**KENDRIYA VIDYALAYA NOIDA, SHIFT –II**

**PRACTICAL FILE**

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**ACADEMIC YEAR: 2022-23**

**ROLL NO** **: 14**

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**CLASS : XI – ‘G’**

**SUBJECT : COMPUTER SCIENCE**

**SUB CODE : 083**

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**PGT (CS)**

**KV NOIDA SHIFT-II**

Practical list and solution

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**Software used: Visual Studio Code (Python 3.10)**

**Hardware used: Computer system.**

PRACTICAL-14

DATE:

AIM: Write a menu driven program in Python to print the given patterns (star, letters, number).

\* A 1

\*\*\* A B 22

\*\*\*\*\* A B C 333

A B C D 4444

Code:

def menu():

print("Pattern Printer!!")

print()

print("[1] Star Pattern")

print("[2] Abc Pattern")

print("[3] Number Pattern")

print("[0] Exit")

print()

#defining menu function

menu()

n=int(input("Choose any Pattern or Exit: "))

while n!=0:

if n==1:

for i in range(1,6,2):

print("\*"\*i)

print()

menu()

n=int(input("Choose any Pattern or Exit: "))

elif n==2:

for j in range(1,5):

for k in range(0,j):

print(chr(65+k),end="")

print()

print()

menu()

n=int(input("Choose any Pattern or Exit: "))

elif n==3:

for l in range(1,5):

for m in range(1,5-l):

print(" ",end=" ")

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

print(l,end=" ")

print()

print()

menu()

n=int(input("Choose any Pattern or Exit: "))

else:

print("Invalid choice!!",end="\n\n")

menu()

n=int(input("Choose any Pattern or Exit: "))

#putting all conditions

print("Thank You For Using Pattern Printer!")

#End of code

PRACTICAL-15

DATE:

AIM: Write a menu driven program in Python to print the Fibonacci series up to specified terms.

Code:

def menu():

print("Fibonacci Printer!!")

print()

print("[1]Choose number of terms")

print("[0]Exit")

#defining menu

menu()

print()

n=int(input("Enter 0 or 1: "))

while n!=0:

r=int(input("Enter the number of times to iterate:\t"))

num1=0

num2=1

num=0

if r>2:

print(num1,num2,end=" ")

for i in range(1,r-1):

num=num1+num2

print(num,end=" ")

num1=num2

num2=num

print()

elif r==2:

print(num1,num2)

else:

print(num1)

print()

menu()

print()

n=int(input("Enter 0 or 1: "))

#All conditions

print("Thank You For Using Fibonacci Printer!")

#End of code

PRACTICAL-16

DATE:

AIM: Write a menu driven program in Python to check whether the number is Armstrong, check whether the number is prime and check whether the number is palindrome

Code:

def menu():

print("Armstrong, Prime, Pallindrome Checker!!")

print()

print("[1] Check if Armstrong")

print("[2] Check if Prime")

print("[3] Check if Pallindrome")

print("[0] Exit")

print()

#Defing menu

menu()

k=int(input("Enter your choice: "))

while k!=0:

if k==1:

n=int(input("Enter the number to be checked: "))

sum=0

temp=n

nodig=len(str(temp))

while temp>0:

i=temp%10

sum+=(i\*\*nodig)

temp//=10

if sum==n:

print("The Number",n,"is ARMSTRONG!!")

else:

print("The Number",n,"is NOT ARMSTRONG!!")

print()

menu()

k=int(input("Enter your choice: "))

elif k==2:

n=int(input("Enter the number to be checked: "))

if n>1:

for i in range(2,int(n/2)+1):

if n%i==0:

print("The Number",n,"is NOT PRIME")

break

else:

print("The Number",n,"is PRIME")

else:

print("The Number",n,"is not prime")

print()

menu()

k=int(input("Enter your choice: "))

elif k==3:

n=int(input("Enter the number to be checked: "))

m=str(n)

rev=m[::-1]

if m==rev:

print("The Number",n,"is a PALLINDROME")

else:

print("The Number",n,"is NOT a PALLINDROME")

print()

menu()

k=int(input("Enter your choice: "))

else:

print("Invalid Choice!!")

print()

menu()

k=int(input("Enter your choice: "))

#All conditions

print("Thank You For Using APP Checker")

#End of Code

PRACTICAL-17

DATE:

AIM: Write a menu driven program in Python to check whether a character is an alphabet or not and check its case.

Code:

def menu():

print("Alphabet And Case Checker")

print()

print("[1] Check if in Alphabet and if alphabet check case")

print("[0] Exit")

print()

#Definig Menu

menu()

n=int(input("Enter your choice: "))

while n!=0:

if n==1:

print()

x=input("Enter the character: ")

if x.isalpha():

print("Yes",x,"is in the alphabet")

if x.islower():

print("It is in LOWERCASE!")

else:

print("It is in UPPERCASE!")

else:

print(x,"is not in the aplhabet")

print()

else:

print("Invalid Choice!!")

print()

menu()

n=int(input("Enter your choice: "))

#All Conditions

print("Thank You For Using Char Checker!")

#End of code

PRACTICAL-18

DATE:

AIM: Write a menu driven program in Python

1. To find length of a string
2. Copy a string
3. Concat two strings.
4. Compare two strings
5. Reverse a string.
6. Check if string is a palindrome

Code:

def menu():

print("String Stuff")

print()

print("[1] Find length of String")

print("[2] Copy a String")

print("[3] Concat two Strings")

print("[4] Compare two Strings")

print("[5] Reverse a String")

print("[6] Check if String is a Pallindrome")

print("[0] Exit")

print()

#Defining Menu

menu()

n=int(input("Enter your choice: "))

print()

while n!=0:

if n==1:

s=input("Enter the String: ")

print("The length of the String is: ",len(s))

print()

elif n==2:

t=input("Enter the String: ")

v=str(t)

print("The copy of the string",t,"is",v)

print()

elif n==3:

c1=input("Enter the First String: ")

c2=input("Enter the Second String: ")

print("The concat is: ",(c1+c2))

print()

elif n==4:

sen1=input("Enter the first strings: ")

sen2=input("Enter the second string: ")

if sen1==sen2:

print("The strings are EQUAL!")

else:

print("The strings are NOT EQUAL!")

print()

elif n==5:

l=input("Enter the String: ")

print("The reverse of",l,"is",(l[::-1]))

print()

elif n==6:

pal=input("Enter the String: ")

if pal==pal[::-1]:

print("The string is a PALLINDROME!!")

else:

print("The string is NOT a PALLINDROME")

print()

else:

print("Invalid Choice!!")

print()

menu()

n=int(input("Enter your choice: "))

#All Conditions

print("Thank You For Using String Stuff!!")

#End of Code

PRACTICAL-19

DATE:

AIM: Write a menu driven program in Python to count number of words, characters, vowels, digits and alphabets in a given string.

Code: def menu():

print()

print("TEXT STUFF")

print()

print("[1] Count number of words")

print("[2] Count number of characters")

print("[3] Count number of vowels")

print("[4] Count number of digits")

print("[5] Count number of alphabets")

print("[0] Exit")

print()

#Defining Menu

menu()

n=int(input("Enter your choice: "))

print()

while n!=0:

if n==1:

sen=input("Enter the string: ")

print()

print("The number of words in the string is: ",len(sen.split()))

elif n==2:

sen=input("Enter the string: ")

print()

countch=0

for ch in sen:

if ch!=" ":

countch+=1

print("The number of Characters in string is: ",countch)

elif n==3:

sen=input("Enter the string: ")

print()

vowels=["a","e","i","o","u"]

countvowel=0

for ch in sen:

if ch.lower() in vowels:

countvowel+=1

print("The number of Vowels in the string is: ",countvowel)

elif n==4:

sen=input("Enter the string: ")

print()

countdig=0

for ch in sen:

if ch.isdigit():

countdig+=1

print("The number of Digits in the string is: ",countdig)

elif n==5:

sen=input("Enter the string: ")

print()

countalpha=0

for ch in sen:

if ch.isalpha():

countalpha+=1

print("The number of Alphabets in the string is: ",countalpha)

else:

print("INVALID CHOICE!!")

menu()

n=int(input("Enter your choice: "))

print()

#All Conditions

print("Thank You For Using TEXT STUFF")

#End of code

PRACTICAL-20

DATE:

AIM: Write a menu driven program in Python to find the largest and smallest element in a list.

Code:

def menu():

print()

print("MAX and MIN of a LIST")

print()

print("[1] Find MAX VALUE")

print("[2] Find MIN VALUE")

print("[0] Exit")

print()

#Defining menu

menu()

n=int(input("Enter your choice: "))

while n!=0:

if n==1:

print()

terms=input("Enter the numbers separeted by 2 spaces: ")

l=[]

for term in terms.split():

l.append(int(term))

print("The MAX VALUE in this list is: ", max(l))

elif n==2:

print()

terms=input("Enter the numbers separeted by 2 spaces: ")

l=[]

for term in terms.split():

l.append(int(term))

print("The MIN VALUE in this list is: ",min(l))

else:

print()

print("INVALID CHOICE!!")

menu()

n=int(input("Enter your choice: "))

#All Conditions

print("Thank You For Using Max and Min of a LIST")

#End of Code

PRACTICAL-21

DATE:

AIM: Write a menu driven program in Python to search a specified element in a given list

Code:

def menu():

print()

print("List Element Searcher (LES)")

print("[1] Find Element")

print("[0] Exit")

print()

#Defining menu

menu()

n=int(input("Enter your choice: "))

print()

while n!=0:

if n==1:

print()

terms=input("Enter the terms seperated by 2 spaces: ")

print()

term=input("Enter the term to search for: ")

if term in terms.split():

print("The term is in the list")

else:

print("Term NOT FOUND!!")

else:

print("INVALID CHOICE!!")

menu()

n=int(input("Enter your choice: "))

#All Conditions

print("Thank You For Using LES")

#End of Code

PRACTICAL-22

DATE:

AIM: Write a menu driven program in Python to reverse the list, find the sum of elements of list, and find average and standard deviation

Code:

def menu():

print()

print("LIST STUFF")

print("[1] Print Reverse")

print("[2] Find Sum of Elements")

print("[3] Find Average of list")

print("[4] Find Standard Deviation")

print("[0] Exit")

print()

#Defining Menu

menu()

n=int(input("Enter your choice: "))

print()

while n!=0:

if n==1:

terms=input("Enter the terms seperated by 2 spaces: ")

l=[]

for term in terms.split():

l.append(int(term))

print("The reverse of the list is: ",l[::-1])

elif n==2:

terms=input("Enter the terms seperated by 2 spaces: ")

l=[]

for term in terms.split():

l.append(int(term))

sum=0

for j in l:

sum+=j

print("The sum of the elements is: ",sum)

elif n==3:

terms=input("Enter the terms seperated by 2 spaces: ")

l=[]

for term in terms.split():

l.append(int(term))

sum=0

for j in l:

sum+=j

mean=(sum/len(l))

print("The average of the list is: ",mean)

elif n==4:

terms=input("Enter the terms seperated by 2 spaces: ")

l=[]

for term in terms.split():

l.append(int(term))

sum=0

for j in l:

sum+=j

sd=0

mean=(sum/len(l))

for i in l:

sd+=((i-mean)\*\*2)/len(l)

print("The Standard Deviation of the list is: ",sd)

else:

print("INVALID CHOICE!!")

menu()

n=int(input("Enter your choice: "))

#All Conditions

print("Thank You For Using LIST STUFF")

#End of Code

PRACTICAL-23

DATE:

AIM: Write a Python program to find the repeated items of a tuple

Code:

n=int(input("Enter the number of terms (Greater than 1): "))

#Taking number of terms

if n>1:

tup1=tuple((input("Enter the first term: ")))

for i in range(1,n):

tup2=tuple((input("Enter the next term: ")))

tup1+=tup2

#Making the tuple

x={}

for i in tup1:

if tup1.count(i)>1:

x[i]=tup1.count(i)

#Entering in dictionary

for keys in x:

print(keys)

#printing keys of dictionary, will give all repeated items

#End of code

PRACTICAL-24

DATE:

AIM: Write a Python program to calculate the product, multiplying all the numbers of a given tuple

Code:

tup=(1,2,3,4,5)

#Taking a given tuple

mult=1

for i in tup:

mult\*=i

#multiplying all terms

print(mult)

#printing

#End of code

PRACTICAL-25

DATE:

AIM: Write a Python script to print a dictionary which is storing student roll\_no as a key and their (name, marks) as values.

Code:

import json

d={}

#Making empty dictionary

num=int(input("Enter number of entries: "))

#Taking number of entries

rno=[]

name=[]

marks=[]

#Making lists for roll, name and marks for input

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

roll=int(input("Enter the Roll no: "))

nme=input("Enter the Name: ")

mrks=int(input("Enter the Marks: "))

rno.append(roll)

name.append(nme)

marks.append(mrks)

#Entering all data from user

for i in range(0,num):

d[rno[i]]=[name[i],marks[i]]

#Adding data in dictionary

print(json.dumps(d))

#Printing

#End of Code

PRACTICAL-26

DATE:

AIM: Write a Python program to get the maximum and minimum value in a dictionary.

Code:

d={}

#Making Empty Dictionary

num=int(input("Enter number of entries: "))

#Taking number of entries

keys=[]

values=[]

#Making list for input

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

key=i

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

keys.append(key)

values.append(value)

#Taking Data from user

for i in range(0,num):

d[keys[i]]=values[i]

#Adding all data to Dictionary

print("The maximum and minimum value in the dictionary is: ",max(d.values()),min(d.values()),"respectively")

#Printing

#End of Code