PYTHON ASSIGNMENT

**Q1)WRITE A PYTHON PROGAM TO ENTER A NUMBER AND PERFORM AS PER USERS CHOICE:**

**1)SUM OF A DIGIT**

**2)REVERSE OF A NUMBER**

**3)PALINDROME OR NOT**

**4)SUM OF EVEN AND PRODUCT OF ODD**

print("1)sum of digits \n2)sum of even digit and product of odd \n3) reverse of number \n4) Pallindrome")

ch=int(input("Enter the choice:"))

if (ch==1):

    n=int(input("Enter a number:"))

    tot=0

    while(n>0):

       dig=n%10

       tot=tot+dig

       n=n//10

    print("The total sum of digits is:",tot)

elif (ch==2):

    n=int(input("Enter a number:"))

    s=0

    prod=1

    while(n>0):

        dig=n%10

        n=n//10

        if (dig%2==0):

            s=s+dig

        elif (dig%2!=0):

            prod=prod\*dig

    print("The sum of even digits is",s)

    print("The product of odd digits is",prod)

elif (ch==3):

    n=int(input("Enter a number:"))

    r=0

    while(n>0):

       dig=n%10

       r=r\*10+dig

       n=n//10

    print("The reverse is:",r)

elif (ch==4):

    n=int(input("Enter a number:"))

    t=n

    r=0

    while(n>0):

       dig=n%10

       r=r\*10+dig

       n=n//10

    if (r==t):

        print(t,"is pallindrome")

    else:

        print(t,"is not pallindrome")

**Q2)WRITE A PYTHON PROGRAM TO REMOVE EMPTY STRING FROM THE LIST OF THE STRINGS.**

string=[]

removes=[]

range\_str=int(input("enter the range:"))

for i in range(range\_str):

    str=(input("enter a string:"))

    string.append(str)

print(string)

for j in range(range\_str):

    if(string[j]!=""):

        removes.append(string)

print(removes)

Q**3)WRITE A PYTHON PROGRAM TO REMOVE DUPLICATES FROM THE STRING.**

str1=[]

no\_duplicates=[]

b=int(input("enter the range for list1:"))

for i in range (b):

    z=input("Enter the elements:")

    str1.append(z)

print("original list:",str1)

for i in str1:

    if i not in no\_duplicates:

        no\_duplicates.append(i)

print("final list:",no\_duplicates)

**Q4)WRITE A PYTHON PROGRAM TO ROTATE ELEMENTS OF THE LIST.SO,THAT AT THE FIRST INDEX MOVE TO THE SECOND INDEX AND THE SECOND INDEX MOVE TO THE THIRD INDEX AND SO ON AND FINALLY THE LAST INDEX TO FIRST INDEX.**

a=[]

c=[]

b=int(input("enter the range for list1:"))

for i in range (b):

    z=input("Enter the elements:")

    a.append(z)

print("original list:",a)

for i in range(len(a)-1,len(a)):

    c.append(a[i])

for i in range (0,len(a)-1):

    c.append(a[i])

print("final list:",c)

**Q5)WRITE A PYTHON PROGRAM THAT INPUT TWO TUPLES AND CREATE THIRD TUPLES THAT CONTAINS ALL ELEMENTS OF FIRST TUPLE FOLLOWED BY THE SECOND TUPLE.**

first=[]

second=[]

third=[]

b1=int(input("enter the range:"))

for i in range(b1):

    d1=input("enter a number:")

    first.append(d1)

print(first)

b2=int(input("enter the range:"))

for j in range(b2):

    d2=input("enter a number:")

    second.append(d2)

print(second)

third=tuple(first)+tuple(second)

print(third)

**Q6)WRITE A PYTHON PROGRAM THAT READS A STRING AND DISPLAY THE LONGEST SUBSTRING OF THE GIVEN STRING HAVING JUST THE CONSONANT**.

string = input("Enter the string: ")

length = 0

w = ''

result=''

for word in string.split():

    if(len(word) > length):

            length = len(word)

            w = word

for i in w:

    if i not in ('a', 'e', 'i', 'o', 'u', 'A', 'E', 'I', 'O', 'U'):

        result += i

final=len(result)

print("Longest word is", w,"with consonants",final)

**Q7)WRITE A PYTHON PROGRAM THAT ENCRYPTED A MESSAGE BY ADDING A KEY VALUE TO EVERY CHARACTER.**

**FOR EXAMPLE:**

**KEY=3**

**THEN,ADD 3 TTO EVERY CHARACTER(ASCII)**

str=[]

st=" "

a=input("Enter a message:")

key=int(input("Enter the key value:"))

l=len(a)

for i in range (l):

    ch=ord(a[i])

    ch=ch+key

    str.append(chr(ch))

print("Message before encryption is\n",a)

print("Message after encryption is\n",st.join(str))

**Q8)WRITE A PROGRAM TO PRINT THE SUM OF SERIES :**

**1)x+x^2-x^3+x^4…………………..**

**2)-x+x^2/2!-x^3/3!..................**

**3)1+(1+2)+(1+2+3)…………………**

**1)**

x=int(input("Enter the value"))

a=int(input("Enter the number of terms"))

s1=0

s2=0

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

    if (i%2==0):

        s1=s1+(x\*\*i)

    else:

        s2=s2+((-x)\*\*i)

print("the sum of series is:",s1+s2)

2)

x=int(input("Enter the numerator value:"))

s=0

s1=0

z=0

j=0

f=1

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

    f=f\*i

    if(i%2==0):

        s=s+int((x\*\*i)/f)

    if (i%2!=0):

        s1=s1+int((-x\*\*i)/f)

z=s+s1

print("The sum is",1+z)

3)

n=int(input("enter the range"))

sum=0

for i in range(n):

    for j in range(n):

        if (j<=i):

            print((j),"+",(j+1),end="")

**Q9)WRITE A PROGRAM TO PRINT THE FOLLOWING PATTERN:**

**1)HOLLOW RECTANGLE STAR PATTERN**

**2)HOLLOW RECTANGLE OF \* WITH $ DIAGONAL**

**3)PYRAMID**

**1)**

rows = int(input("Enter rows:"))

cols = int(input("Enter Cols:"))

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

    for j in range(1,cols+1):

        if (i==1 or i == rows or j==1 or j == cols):

            print("\*", end=' ')

        else:

            print(" ", end=' ')

    print()

2)

n=int(input("Enter the rows:"))

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

        for j in range(1, n+1) :

            if (i == 1 or i == n or j == 1 or j == n or i == j or j == (n - i + 1)) :

                print("$", end = "")

            else :

                print("\*", end = "")

        print( )

3)

n=40

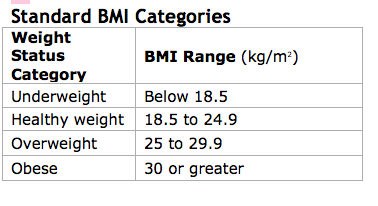
for i in range(1,11):

    print(' '\*n,end='')

    print('\* '\*(i))

    n=n-1

**Q10)WRITE A PYTHON PROGRAM TO CALCULATE BODY MASS INDEX OF A PERSON AFTER ENTERING THEIR WEIGHT IN KGS AND HEIGHT IN METERS AND PRINT THE NUTRITIONAL STATUS AS PER FOLLOWING TABLE:**



weight=int(input("Enter the weight in kg"))

height=float(input("Enter the height in meter"))

bmi=weight/(height\*\*height)

print("Nutritional value"'\n')

if (bmi<18.5):

    print("underweight")

elif (bmi>=18.5 and bmi<=24.9):

    print("normal")

elif (bmi>24.9 and bmi<=29.9):

    print("overweight")

elif (bmi>29.9):

    print("Obese")

**Q11)WRITE A PYTHON PROGRAM TO PARSE THE EMAIL ID AND TO FIND OUT FROM WHICH EMAIL SERVER IT WAS SENT.**

a=input("Enter an email id:")

email=a.split("@")

if (email[1]=='google.com'):

    print("The server is google")

elif (email[1]=='yahoo.com'):

    print("The server is yahoo")

elif (email[1]=='rediffmail.com'):

    print("The server is rediffmail")

elif (email[1]=='microsoft.com'):

    print("The server is microsoft")

elif (email[1]=='gmail.com'):

    print("The server is Gmail")

else:

    print("Sever error or server not found")

**Q12)WRITE A DICTIONARY WHOSE KEYS ARE MONTHS NAME AND KEY VALUES ARE NUMBER OF DAYS IN CORRESPONDING MONTHS.**

**I)ASK USER TO ENTER A MONTH NAME AND USE THE DICTIONARY TO TELL HOW MANY DIGITS ARE IN THAT MONTH.**

**II)PRINT ALL THE KEY VALUE PAIRS SORTED BY THE NUMBER OF DAYS IN EACH MONTH.**

x={}

print("how many months?:")

n=int(input())

for i in range(n):

    print("enter month names:",end="")

    k=input()

    print("enter number of days:",end="")

    days=input()

    x.update({k:days})

print("the dictionary is :",x)

print("enter months name:",end='')

name=input()

days=x.get(name,-1)

if(days==30 or days==31 or days==28 or days==29):

    print("days not valid")

else:

    print("{} made runs {}.".format(name,days))

#sorting

c1=sorted(days.values(), key = lambda t:t[1])

print(c1)

**13.Given a dictionary {'k1':'v1','k2':'v2','k3':'v3'}. Create a dictionary with the opposite mapping as {'v1':'k1','v2':'k2','v3':'k3'}.**

d={'k1':'v1','k2':'v2','k3':'v3'}

f={}

print("original",d)

for i in d:

    f[d[i]]=i

print("modified",f)

**Q14)WRITE A PYTHON PROGRAM TO REVERSE A NUMBER ENTERED BUT NOT CONSIDERING ZEROS IN THE NUMBER.**

**EXAMPLE:**

**27008**

**872**

n=int(input('enter a value'))

n1=n

r=0

while n1!=0:

    d=n1%10

    if d!=0:

        r=r\*10+d

    n1=n1//10

print(r)

**Q15)ENTER A LIST CONTAINING TUPLES AS ELEMENTS IN PAIRS AND SORT THE LIST BASED ON THE SECOND ELEMENT OF THE EACH TUPLE**

l1=eval(input('enter values as tuples'))

l=len(l1)

t=()

for i in range(l):

        a=l1[i]

        b=a[1]

        for j in range(l):

            c=l1[j]

            d=c[1]

            if d>b:

                t=l1[i]

                l1[i]=l1[j]

                l1[j]=t

print(l1)

**Q16)**

**WRITE A PROGRAM IN PYTHON TO ASK USER A NUMBER OF 3 OR MORE DIGITS AND SORT THE DIGITS IN ASCENDING ORDER.**

#number in ascending order

n=int(input("Enter the number : "))

l=list()

while n!=0:

    d=n%10

    l.append(d)

    n//=10

l1=list(range(len(l)))

temp=0

for i in range(len(l)):

    for j in range(len(l)-1):

        if l[j]>l[j+1]:

            temp=l[j]

            l[j]=l[j+1]

            l[j+1]=temp

for i in l:

    print(i,end="")

**Q17)WRITE A PROGRAM IN PYTHON TO ENTER A STRING AND REVERSE EACH WORD OF THE STRING.**

#reverse each words of the string

s=input("Enter the sentence :")

res=""

s1=""

for i in s:

    if i in "  !?":

        for j in range(len(s1)-1,-1,-1):

            res+=s1[j]

        s1=""

        res+=i

    else:

        s1+=i

print(res)

**Q18) . THE PERIODIC TABLE OF ELEMENTS WAS DEVELOP TO ORGANISE INFO ABOUT THE ELEMENTS. WRITE A USER FRIENDLY PROGRAM THAT LETS YOU ENTER INFORMATION ABOUT EACH ELEMENT IN THE PERIODIC TABLE .**

**ENTER ATLEAST 4 ELEMENTS IN EACH ROW MAKE SURE THAT YOU INCLUDE INFORMATION.:**

* **THE SYMBOL**
* **ATOMIC NUMBER**
* **ROW AND COLUMN.**
* **ADD ONE OTHER PROPERTY OF THE ELEMENT HAS METAL OR METALLOID OR NON-METAL OR RECENTLY DISCOVERED.**
* **PROVIDE A MENU OF OPTIONS FOR USERS TO SEE ALL THE INFORMATION THAT IS STORED ABOUT AN ELEMENT BY ENTERING THAT ELEMENTS SYMBOL. CHOOSE A PROPERTY AND LIST ALL ELEMENTS IN THE TABLE POSSESING THAT PROPERTY.**
* **DISPLAY ALL ELEMENTS SYMBOLS SORTED AS PER THE ATOMIC NUMBER.**
* **DISPLAY OR ALL ELEMENTS OF PARTICULAR ROW OR COLUMN ENTERED BY THE USER.**
* #Periodic Table
* l=[]
* dp={1: 'Metal', 3:'Metalloid', 2:'Non-Metal', 4: 'Recently Discovered'}
* r=int(input("No of Rows:"))
* c=int(input("No of Columns (>3):"))
* for i in range(r):#Entries
* print("\*\*Row {}\*\*".format(i+1))
* for j in range(c):
* d={}
* print("\*Element {}\*".format(j+1))
* d["symbol"]=input("Enter Symbol:")
* d['atomic No']=int(input("Atomic Number:"))
* d['row']=i+1
* d['col']=j+1
* print("Property")
* print("1.Metal\n2.Non-Metal\n3.Metalloid\n4.Recently Discovered")
* p=int(input("Choose Option:"))
* d['property']=dp[p]
* l.append(d)
* print()
* print("...Entries Done!...")
* for i in range(r\*c):
* for j in range(i+1,r\*c):#Sorting
* if [i]['atomic No']>[j]['atomicNo']:
* l[i],l[j]=l[j],l[i]
* while True:
* print()
* print("1.Info about an entered element\n2.Element having similar Property")
* print("3.Display elements with their atomic numbers (sorted)")
* print("Display elements by 4.Row or 5.Column\n6.Exit:")
* n=int(input("Choose any Option:"))
* if n==1:#InfoAboutAnElt
* s=input("Enter Element's Symbol")
* for i in l:
* if i['symbol']==s:
* print(i)
* break
* else:
* print("Element does not Exist!")
* elif n==2:#DisplayByProperty
* print("1.Metal\n2.Non-Metal\n3.Metalloid\n4.Recently Discovered")
* p=int(input("Choose Option:"))
* for i in l:
* if i['property']==dp[p]:
* print(i['symbol'])
* elif n==3:#DisplaySorted
* for i in l:
* print(i)
* elif n==4: #DisplayByRow
* s=int(input("Enter Row :"))
* for i in l:
* if i['row']==s:
* print(i['symbol']) #DisplayByColumn
* elif n==5:
* s=int(input("Enter Column :"))
* for i in l:
* if i['col']==s: print(i['symbol'])
* elif n==6:
* break
* else:
* print("Wrong Choice")