NAME : PRIYANSHU JHA

CLASS- XI-B

ADM. NO. : 10618

SCHOOL : MASD PUBLIC SCHOOL

SUBJECT : PRACTICAL FILE FOR COMPUTER

INDEX

Sr. No.	Description	Page No.	Sign
1	*For Multiple Print Statement*	4	
2	*To swap the Three Number and swap common variables*	5	
3	*To swap the Two Number with a 3rd variable*	6	
4	*To do Arithmetic Operation on two numbers*	7	
5	*To Find the Area of Cuboids*	8	
6	*To Find the Information of Special Figures*	9	
7	*Unit Converter*	10	
8	*Celsius to Fahrenheit And Fahrenheit to Celsius*	11	
9	*To calculate the workdone by 3 person*	12	
10	*PyAPP Generate Your Sick Leave Application using Pyhton*	13-14	
11	*APP to calculate Body Mass Index (BMI) of a person*	15	
12	*TEXT REPEATER*	16	
13	*Numerical Pattern Creator without loop*	17	
14	*Average of 6 data*	18	
15	*PyApp to Guess you character by the 1st letter of your Name*	19	
16	*PyApp to Generate Trigonometric Ratios (Limited)*	20	
17	*PyApp for Simple And Compound Interest(compounded Annually) and calculate monthly EMI*	21	
18	*Representation of Various Data type of Python*	22	
19	*PyApp for Area & Volume Of Sphere*	23	
20	*PyApp to Generate Trigonometric Ratios of SIN & COS*	24	
21	*PyApp to Guess you character & Lucky Number*	25	
22	*PyApp to find Mean, Median by STATISTICS Module*	26	
23	*PyApp to Find Area by Heron's Formula*	27	

INDEX

SR. No.	Description	Page Number	Sign.
24	*PyApp to Generate Trigonometric Ratios for 0<angle<180*	28	
25	*To Calculate BMI and Provide Suggestion Bases on BMI Value*	29	
26	*PyApp to Know your Grade*	30	
27	*PyApp to find Triangle's Validity and its type*	31	
28	*PyApp to if the Given Year is a Leap Year or Not*	32	
29	*PyApp to find the multiple of Divisor and Count them*	33	
30	*Python Calculator*	34	
31	*Pyapp to Calculate Quadratic Equations*	35-36	
32	*To find the factorial of a number using range and while Module*	37	
33	*Printing Mathematic Pattern & Sorting data with multiple inputs*	38	
34	*PyGame from random and while module*	39	
35	*To print Graphical Pattern using Star(*)*	40	
36	*PyApp to find Prime No.*	41	
37	*PyApp to Show the brief details of a Sentence*	42	
38	*Email Validator for Specific Company*	43	
39	*To Show a 2D List using User's Given Value*	44	
40	*PyApp to Modify List Elements*	45-46	
41	*Finding Mean, Mode and Median of the Given data by Logical Method*	47	
42	*PyApp to Differentiate Domain & User Name From Email IDs and Represent in Tuple*	48	

PROGRAM-1

```
#For Multiple Print Statement
#Bio data of Mr. Priyanshu Jha
PJ="Priyanshu Jha"
Name="My name is Priyanshu Jha"
Adm="My Admission No. is 10618 "
Class="I read in Eleventh-B Class"
School="I study in MASD Public School"
Address=" I live in Panipat"
Hobbies="My Hobbies are to explore the thing and simplify them"
Favcolor="My favorite color is  Chromium Black "
Aim="My Aim is to achieve great height in my life and never depend on anybody else"
Weak="My weakness is ---The Crowd----"
Sub="My favorite subject is  Computer Science "
Moto="I will win not immediately, but Definitely "
print(Name)
print(Adm)
print(Class)
print(School)
print(Address)
print(Hobbies)
print(Favcolor)
print(Aim)
print(Weak)
print(Sub)
print(Moto)
print("PYHTON WLECOMES MR. " ,PJ, "IN THE WORLD OF PYTHON")
```

OUTPUT-1

```
My name is Priyanshu Jha
My Admission No. is 10618
I read in Eleventh-B Class
I study in MASD Public School
 I live in Panipat
My Hobbies are to explore the thing and simplify them
My favorite color is  Chromium Black
My Aim is to achieve great height in my life and never depend on anybody else
My weakness is ---The Crowd----
My favorite subject is  Computer Science
I will win not immediately, but Definitely
PYHTON WLECOMES MR.  Priyanshu Jha IN THE WORLD OF PYTHON
```

PROGRAM-2

```
#To swap the Three Number and swap common variables
p,p,p=1,2,3
'Here p=3 as python take the final value only of a variable'
q,r,s=5+p,6+p,7+p
print("The value of p,q,r,s are ",p,q,r,s)

a,b,c=10,20,30
Print("The Original Numbers are ", a,b,c)
c,b,a=a,b,c
print("The result after Swapping are ",a,b,c)
```


OUTPUT-2

```
The value of p,q,r,s are  3 8 9 10

The Original Numbers are  10 20 30

The result after Swapping are  30 20 10
```

PROGRAM – 3

```
#To swap the Two Number with a 3rd variable
x=eval(input("Enter 1st No.  "))
y=eval(input("Enter 2nd No.  "))
z=y
y=x
x=z
print("The result after Swapping are ",x,y)
```


OUTPUT-3

```
Enter 1st No.  10

Enter 2nd No.  20

The result after Swapping are  20 10
```

PROGRAM-4

```
#To do Arithmetic Operation on two numbers
x=eval(input("Enter 1st No.  "))
y=eval(input("Enter 2nd No.  "))
print("The Sum of the Number is ", x+y)
print("The Difference of the number is",x-y)
print("The Product of the Number is ", x*y)
print("The Division of the Number is", x/y)
print("The Modulus (Remainder) of the Number is ",x%y )
```


OUTPUT-4

```
Enter 1st No.  200

Enter 2nd No.  100

The Sum of the Number is  300

The Difference of the number is 100

The Product of the Number is  20000

The Division of the Number is 2.0

The Modulus (Remainder) of the Number is  0
```

PROGRAM-5

```
#To Find the Area of Cuboid
unit="Square Meter"
print("For Cuboid")
l,b,h=int(input("Enter Lenght ")),eval(input("Enter Breadth
")),eval(input("Enter Height "))
TSA_CUBOID=2*((l*b)+(b*h)+(h*l))
CSA_CUBOID=2*l*(b+h)
print("The Total Surface Area of the Cuboid is  ", TSA_CUBOID,unit)
print("The Curved Surface Area of the Cuboid is ", CSA_CUBOID,unit)
```


OUTPUT-5

```
For Cuboid

Enter Lenght 10

Enter Breadth 10

Enter Height 10

The Total Surface Area of the Cuboid is   600 Square Meter

The Curved Surface Area of the Cuboid is  400 Square Meter
```

PROGRAM-6

```
#To Find the Information of Special Figures
unit="Meter"
print("FOR Circles ")
r=int(input("Enter Radius in Meter "))
Circumference=2*(3.14)*(r)
Area1=(22/7)*(r)**2
print("The Circumference of Circle is  ", Circumference,unit)
print("The Area of the Circle is ", Area1,unit)

print("FOR TRINAGLES ")
b,h=int(input("Enter Length of Base in Meter ")),eval(input("Enter height in
Meter "))
Area2=(1/2)*b*h
print("The Total Area of the Triangle is  ", Area2,unit)

print("For RECTANGLE")
l,w=int(input("Enter Length in Meter ")),eval(input("Enter breadth in Meter
"))
Area3=l*b
Perimeter1=2*(l+w)
print("The Total Area of the Rectangle is  ", Area3,unit)
print("The Perimeter of the Rectangle is  ", Perimeter1,unit)
```

OUTPUT-6

```
FOR Circles
Enter Radius in Meter 200
The Circumference of Circle is   1256.0 Meter
The Area of the Circle is  125714.28571428571 Meter
FOR TRINAGLES
Enter Length of Base in Meter 50
Enter height in Meter 30
The Total Area of the Triangle is   750.0 Meter
For RECTANGLE
Enter Length in Meter 20
Enter breadth in Meter 50
The Total Area of the Rectangle is   1000 Meter
The Perimeter of the Rectangle is   140 Meter
For Square
Enter Length of side in Meter 29
The Total Area of the Square is   841 Meter
The Perimeter of the Square is   116 Meter
```

PROGRAM-7

```
#Unit Converter
print("FOR Kilometer into miles ")
km=int(input("Enter Value in KM "))
miles=km*0.621371
print("MILES :  ", miles)


print("FOR TONNES into QUINTAL,KG and GRAMS ")
Tonnes=int(input("Enter Weight in Tonnes "))
QUINTALS=Tonnes*10
KG=Tonnes*1000
GRAMS=Tonnes*1000*1000
print("Tonnes  : ", Tonnes)
print("QUINTALS : " , QUINTALS)
print("Kilograms  : ", KG )
print("GRAMS   : ", GRAMS)
```

OUTPUT-7

```
FOR Kilometer into miles
Enter Value in KM 90
MILES :   55.92339
FOR TONNES into QUINTAL,KG and GRAMS
Enter Weight in Tonnes 1
Tonnes  :  1
QUINTALS :  10
Kilograms  :  1000
GRAMS   :  1000000
```

PROGRAM-8

```
#Celsius to Fahrenheit And Fahrenheit to Celsius
print("FOR Celsius to Fahrenheit ")
C=eval(input("Enter Temperature in Celsius "))
F=C*9/5+32
print("Temperature In Fahrenheit is :  ", F)


print("FOR Fahrenheit to Celsius ")
F1=eval(input("Enter Temperature in Fahrenheit "))
C1=(F1-32)*(5/9)
print('Temperature In Celsius is :  ', C1)
```

OUTPUT-8

```
FOR Celsius to Fahrenheit
Enter Temperature in Celsius 100
Temperature In Fahrenheit is :   212.0
FOR Fahrenheit to Celsius
Enter Temperature in Fahrenheit 212
Temperature In Celsius is :   100.0
```

PROGRAM-9

```
#To calculate the workdone by 3 person
unit="Days"
x=eval(input("Enter Time Taken by the 1st Person to complete the same work(In days) :  "))
y=eval(input("Enter Time Taken by the 2nd Person to complete the same work(In days) :  "))
z=eval(input("Enter Time Taken by the 3rd Person to complete the same work(In days) :  "))
workdone=(x*y*z)/((x*y)+(y*z)+(z*x))
print("Individually 1st, 2nd , 3rd can take following days respectively  : ",x, y, z)
print("Time to complete the same  work by three person is :", workdone,unit)
```

OUTPUT-9

```
Enter Time Taken by the 1st Person to complete the same work(In days) :  365
Enter Time Taken by the 2nd Person to complete the same work(In days) :  720
Enter Time Taken by the 3rd Person to complete the same work(In days) :  365
Individually  1st, 2nd , 3rd can take following days respectively  :  365 720 365
Time to complete the same  work by three person is : 145.595567867036 Days
```

PROGRAM-10

```
#PyAPP Generate Your Sick Leave Application using Pyhton
Name=str(input("Enter your Good Name :  "))
School=str(input("Enter your School Name :  "))
Address=str(input("Enter your Complete Address  :"))
Leave=str(input("Enter the No. of days you want leave :  "))
"\n"
print('''To
The Principal,''' "\n",School, "\n",Address, "\n"
'''Subject: Sick leave request
Respected Sir,
It is respectfully stated that I am running a high fever and doctor diagnosed my condition
and advised me for a rest . I feel drowsiness and going through severe headache and body
pain. Since , my doctor has completely appointed bed rest for a
''',Leave,'''days. I have been a remarkable student in the school, achieving high position in every grade.My attendance report of this year is also 100%.
I request you to allow me leave for a week so I get back on my feet and work with my indistinguishable vibrancy and full spirit as before.
As soon as I am done with recovery, I would take help of my fellows and recover course as soon as possible and give my best in examination.
I, therefore, urge you to accept my application and also consider my academic and attendance report while granting me leave.
Yours Truly,''', "\n", Name)
```

OUTPUT-10

```
Enter your Good Name :  Priyanshu Jha
Enter your School Name :  SPD International School
Enter your Complete Address  : Panipat, Haryana-132103
Enter the No. of days you want leave :  5

To
The Principal,
 SPD International School
 Panipat, Haryana-132103
Subject: Sick leave request
Respected Sir,
It is respectfully stated that I am running a high fever and doctor diagnosed
my condition
and advised me for a rest . I feel drowsiness and going through severe
headache and body
pain. Since , my doctor has completely appointed bed rest for a  5 days. I
have been a remarkable student in the school, achieving high position in
every grade.My attendance report of this year is also 100%. I request you to
allow me leave for a week so I get back on my feet and
work with my indistinguishable vibrancy and full spirit as before.
As soon as I am done with recovery, I would take help of my fellows and
recover course as soon as possible and give my best in examination.
I, therefore, urge you to accept my application and also consider my academic
and attendance report while granting me leave.
Yours Truly,
 Priyanshu Jha
```

PROGRAM-11

```
# APP to calculate Body Mass Index (BMI) of a person
weight=float(input("Enter Your Weigth In Kg  : "))
height=float(input("Enter your Height in Meter  : "))
bmi=int(weight/(height*height))
print("The BMI is : ", bmi)
```


OUTPUT-11

```
Enter Your Weigth In Kg  : 54

Enter your Height in Meter  : 1.7

The BMI is :  18
```

PROGRAM-12

```
# TEXT REPEATER
WORD=str(input("Enter Your Text to Repeat  : "))
No=int(input("Enter the No. of time you want to repeat  : "))
rep=(WORD*No)
print(rep)
```


OUTPUT-12

```
Enter Your Text to Repeat  : PJ Loves Tech

Enter the No. of time you want to repeat  : 6

PJ Loves Tech  PJ Loves Tech  PJ Loves Tech  PJ Loves Tech  PJ Loves Tech  PJ
Loves Tech
```

PROGRAM-13

```
# Numerical Pattern Creator without loop
x=eval(input("Enter Your Number to create a series   : "))
y=eval(input("Enter the gap between Numbers  : "))
print(x)
x,y=x+y,x
print(x)
x=x+y
print(x)
x=x+y
print(x+y)
x=x+y
print(x+y)
x=x+y
print(x+y)
x=x+y
print(x+y)
x=x+y
print(x+y)
```


OUTPUT-13

```
Enter Your Number to create a series   : 2

Enter the gap between Numbers  : 2

2

4

6

10

12

14

16

18
```

PROGRAM-14

```
# Average of 6 data
a=int(input("Enter Your 1st Number: ")
b=int(input("Enter Your 2nd Number: ")
c=int(input("Enter Your 3rd Number: ")
d=int(input("Enter Your 4th Number: ")
e=int(input("Enter Your 5th Number: ")
f=int(input("Enter Your 6th Number: ")
sum=a+b+c+d+e+f
avg=sum/6
print(" The Average of the above data is :  ", sum/6)
```


OUTPUT-14

```
Enter Your 1st Number: 500

Enter Your 2nd Number: 200

Enter Your 3rd Number: 300

Enter Your 4th Number: 400

Enter Your 5th Number: 100

Enter Your 6th Number: 1000

 The Average of the above data is :   416.6666666666667
```

PROGRAM-15

```
# PyApp to Guess you character by the 1st letter of your Name(Dynamic
Variable)
print("Welcome to the Game")
"\n"
A,B,C,D,E,F,G,H,I="Sensitive","Caring","Cautious"
,"Courageous","Disciplined","Farsighted","Focused","Friendly","Hardworking"
J,K,L,M,N,O,P="Helpful","Trustworthy","Sincere","Loyal","Joyful","Loving","In
novative and Friendly"
Q,R,S,T,U,V="Modest","Motivating","Obedient","Open-
minded","Optimistic","Passionate"
W,X,Y,Z="Punctual","Realistic","Reliable","Responsible"
alpha=(input("Enter 1st Letter of Your Name in Capital letter :  "))
print(" You are",eval(alpha))
```


OUTPUT-15

```
Welcome to the Game

Enter 1st Letter of Your Name in Capital letter :  P

 You are Innovative and Friendly
```

PROGRAM-16

```
# PyApp to Generate Trigonometric Ratios(Limited)
print('''You are using PyTigon app v1.0
This is unique app made for students to help in the work
This app is made by Mr. Priyanshu Jha from Panipat
The result are approx bounded by limits with error percentage 0.00000035
IMP:- Only Those angles allowed where value of all Trigonometry is Defined
''')
x=eval(input("Enter Angle in Degree in limit of (-1 < Angle < 181 )  : "))
sin=4*x*(180-x) / (40500-x*(180-x))
print("The sine of the given Angle is : ", sin)
cos=(32400-(4*(x**2)))/(32400+(x**2))
print("The Cosine of the given Angle is : ", cos)
tan=sin/cos
print("The Tangent of the given Angle is : ",tan)
cosec=(1/sin)
print("The Cosecant of the given Angle is : ",cosec)
sec=(1/cos)
print("The Secant of the given Angle is : ",sec)
cot=(1/tan)
print("The Cotangent of the given Angle is : ",cot)
print('''
              Thank you for using our App . Kindly visit Again ''')
```


OUTPUT-16

```
You are using PyTigon app v1.0
This is unique app made for students to help in the work
This app is made by Mr. Priyanshu Jha from Panipat
The result are approx bounded by limits with error percentage 0.00000035
IMP:- Only Those angles allowed where value of all Trigonometry is Defined

Enter Angle in Degree in limit of (-1 < Angle < 181 )  : 45
The sine of the given Angle is :  0.7058823529411765
The Cosine of the given Angle is :  0.7058823529411765
The Tangent of the given Angle is :  1.0
The Cosecant of the given Angle is :  1.4166666666666665
The Secant of the given Angle is :  1.4166666666666665
The Cotangent of the given Angle is :  1.0

              Thank you for using our App . Kindly visit Again
```

PROGRAM-17

```
# PyApp for Simple And Compound Interest(compounded Annually) and calculate
monthly EMI
P=float(input("Enter the Amount you Need as Loan : "))
T=float(input("Enter the Duration for which you require Loan (In Years) : "))
R=float(input("Enter the Minimum Rate of Interest that you can pay(In
percentage) :"))
simple_int=(P*T*R)/100
compound_int=(P*((1+(R/100))**T)-P)
print("The simple interest of the give data is :  ",simple_int)
print("The compound interest of the give data is :  ",compound_int)
sum_simple=simple_int+P
print("Total Re-payment In case of Simple Interest will be : ",sum_simple)
sum_compound=compound_int+P
print("Total Re-payment In case of Compound Interest will be :
",sum_compound)
"\n"
print("Monthly EMI in case of Simple Interest Will be : ",sum_simple/(T*12))
print("Monthly EMI in case of Compound Interest Will be :
",sum_compound/(T*12))
```


OUTPUT-17

```
Enter the Amount you Need as Loan : 99920501
Enter the Duration for which you require Loan (In Years) : 5
Enter the Minimum Rate of Interest that you can pay(In percentage) :2
The simple interest of the give data is :   9992050.1
The compound interest of the give data is :   10399806.000226408
Total Re-payment In case of Simple Interest will be :  109912551.1
Total Re-payment In case of Compound Interest will be :  110320307.00022641
Monthly EMI in case of Simple Interest Will be :  1831875.8516666666
Monthly EMI in case of Compound Interest Will be :  1838671.7833371067
```

PROGRAM-18

```
#Showcase of Various data representations

z=(1+2.56j)+(-4-3.56j)
print("The Complex No. in Python is shown as ", z)
print("Real Part of Complex no. is ",z.real)
print("Imaginary part of Complex No. is " ,z.imag)
List=['Good', 'Night', 2, 'U', 'All' ]#mutable
print ("Example of List is ", List)
List[3],List[4]='only', 'me'
print("Modified List is ", List)
Tuple=('Have', 'a' ,'GR8', 'Day') #Immutable
print("Tuple is Immutable i.e Non-Chnagebale, Ex. of Tuple is ", Tuple)
Set={1,2,3,4,4,'No.'}
print(" The Example of Set is ", Set)
Dict={'x':5,'y':6}
print("Exmaple of Dictionary In Python", Dict)
print(" The value of of y in Dictionary is ", Dict['y'])
w=z
print("memory id of z ", id(z))
print("memory id of w (w=z) ", id(w))#changing variables does not change
memory location but changing value changes memory location
```


OUTPUT-18

```
The Complex No. in Python is shown as  (-3-1j)
Real Part of Complex no. is  -3.0
Imaginary part of Complex No. is  -1.0
Example of List is  ['Good', 'Night', 2, 'U', 'All']
Modified List is  ['Good', 'Night', 2, 'only', 'me']
Tuple is Immutable i.e Non-Chnagebale, Ex. of Tuple is  ('Have', 'a', 'GR8',
'Day')
 The Example of Set is  {'No.', 1, 2, 3, 4}
Exmaple of Dictionary In Python {'x': 5, 'y': 6}
 The value of of y in Dictionary is  6
memory id of z  20766920
memory id of w (w=z)  20766920
```

PROGRAM-19

```
#pyAPP for Area & Volume of Sphere
import math
a=float(input("Enter the Radius of Sphere in Meter  : "))
area=math.pi*math.pow(a,2)
volume=4*math.pi*math.pow(a,3)
print("The radius of Sphere is ", a , "Meter")
print("The area of Sphere is ", area , "Meter Square")
print("The volume of Sphere is ", volume, "Meter Cube ")
```


OUTPUT-19

```
Enter the Radius of Sphere in Meter  : 66.32
The radius of Sphere is  66.32 Meter
The area of Sphere is  13817.800171812498 Meter Square
The volume of Sphere is  3665586.0295784185 Meter Cube
```

PROGRAM-20

```
# PyApp to Generate Trigonometric Ratio of SIN & COS
e=2.718281
degree=float(input("Enter the Angle in Degree :  "))
rad=(3.14*degree)/180
print("Angle in Radian : ", rad,"radian")
x=rad
sin=(e**(x*1j)).imag
print("The value of SIN at ", degree," Degree is ", round(sin,1))
cos=(e**(x*1j)).real
print("The value of COS at ", degree," Degree is " , round(cos,1))
```


OUTPUT-20

```
Enter the Angle in Degree :  90
Angle in Radian :  1.57 radian
The value of SIN at  90.0  Degree is  1.0
The value of COS at  90.0  Degree is  0.0
```

PROGRAM-21

```
# PyApp to Guess you character & Your Lucky Number

import random
print("Welcome to the Game")
"\n"
Bucket=["Sensitive","Caring","Cautious","Courageous","Disciplined","Farsighte
d",\
"Focused","Friendly","Hardworking","Helpful","Trustworthy","Sincere","Loyal",
\
"Joyful","Loving","Innovative and
Friendly","Modest","Motivating","Obedient",\
"Open-minded","Optimistic","Passionate","Punctual","Realistic","Reliable",\
"Responsible"]
alpha=(input("Enter Your Name:  "))
print(" You are", random.choice(Bucket))
No=random.randrange(0,1001)
X=random.randint(0,No)
print("Your Today's Lucky Number is ", X)
```


OUTPUT-21

```
Welcome to the Game
Enter Your Name:  Mr.  X
You are Passionate
Your Today's Lucky Number is  546
```

PROGRAM-22

```
# PyApp to MEAN, MODE, MEDIAN by STATISTICS

import statistics as stat
Data=list(map(float,input("Enter the Data Separated by Comma :  "
).split(",")))
Mean=stat.mean(Data)
Mode=stat.mode(Data)
Median=stat.median(Data)
print("Given List is :", Data)
print("Mean of the Given Data is  ", Mean)
print("Mode of the Given Data is  ", Mode)
print("Median of the Given Data is  ", Median)
```


OUTPUT-22

```
Enter the Data Separated by Comma :  22,13,28,13,22,25,7,13,25
Given List is : [22.0, 13.0, 28.0, 13.0, 22.0, 25.0, 7.0, 13.0, 25.0]
Mean of the Given Data is   18.666666666666668
Mode of the Given Data is   13.0
Median of the Given Data is   22.0
```

PROGRAM-23

```
# PyApp to Find Area by Heron's Formula

import math
a=int(input("Enter Length of 1st Side :"))
b=int(input("Enter Length of 2nd Side :"))
c=int(input("Enter Length of 3rd Side :"))
s=(a+b+c)/2
Area=math.sqrt((s)*(s-a)*(s-b)*(s-c))
print ("Area of the Triangle is ", Area)
```


OUTPUT-23

```
Enter Length of 1st Side :17
Enter Length of 2nd Side :23
Enter Length of 3rd Side :30
Area of the Triangle is  194.42222095223582
```

PROGRAM-24

```
# PyApp to Generate Trigonometric Ratios for 0<angle<180
print('''You are using PyTigon app v2.0
This is unique app made for students to help in the work
This app is made by Mr. Priyanshu Jha from Panipat
The result are approx bounded by limits with error percenatge 0.00000035
IMP:- Here 999999999 represents Not defined , it is done to avoid bugs
''')
x=eval(input("Enter Angle in Degree in limit of (-1 < Angle < 181 )  : "))
sin=4*x*(180-x) / (40500-x*(180-x))
print("The sine of the given Angle is : ", sin)
cos=(32400-(4*(x**2)))/(32400+(x**2))
print("The Cosine of the given Angle is : ", cos)
tan=sin/cos if cos!=0 else 999999999
print("The Tangent of the given Angle is : ",tan)
cosec=(1/sin) if sin!=0 else 999999999
print("The Cosecant of the given Angle is : ",cosec)
sec=(1/cos) if cos!=0 else 999999999
print("The Secant of the given Angle is : ",sec)
cot=(1/tan) if tan!=0  else 999999999
print("The Cotangent of the given Angle is : ",cot)
print('''
            Thank you for using our App . Kindly visit Again
                                                                    ''')
```


OUTPUT-24

```
You are using PyTigon app v2.0
This is unique app made for students to help in the work
This app is made by Mr. Priyanshu Jha from Panipat
The result are approx bounded by limits with error percenatge 0.00000035
IMP:- Here 999999999 represents Not defined , it is done to avoid bugs

Enter Angle in Degree in limit of (-1 < Angle < 181 )  : 45
The sine of the given Angle is :  0.7058823529411765
The Cosine of the given Angle is :  0.7058823529411765
The Tangent of the given Angle is :  1.0
The Cosecant of the given Angle is :  1.4166666666666665
The Secant of the given Angle is :  1.4166666666666665
The Cotangent of the given Angle is :  1.0

            Thank you for using our App . Kindly visit Again
```

PROGRAM-25

```
# Calculate Body Mass Index (BMI) of a person with If/else module
weight=float(input("Enter Your Weigth In Kg  : "))
height=float(input("Enter your Height in Meter  : "))
bmi=int(weight/(height*height))
print("The BMI is : ", bmi)
low="Your BMI is less than average, Kindly eat something healthy "
high="Your BMI is high than average , Kindly go on diet "
mid="Your BMI is Good, Kindly Maintain it"
if (bmi<=18):
    print(low)
elif (bmi>18) and (bmi<25):
    print(mid)
else :
    print(high)
```


OUTPUT-25

```
Enter Your Weigth In Kg  : 54

Enter your Height in Meter  : 1.7

The BMI is :  18

Your BMI is less than average, Kindly eat something healthy
```

PROGRAM-26

```
#Pyapp to Know your Grade
N=int(input("Enter Your Marks out of 100  : "))
V="Grade"
if 101>N>=90 : print(V," E")
elif 90>N>=75 : print(V," O")
elif 75>N>=60 : print (V," A")
elif 60>N>=45 : print (V," B")
elif 45>N>=33 : print (V,"C")
else : print (V, " F")
```


OUTPUT-26

```
Enter Your Marks out of 100  : 32
Grade  F
```

PROGRAM-27

```
#Pyapp To find triangle's Validity  and its Type
a=int(input("Enter 1st side of triangle :"))
b=int(input("Enter 2nd side of triangle :"))
c=int(input("Enter 3rd side of triangle :"))
if a+b>c and b+c>a and c+a>b :
 print("The Triangle is valid")
 if a==b==c :
    print("It is an equilateral triangle")
 elif a==b or b==c or c==a :
    print("It is an isosceles triangle")
 else :
    print("It is a scalene triangle")
else :
 print("Triangle is invalid")
```


OUTPUT-27

```
Enter 1st side of triangle :20
Enter 2nd side of triangle :30
Enter 3rd side of triangle :40
The Triangle is valid
It is a scalene triangle
```

PROGRAM-28

```
#Pyapp to find if the given year is a leap year or Not.
Y=int(input("Enter the Year : "))
if Y%4==0 and Y%100!=0 or Y%400==0: print("It is a leap year")
else: print("It is not a leap year")
```


OUTPUT-28

```
Enter the Year : 2003
It is not a leap year
```

PROGRAM-29

```
#Pyapp to find the multiple of Divisor and count them.
print ("Enter five numbers below", "\n")
n1=float(input ("First number : "))
n2=float(input ("Second number : "))
n3=float(input ("Third number : " ))
n4=float(input ( "Fourth number : "))
n5=float(input( "Fifth number : "))
D=float (input ("Enter divisor number: " ))
count=0
print("Multiples of", D, "are : ")
remainder = n1%D
if remainder==0 :
    print(n1, sep=" ")
    count+=1
remainder = n2%D
if remainder==0 :
    print(n2, sep=" ")
    count+= 1
remainder = n3%D
if remainder==0 :
    print(n3, sep=" ")
    count+= 1
remainder = n4*D
if remainder==0 :
    print (n4, sep =" ")
    count +=1
remainder = n5%D
if remainder==0 :
    print (n5, sep =" ")
    count +=1
print()
print(count, "multiples of", D,"Found")
```

OUTPUT-29

```
Enter five numbers below

First number : 200
Second number : 250
Third number : 4
Fourth number : 323
Fifth number : 22002020202002
Enter divisor number: 5
Multiples of 5.0 are :
200.0
250.0

2 multiples of 5.0 Found
```

PROGRAM-30

```
#Python Calculator
N1=float(input("Enter first number : " ))
N2=float(input( "Enter second number : "))
op=(input("Enter operator [+- * / %] : "))
result =0
if op=='+':
    result = N1 + N2
elif op == '-' :
    result = N1 - N2
elif op == '*' :
    result0020= N1*N2
elif op=='/':
    result=N1/N2
else:
    print("Invalid Operator, Aborting !!!!!!!!!!")
print(N1,op,N2,"=",result)
```


OUTPUT-30

```
Enter first number : 50
Enter second number : 10
Enter operator [+- * / %] : *
50.0 * 10.0 = 500.0
```

PROGRAM-31

```
#Pyapp to Calculate Quadratic Equations
import math
print("FOR QUADRATIC EQUATIONS IN THE FORM OF Ax**2 + Bx + c ,ENTER
COEFFICIENTS BELOW : ")
a=int(input("ENTER THE VALUE OF A: "))
b=int(input("ENTER THE VALUE OF B : "))
c=int(input("ENTER THE VALUE OF C: "))
if a==0 :
    print("Value of A =",a,"should not be Zero")
    print("\n !!!!!!!!!!Aborting!!!!!!!!!!!!!!!")
else:
    D=math.pow(b,2)-4*a*c
    print("The value of Discriminant is ", D)
    if D>0:
        r1 = (-b + (D**1/2))/(2*a)
        r2 = (-b - math.sqrt(D))/(2*a)
        print("ROOTS ARE REAL AND UNEQUAL")
        print("ROOT-1 =",r1,"ROOT-2 = ", r2)
    elif D==0 :
        r1 = (-b)/(2*a)
        print("ROOTS ARE REAL AND EQUAL")
        print("ROOT-1 =",r1,"ROOT-2 = ", r1)
    else :
        print("ROOTS ARE COMPLEX AND IMAGINARY")
        r1=(((-b+(D**1/2j))/2*a))
        r2=(((-b-(D**1/2j))/2*a))
        print("ROOT-1 =",r1,"ROOT-2 = ", r2,"In Python j represents tradition
i for complex numbers")
```

OUTPUT-31

```
CASE-I
FOR QUADRATIC EQUATIONS IN THE FORM OF Ax**2 + Bx + c ,ENTER COEFFICIENTS
BELOW :
ENTER THE VALUE OF A: 2
ENTER THE VALUE OF B : 3
ENTER THE VALUE OF C: 4
The value of Discriminant is  -23.0
ROOTS ARE COMPLEX AND IMAGINARY
ROOT-1 = (-3+11.5j) ROOT-2 =  (-3-11.5j) In Python j represents tradition i
for complex numbers


 CASE-II
FOR QUADRATIC EQUATIONS IN THE FORM OF Ax**2 + Bx + c ,ENTER COEFFICIENTS
BELOW :
ENTER THE VALUE OF A: 3
ENTER THE VALUE OF B : 5
ENTER THE VALUE OF C: 2
The value of Discriminant is  1.0
ROOTS ARE REAL AND UNEQUAL
ROOT-1 = -0.75 ROOT-2 =  -1.0
```

PROGRAM-32

```
#To find the factorial of a number using range and while
x=int(input("Enter a Number to prints its factorial "))
fact=1
for i in range(2,x+1):
    fact=i*fact
print("The factorial of ",x," equals to ", fact,"Using range Module")
print()
fact2=1
n=1
while n<=x:
    fact2=n*fact2
    n=n+1
print("The factorial of ",x," equals to ", fact, "Using while Module")
```


OUTPUT-32

```
Enter a Number to prints its factorial 5
The factorial of  5  equals to  120 Using range Module

The factorial of  5  equals to  120 Using while Module
```

PROGRAM-33

```
#Print Mathematic Pattern Using Pyhton
x=38
fact=-1
sign=-1
for i in range(5,x,5):
    n=i*fact
    print( n, end=" ")
    fact=fact*(sign)

# Average of 6 data (multiple inputs) using map & Sorting Of data
a,b,c,d,e,f=map(int, input("Enter Your Number with a separator space  :
").split())
sum=a+b+c+d+e+f
avg=sum/6
print(" The Average of the above data is :  ", sum/6)
list=[a,b,c,d,e,f]
print("Ascending order : ",(sorted(list)))
print("Descending Order : ", (sorted(list, reverse=True)))
```


OUTPUT-33

```
-5 10 -15 20 -25 30 -35


Enter Your Number with a separator space  : 500 200 300 400 100 1000

 The Average of the above data is :   416.6666666666667

Ascending order :  [100, 200, 300, 400, 500, 1000]

Descending Order :  [1000, 500, 400, 300, 200, 100
```

PROGRAM-34

```
#PyGame from random and while module
import random
v=random.randint(1,30)
ctrl=0
while ctrl<5:
    n=int(input("Enter a No. in the Range ( 1 to 30) :  "))
    ctrl=ctrl+1
    if n==v:
        print("You win the Game, Congo!!!!!!!!!!")
        break
    else :
        print("You lose the Game, Sorry :  (  ")
```


OUTPUT-34

```
Enter a No. in the Range ( 1 to 30) :  30
You lose the Game, Sorry :  (
Enter a No. in the Range ( 1 to 30) :  29
You lose the Game, Sorry :  (
Enter a No. in the Range ( 1 to 30) :  28
You lose the Game, Sorry :  (
Enter a No. in the Range ( 1 to 30) :  27
You lose the Game, Sorry :  (
Enter a No. in the Range ( 1 to 30) :  26
You lose the Game, Sorry :  (
```

PROGRAM-35

```
#To print Graphical Pattern using Star(*)
n=5               # number of lines
# upper half
k= round (n/2)*2   # for initial spaces
for i in range(0,n,2):
    for j in range(0,k+1):
        print(end=" ")
    for j in range(0,i+1):
        print("* ", end="")
    k=k-2
    print()
#lower Half
k=1
for i in range(n-1, 0, -2):
    for j in range(0, k + 2):
        print(end=" ")
    for j in range(0, i-1):
        print("* ", end="")
    k = k + 2
    print()
```

OUTPUT-35

```
    *
  * * *
* * * * *
  * * *
    *
```

PROGRAM-36

```
# program to find Prime No.
A=int(input("Enter Starting Number : "))
B=int(input("Enter Last Number : "))
for No in range (A,B+1):
    for Fact in range (A+1,No):
        if No%Fact==0:
            print("The factor is ",Fact, "Hence",No,"is not a Prime No.",)
            break
    else:
        print (No," Is a Prime Number !! ")
```

OUTPUT-36

```
Enter Starting Number : 1
Enter Last Number : 25
1  Is a Prime Number !!
2  Is a Prime Number !!
3  Is a Prime Number !!
The factor is  2 Hence 4 is not a Prime No.
5  Is a Prime Number !!
The factor is  2 Hence 6 is not a Prime No.
7  Is a Prime Number !!
The factor is  2 Hence 8 is not a Prime No.
The factor is  3 Hence 9 is not a Prime No.
The factor is  2 Hence 10 is not a Prime No.
11  Is a Prime Number !!
The factor is  2 Hence 12 is not a Prime No.
13  Is a Prime Number !!
The factor is  2 Hence 14 is not a Prime No.
The factor is  3 Hence 15 is not a Prime No.
The factor is  2 Hence 16 is not a Prime No.
17  Is a Prime Number !!
The factor is  2 Hence 18 is not a Prime No.
19  Is a Prime Number !!
The factor is  2 Hence 20 is not a Prime No.
The factor is  3 Hence 21 is not a Prime No.
The factor is  2 Hence 22 is not a Prime No.
23  Is a Prime Number !!
The factor is  2 Hence 24 is not a Prime No.
The factor is  5 Hence 25 is not a Prime No.
```

PROGRAM-37

```
#to Show the brief details of a Sentence
txt=(input("Enter a Sentence to Show its Stats : "))
countN=countU=countL=0
countT=countS=0
for x in txt:
    if x.isdigit():
        countN+=1
    elif x.isupper():
        countU+=1
    elif x.islower():
        countL+=1
    elif x.isalnum()!=True and x!=' ':
        countS+=1
print("No. of Character including White Space are",len(txt))
print("No. of Digit are",countN)
print("No. of UPPERCASE Letter  are",countU)
print("No. of lowercase Letter are",countL)
print("No. of Symbolic Character are",countS)
```


OUTPUT-37

```
Enter a Sentence to Show its Stats : Hello my 123
No. of Character including White Space are 12
No. of Digit are 3
No. of UPPERCASE Letter  are 1
No. of lowercase Letter are 6
No. of Symbolic Character are 0
```

PROGRAM-38

```
#Email Validator for Specific Company
Email=(input("Enter Valid E-Mail Address :  "))
domain='@MASD.IN'
ledo=len(domain)
lema=len(Email)
sub=Email[lema-ledo: ]
if sub==domain :
    if ledo!=lema:
        print("It is a Valid Email")
    else:
        print('It is an Invalid Email')
else: print( "It has some different Domain")
```


OUTPUT-38

```
Enter Valid E-Mail Address :  hkdj@gmail.com
It has some different Domain
```

PROGRAM-39

```
#To Show a 2D List using User's Given Value
Lst=[]
r=int(input("How many rows : "))
c=int(input("How many column : "))
for i in range (r) :
    row=[ ]
    for j in range (c):
        elem=int(input("Element " + str(i)+","+str(j)+" :  "))
        row.append(elem)
    Lst.append(row)
print("List created is :" , Lst)
```


OUTPUT-39

```
How many rows : 5
How many column : 2
Element 0,0 :  3
Element 0,1 :  2
Element 1,0 :  1
Element 1,1 :  4
Element 2,0 :  5
Element 2,1 :  6
Element 3,0 :  7
Element 3,1 :  8
Element 4,0 :  9
Element 4,1 :  0
List created is : [[3, 2], [1, 4], [5, 6], [7, 8], [9, 0]]
```

PROGRAM-40

```
#PyApp to Modify List Elements

val = [117, 23, 18, 19]
print("the List is = ", val)
while True:
    print("Main Menu")
    print("1. Insert")
    print("2. Delete")
    print("3. Exit")
    ch = int(input("Enter your choice 1/2/3 : "))
    if ch == 1:
        item = int(input("Enter item : "))
        pos = int(input("Insert at which position "))
        index = pos- 1
        val.insert(index, item)
        print("SUCCESS! List is now  : ", val)
    elif ch == 2:
        print("Deletion Menu ")
        print("1. Delete using Value")
        print("2. Delete using index")
        print("3. Delete a sublist")
        dch = int(input("Enter choice (1 or 2 or 3): "))
        if dch == 1:
            item = int(input("Enter Item to be deleted : "))
            val.remove(item)
            print("List now is : ", val)
        elif dch == 2:
            index = int(input("Enter index of item to be deleted : "))
            val.pop(index)
            print("List is Now  :", val)
        elif dch == 3:
            l = int(input("Enter lower limit of List slice to be deleted: "))
            h = int(input("Enter upper limit of List slice to be deleted:" ))
            del val[l:h]
            print("List now is:", val)
    elif ch==3:
        break;
    else:
        print("Valid choices are 1/2/3 only !! ")
```

OUTPUT-40

```
The List is =  [117, 23, 18, 19]
Main Menu
1. Insert
2. Delete
3. Exit
Enter your choice 1/2/3 : 1
Enter item : 106
Insert at which position 1
SUCCESS! List is now  :  [106, 117, 23, 18, 19]
Main Menu
1. Insert
2. Delete
3. Exit
Enter your choice 1/2/3 : 2
Deletion Menu
1. Delete using Value
2. Delete using index
3. Delete a sublist
Enter choice (1 or 2 or 3): 1
Enter Item to be deleted : 19
List now is :  [106, 117, 23, 18]
Main Menu
1. Insert
2. Delete
3. Exit
Enter your choice 1/2/3 : 3
```

PROGRAM-41

```
# Finding Mean, Mode and Median of the Given data by Logical Method

data=str(input( "Enter the data separated by comma  :  "))
data1=list(map(float,data.split(",")))
n1=len(data1)
print("The lenght of Given Data is : " ,n1)
total=0
for n in data1:
    total += int(n)
print("The sum of the Number is ", float(total))
Mean=total/n1
print("The Mean of the data is : ", float(Mean))
data_sorted=sorted(data1)
print("The ascending order of the data is  :  ", data_sorted)
if (n1%2==0):
    Median=(data_sorted[(n1)//2])
else:
    Median=data_sorted[((n1)//2)+1]
print("The median of the data is : ", float(Median))
```


OUTPUT-41

```
Enter the data separated by comma  :
12,321,23,132,231,231,1,1,32,32,22,4,354,34,34,32,22
The length of Given Data is :  17
The sum of the Number is  1518.0
The Mean of the data is :  89.29411764705883
The ascending order of the data is  :   [1.0, 1.0, 4.0, 12.0, 22.0, 22.0, 23.0, 32.0,
32.0, 32.0, 34.0, 34.0, 132.0, 231.0, 231.0, 321.0, 354.0]
The median of the data is :  32.0
```

PROGRAM-42

```
#PyApp to Differentiate Domain & User Name From Email IDs and Represent in Tuple
import datetime
T1=[]
T2=[]
T3=[]
now=datetime.datetime.now()
print(now.strftime(' %A, %dth, %B ,%Y')) #print current date
Student=int(input("How many Students Data Needed to be Entered :  "))\
for a in range(1,Student+1):
    Email=input(" Enter Your Email ID :  ")
    T1.append(Email)
    name,domain=Email.split("@")
    T2.append(name)
    T3.append(domain)
    print ( " Successfully Added " )
T1,T2,T3=tuple(T1),tuple(T2),tuple(T3)
print()
print('Students Email IDs are : '"\n",T1)
print('User Name Tuple',"\n",T2)
print('User Name Tuple',"\n",T3)
```

OUTPUT-42

```
Thursday, 10th, December ,2020

How many Students Data Needed to be Entered :  4
 Enter Your Email ID :  Hello@gmail.com
 Successfully Added
 Enter Your Email ID :  Welcome@yahoo.in
 Successfully Added
 Enter Your Email ID :  Namaskar@SPD.in
 Successfully Added
 Enter Your Email ID :  Ciao@masd.com
 Successfully Added

Students Email IDs are :
 ('Hello@gmail.com', 'Welcome@yahoo.in', 'Namaskar@SPD.in', 'Ciao@masd.com')
User Name Tuple
 ('Hello', 'Welcome', 'Namaskar', 'Ciao')
User Name Tuple
 ('gmail.com', 'yahoo.in', 'SPD.in', 'masd.com')
```

Sources:-

- *Computer Science with Python Class 11- Dhanpat Rai Publications*
- *www.geeksforgeeks.org - Python Modules*
- *Together with Computer Science with Python-Class 11-Rachna Sagar*
- *All In One Computer Science with Python Class 11 –Arihant*
- *www.github.com -Python & supplementary modules*
- *Programs Originally written by Priyanshu Jha _Panipat, Haryana*

THANK YOU