2 lists, write a program that prints “overlapped” if they have at least one member in common otherwise “not overlapped”

```
l1=eval(input("Enter a list1 "))
l2=eval(input("Enter a list2 "))
flag=0
for x in l1:
  for y in l2:
    if x == y:
        flag=1
if flag==1:
  print("Overlapped")
else:
  print("Not Overlapped")
```

```
Enter a list1 [5,6,7,8]
Enter a list2 [1,2,3,4]
Not Overlapped
```

17. Write a program to input a list and 2 numbers m and n. Then create a list from those elements which are divisible by both m and n

```
l1=eval(input("Enter a list1 "))
m=int(input("Enter a number 1 "))
n=int(input("Enter a number 2 "))
l2=[]
for i in l1:
  if i%m==0 and i%n==0:
    l2.append(i)
print(l2)
```

```
Enter a list1 [10,20,3,5,30]
Enter a number 1 2
Enter a number 2 5
[10, 20, 30]
```

18.Write a python Program to demonstrate guess game

```
import random
while True :
  a=int(input("Enter a number between 1 to 10 "))
  r=random.randint(1,10)
  print("Random number between 1 to 10",r)
  if a==r:
    print("Game is over")
    break
```

```
Enter a number between 1 to 10 5
Random number between 1 to 10 4
Enter a number between 1 to 10 3
Random number between 1 to 10 2
Enter a number between 1 to 10 4
Random number between 1 to 10 1
Enter a number between 1 to 10 7
Random number between 1 to 10 10
Enter a number between 1 to 10 1
Random number between 1 to 10 7
Enter a number between 1 to 10 2
Random number between 1 to 10 8
Enter a number between 1 to 10 8
Random number between 1 to 10 2
Enter a number between 1 to 10 5
Random number between 1 to 10 10
Enter a number between 1 to 10 10
Random number between 1 to 10 9
Enter a number between 1 to 10 9
Random number between 1 to 10 10
Enter a number between 1 to 10 2
Random number between 1 to 10 9
Enter a number between 1 to 10 6
Random number between 1 to 10 10
Enter a number between 1 to 10 4
Random number between 1 to 10 7
Enter a number between 1 to 10 4
Random number between 1 to 10 1
Enter a number between 1 to 10 5
Random number between 1 to 10 5
Game is over
```

19. Write a program to print the multiplication table of a number read

```
a=int(input("Enter a number "))
for i in range(1,13):
  print(a," * ",i,"=",a*i)
```

```
Enter a number 6
6  *  1 = 6
6  *  2 = 12
6  *  3 = 18
6  *  4 = 24
6  *  5 = 30
6  *  6 = 36
6  *  7 = 42
6  *  8 = 48
6  *  9 = 54
6  *  10 = 60
6  *  11 = 66
6  *  12 = 72
```

20. Write a program to calculate and print the sums of even and odd integers of the first n natural numbers

```
n=int(input("Enter higher limit "))
sum_even=0
sum_odd=0
for i in range(1,n):
  if(i%2==0):
      sum_even = sum_even + i
  else:
      sum_odd = sum_odd + i
print("Sum of even natural number ",sum_even)
print("Sum of odd natural number ",sum_odd)
```

```
Enter higher limit 20
Sum of even natural number  90
Sum of odd natural number  100
```

21. Write a program to input a number and test whether it is prime or not

```
num = int(input("Enter a number: "))
if num > 1:
    for i in range(2, num//2):
        if (num % i) == 0:
            print(num, "is not a prime number")
            break
    else:
        print(num, "is a prime number")
else:
    print(num, "is not a prime number")
```

```
Enter a number: 7
7 is a prime number
```

22. Write a program that prints the prime numbers from 15 through 25

```
for num in range(15,26):
  if num > 14:
      for i in range(2, num):
              if (num % i) == 0:
                  break
      else:
              print(num)
```

```
17
19
23
```

23. Write a program to print the first 20 elements of the Fibonacci series

```
n1, n2 = 0, 1
count = 0
print("Fibonacci sequence:")
while count < 20:
       print(n1)
       nth = n1 + n2
       n1 = n2
       n2 = nth
       count += 1
```

```
Fibonacci sequence:
0
1
1
2
3
5
8
13
21
34
55
89
144
233
377
610
987
1597
2584
4181
```

24. Write a program to reverse a number

```
n2 = int(input("Enter a number: "))
rnum = 0

while n2 != 0:
    digit = n2 % 10
    rnum = rnum * 10 + digit
    n2 //= 10
print("Reversed Number: ",rnum)
```

```
Enter a number: 4321
Reversed Number:  1234
```

25. Write a program to generate divisors of a number

```
n3 = int(input("Enter a number: "))
divisors = []
for i in range(1, (n3+1)):
        if n3 % i == 0:
            divisors.append(i)
print(divisors)
```

```
Enter a number: 6
[1, 2, 3, 6]
```

26. Write a program to calculate the BMI of a person after inputting the weight in kgs and height in meters and then print the Nutritional Status as per the following table Nutritional Status BMI Underweight <18.5 Normal 18.5-24.9 Overweight 25-29.9 Obese >=30 BMI =weight / (height *height)

```
w = float(input("Enter weight in kgs: "))
h = float(input("Enter height in meters: "))
bmi= w/(h*h)
if (bmi < 18.5):
  print("Nutritional Status Underweight ")
elif(bmi >= 18.5 and bmi < 24.9):
  print("Nutritional Status Normal ")
elif(bmi >= 25 and bmi < 29.9):
  print("Nutritional Status Overweight ")
elif(bmi>=30):
  print("Nutritional Status Obese")
```

```
Enter weight in kgs: 55
Enter height in meters: 1.56
Nutritional Status Normal
```

28. Write a program to check whether a number is an Armstrong number or not.

```
n = int(input("Enter a number: "))
sum = 0
temp = n
while temp > 0:
    digit = temp % 10
    sum += digit ** 3
    temp //= 10
```

```
if n == sum:
    print(n, "is an Armstrong number")
else:
    print(n, "is not an Armstrong number")
```

```
Enter a number: 153
153 is an Armstrong number
```

29. Write a python program to demonstrate the common network connection errors and display its reasons, get the error code from the user.

```
n = int(input("Enter a error number: "))
if(n==10013):
           print("Permission denied. The socket is not allowed to access the network.")
elif(n==10048):
          print("Address already in use. Another socket is already using the same port.")
elif(n==10051):
           print("Network is unreachable. The remote host is not reachable from the local network.")
elif(n==10060):
          print( "Connection timed out. The connection attempt took too long or failed to establish a connection.")
```

```
Enter a error number: 10048
Address already in use. Another socket is already using the same port.
```

30. Write a program to take n (n > 20) as an input from the user. Print numbers from 11 to n. If the number is a multiple of 3 print “Multiple of 3”,if it is a multiple of 7 print “Multiple of 7”, if it is a multiple of both, print multiple of both 3 and 7

```
n = int(input("Enter a number greater than 20: "))
for c in range(11, n+1):
  if(c%7==0 and c%3==0) :
    print(c," is a multiple of 7 and 3")
  elif(c%7==0) :
    print(c," is a multiple of 7")
  elif(c%3==0):
    print(c," is a multiple of 3")
```

```
Enter a number greater than 20: 25
12  is a multiple of 3
14  is a multiple of 7
15  is a multiple of 3
18  is a multiple of 3
21  is a multiple of 7 and 3
24  is a multiple of 3
```