Console Application

2.1 Write a program to print "Hello WT Class".

Code :

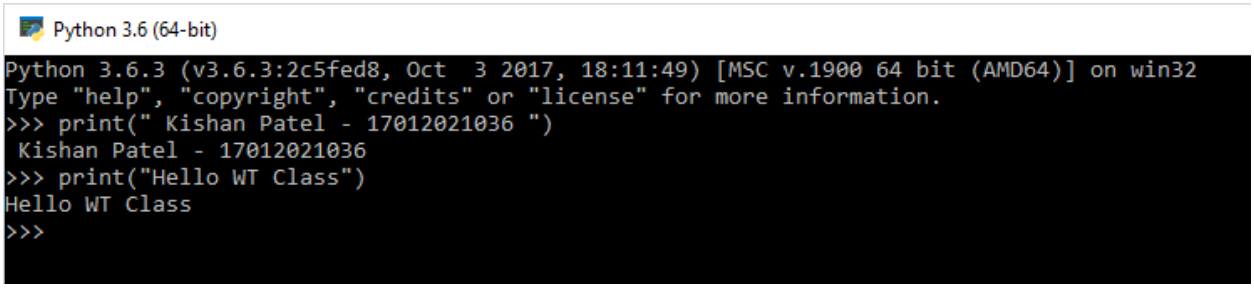
```
print(" Kishan Patel - 17012021036 ")
print("  Hello WT Class  ")
```

OUTPUT

Juputer :

```
Kishan Patel - 17012021036
 Hello WT Class
```

Cmd :



2.2 Write a program to print following

"==========="
Your Name
Your Enrollment No.
Branch: CE/IT
Age:XX
Email:your mail ID
Mobile No: your No.
"==========="

Code :

```
print('''
\t\t\t\t==========================================
\t\t\t\t\t        Kishan patel
\t\t\t\t\t        17012021036
\t\t\t\t\t           IT
\t\t\t\t\t           21
\t\t\t\t\t      pk814013@gmail.com
\t\t\t\t\t        8140137967
\t\t\t\t==========================================
''')
```

OUTPUT

Juputer :

```
==========================================
              Kishan patel
              17012021036
                   IT
                   21
            pk814013@gmail.com
              8140137967
==========================================
```

cmd :

2.3 Write a program to get a string from user and then display it on the console.

Code :

```
print("Kishan Patel - 17012021036")
s=input("enter your Mo:")
print(s)
```

OUTPUT

Jupyter:

```
Kishan Patel - 17012021036
enter your Mo:0123456789
0123456789
```

Cmd:

```
>>> print("kishan patel-17012021036")
kishan patel-17012021036
>>> n=input("enter your mo:")
enter your mo:8140137967
>>> print(n)
8140137967
>>>
```

2.4 Write a program which takes two values as input and give addition, subtraction, division, multiplication between them.

Code :

```
print("Kishan Patel - 17012021036")
a=input("enter 1st value:=")
b=input("enter 2nd value:=")
a=int(a)
b=int(b)
print("sum ans="+str(a+b))
print("sub ans="+str(a-b))
print("div ans="+str(a/b))
print("mul ans="+str(a*b))
```

OUTPUT

Jupyter:

```
Kishan Patel - 17012021036
enter 1st value:=10
enter 2nd value:=20
sum ans=30
sub ans=-10
div ans=0.5
mul ans=200
```

Cmd:

```
>>> num1=raw_input('Enter first number')
Enter first number12
>>> num2=raw_input('Enter second number:')
Enter second number:22
>>> sum1=float(num1)+float(num2)
>>> div1=float(num1)/float(num2)
>>> sub1=float(num1)-float(num2)
>>> mul1=float(num1)*float(num2)
>>> print"the sum is",sum1
the sum is 34.0
>>> print"Division is",div1
Division is 0.545454545455
>>> print"Multiplication is",mul1
Multiplication is 264.0
>>> print"subtraction is",sub1
subtraction is -10.0
>>> print(" kishan Patel- 17012021036")
 kishan Patel- 17012021036
```

2.5 Write a program to calculate the area of circle.

Code :

```
print("Kishan Patel - 17012021036")
print("circle")
r=float(input("enter radius of circle:="))
print("area of circle:="+str(3.14*r*r))
```

OUTPUT

```
circle
enter radius of circle:=10
area of circle:=314.0
```

Cmd:

```
>>> a=float(input("Input the radius of circle:"))
Input the radius of circle:22
>>> pi=3.142857
>>> print"The area of circle"+str(a)+"is:"+str(pi*a**2)
The area of circle22.0is:1521.142788
```

2.6 Write a program to compute the Fahrenheit from centigrade for temperature.

Code :

```
print("Kishan Patel - 17012021036")
print("press 1  for  F to C")
print("press 2  for  C to F")
i=int(input("your choice:="))
if(i==1):
    f=int(input("enter f:="))
    c=(f-32)*(5/9)
    print("C="+str(c))
if(i==2):
    c=int(input("enter c:="))
    ff=(c*(9/5)+32)
    print("f="+str(ff))
```

OUTPUT

```
press 1  for  F to C
press 2  for  C to F
your choice:=2
enter c:=50
f=122.0
```

Cmd:

```
>>> C=input('Enter temprature in farenheit')
Enter temprature in farenheit12
>>> F=C*1.8+32
>>> print"Temprature in degree celsius is",F
Temprature in degree celsius is 53.6
>>>
```

2.7 Write a program to find maximum from three numbers.

Code :

```
print("Kishan Patel - 17012021036")
print("********** max out of Three **********")
a=int(input("enter value of a:="))
b=int(input("enter value of b:="))
c=int(input("enter value of c:="))

if(a>b and a>c):
    print(""+str(a)+" is greter Number")
elif(b>c and b>a):
    print(""+str(b)+" is greter Number")
elif(c>a and c>b):
    print(""+str(c)+" is  greter Number")
```

OUTPUT

```
Kishan Patel - 17012021036
********* max out of Three **********
enter value of a:=10
enter value of b:=20
enter value of c:=30
30 is  greter Number
```

Cmd:

```
>>> num1 = float(input("Enter first number: "))
Enter first number: 12
>>> num2 = float(input("Enter second number: "))
Enter second number: 22
>>> num3 = float(input("Enter third number: "))
Enter third number: 10
>>> if (num1 > num2) and (num1 > num3):
...     largest = num1
... elif (num2 > num1) and (num2 > num3):
...     largest = num2
... else:
...     largest = num3
...
>>> print("The largest number is",largest)
('The largest number is', 22.0)
>>>
```

2.8 Write a program to demonstrate trigonometric functions of sin, cosin and tan of given degree.

Code :

```
print("Kishan Patel - 17012021036")
print("********** trigonometric **********")
import math
d=int(input("enter Dgree:"))
print("sin :"+str(math.sin(math.radians(d))))
print("cos :"+str(math.cos(math.radians(d))))
print("tan :"+str(math.tan(math.radians(d))))
```

OUTPUT

```
Kishan Patel - 17012021036
********** trigonometric **********
enter Dgree:90
sin :1.0
cos :6.123233995736766e-17
tan :1.633123935319537e+16
```

Cmd:

```
>>> import math
>>> print "cos(3) : ",  math.cos(3)
cos(3) :  -0.9899924966
>>> print "Sin(3) : ",  math.sin(3)
Sin(3) :  0.14112000806
>>> print "Tan(3) : ",  math.tan(3)
```

2.9 Write a program to check whether entered number is even or odd

Code :

```
print("Kishan Patel - 17012021036")
n=input("enter any number:=")
n=int(n)
if(n%2==0):
   print("Even Number")
else:
   print("Odd Number")
```

OUTPUT

```
Kishan Patel - 17012021036
enter any number:=10
Even Number
```

Cmd:

```
>>> A=input('Enter a number')
Enter a number12
>>> if(A%2==0):
...     print('Entered number is even')
... else:
...     print('Entered number is odd')
...
Entered number is even
```

2.10 Write a program to find the sum of digits of given number.

Code :

```
print("Kishan Patel - 17012021036")
n=int(input("enter any Number:="))
s=0
while(n>0):
    x=n%10
    s=s+x
    n=int(n/10)
print("sum="+str(s))       print("Kishan Patel - 17012021036")
print("********** using inbuilt function **********")
import math
n=int(input("enter any value:="))
print(""+str(math.factorial(n)))
```

OUTPUT

```
Kishan Patel - 17012021036
enter any Number:=151
sum=7
```

Cmd:

```
>>> n=int(input("Enter a number:"))
Enter a number:44
>>> tot=0
>>> while(n>0):
...     dig=n%10
...     tot=tot+dig
...     n=n//10
...
>>> print("The total sum of digits is:",tot)
('The total sum of digits is:', 8)
```

2.11 Write a program to find the factorial of a given number. (1. Using inbuilt math function 2. using loop)

Code :

```
print("Kishan Patel - 17012021036")
print("********** using inbuilt function **********")
import math
n=int(input("enter any value:="))
print(""+str(math.factorial(n)))
```

OUTPUT

```
Kishan Patel - 17012021036
enter any value:=5
120
```

```
print("Kishan Patel - 17012021036")
print("********** using Loop **********")
import math
fac=1
n=int(input("enter any value:="))
while(n>=1):
    fac=fac*n
    n=n-1
print("factorial:="+str(fac))
```

OUTPUT

```
Kishan Patel - 17012021036
********** using Loop **********
enter any value:=10
factorial:=3628800
```

Cmd:

```
>>> num=int(raw_input("Enter a number"))
Enter a number5
>>> n=1
>>> while num>0:
...     n=n*num
...     num=num-1
...
>>> print "Factorial of the given number is ",n
Factorial of the given number is  120
>>>
```

2.12 Write a program to check if number is prime or not.

Code :

```
print("Kishan Patel - 17012021036")
n=int(input("enter any number:="))
f=0
for i in range(2,n):
   if(n%i==0):
      f=0
      break
   else :
      f=1

if(f==0):
    print("not prime")
if(f==1):
    print("prime")
```

OUTPUT

```
Kishan Patel - 17012021036
enter any number:=6
not prime
```

Cmd:

```
>>> num=int(raw_input("Enter a number"))
Enter a number12
>>> flag=0
>>> for i in range(2,num-1):
...     if(num%i==0):
...         flag=1
...         break
...
>>> if(flag==0):
...     print('Entered number is not prime')
... else:
...     print('Entered number is prime')
...
Entered number is prime
>>>
```

2.13 Write a program to check if number is Armstrong.

Code :

```
print("Kishan Patel - 17012021036")
n=int(input("enter any number:="))
temp=n
sum=0
while(n>0):
    r=n%10
    sum=sum+r*r*r
    n=int(n/10)
if(temp==sum):
   print("given number is armstrong")
else :
   print("not armstrong")
```

OUTPUT

```
Kishan Patel - 17012021036
enter any number:=10
not armstrong
```

Cmd:

```
>>> num = int(input("Enter a number: "))
Enter a number: 77
>>> sum1 = 0
>>> temp = num
>>> while temp > 0:
...     digit = temp % 10
...     sum1 += digit ** 3
...     temp /= 10
...
>>> if num == sum1:
...     print num,"is an Armstrong number"
... else:
...     print num,"is not an Armstrong number"
...
77 is not an Armstrong number
```

2.14 Write a program to check if entered character is a digit, upper case character or lower case character.

Code :

```
print("Kishan Patel - 17012021036")
n=input("enter any number:=")
if(n>='A'and n<='Z'):
```

```
   print("upper case ")
if(n>='a' and n<='z'):
    print("lower case")
if(n>'0' and n<'9'):
    print("number")
else:
   print("special character")
```

OUTPUT

```
Kishan Patel - 17012021036
enter any number:=%
special character
```

```
>>> a=raw_input('Enter a character')
Enter a charactera
>>> if(a>='0' and a<='9'):
...       print"digit"
... elif(a>='A' and a<='Z'):
...       print"Upper case"
... elif(a>='a' and a<='z'):
...       print"Lower case"
... else:
...       print"This is not alpha numeric"
...
Lower case
>>>
```

2.15 Write a program to display followings:

1
1 2
1 2 3
1 2 3 4
1 2 3 4 5

Code :

```
print("Kishan Patel - 17012021036")
n=int(input("enter any number:="))

for i in range(1,n):
   k=1
   for j in range(1,i+1):
      print(" "+str(k),end="")
```

```
    k=k+1
print("")
```

OUTPUT

```
Kishan Patel - 17012021036
enter any number:=6
 1
 1 2
 1 2 3
 1 2 3 4
 1 2 3 4 5
```

```
>>> a=input('Enter a number')
Enter a number5
>>> for i in range(1, a + 2):
...     for j in range(1,i):
...         print(j),
...     print("\n")
...


1

1 2

1 2 3

1 2 3 4

1 2 3 4 5
```

2.16 Write a program that reads a number from 1 to 7 and accordingly it should display Monday to Sunday.(using if..elif)

Code :

```
print("Kishan Patel - 17012021036")
n=int(input("enter any number:="))
if(n==1):
   print("Monday")
elif(n==2):
   print("Tuesday")
elif(n==3):
   print("Wednesday")
elif(n==4):
   print("Thursday")
elif(n==5):
   print("Friday")
```

```
elif(n==6):
   print("Saturday")
elif(n==7):
   print("Sunday")
```

OUTPUT

```
Kishan Patel - 17012021036
enter any number:=2
tuesday
```

```
>>> a=input('Enter a number')
Enter a number2
>>> print a
2
>>> if(a==1):
...     print("Monday")
... elif(a==2):
...     print("Tuesday")
... elif(a==3):
...     print("Wednesday")
... elif(a==4):
...     print("Thursday")
... elif(a==5):
...     print("Friday")
... elif(a==6):
...     print("Saturday")
... elif(a==7):
...     print("Sunday")
... else:
...     print("Invalid Number")
...
Tuesday
>>>
```

2.17 Write a program to reverse the given number.

Code :

```
print("Kishan Patel - 17012021036")
n=int(input("enter any number:="))
rev=0
if(n%10==0):
    s=str(n)
    s=s[::-1]
    print(s)
else:
 while(n>0):
```

```
    r=n%10
    rev=rev*10+r
    n=int(n/10)
print(""+str(rev))
```

OUTPUT

```
Kishan Patel - 17012021036
enter any number:=10000
00001
0
```

```
>>> a=input('Enter a number')
Enter a number1234
>>> print a
1234
>>> rev=0
>>> while(a>0):
...     b=a%10
...     rev=(rev*10)+b
...     a=a/10
...
>>> print'Reverse number is:',rev
Reverse number is: 4321
```

2.18 Write a program to check if entered character is a digit, upper case character or lower case character.

Using inbuilt function

Code :

```
print("Kishan Patel - 17012021036")
num = input('Enter a character :')
i=ord(num)
if(num.isdigit()):
   print("Entered number is digit")
elif(num.islower()):
   print('Entered character is lower case')
elif(num.isupper()):
   print('entered character is upper case')
else:
   print ("Invalid number")
```

OUTPUT

```
Kishan Patel - 17012021036
Enter a character :K
entered character is upper case
```

```
>>> num = raw_input('Enter a character')
Enter a charactera
>>> i=ord(num)
>>> if(num.isdigit()):
...     print('Entered number is digit')
... elif(num.islower()):
...     print('Entered character is lower case')
... elif(num.isupper()):
...     print('entered character is upper case')
... else:
...     print 'Invalid number'
...
Entered character is lower case
```

2.19 Write a python code to replace a substring of given length with new substring

Code :

```
print("Kishan Patel - 17012021036")
a=input('Enter a string')
print(a)
b=input('Enter a string where you want to change:')
print(b)
c=input('Enter new string :')
print(c)
d=a.replace(b, c)
print('replace string:',d)
```

OUTPUT

```
Kishan Patel - 17012021036
Enter a stringkd patel
kd patel
Enter a string where you want to change:kd
kd
Enter new string :kishan
kishan
replace string: kishan patel
```

```
...
>>>
>>> print("kishan patel - 17012021036")
kishan patel - 17012021036
>>> a=input('Enter a string')
Enter a string kd patel
>>> b=input('Enter a string where you want to change:')
Enter a string where you want to change: kd
>>> c=input('Enter new string :')
Enter new string :kishan
>>> d=a.replace(b, c)
>>> print('replace string:',d)
replace string: kishan patel
>>>
```

2.20 Enter the following statements into the interpreter and note which ones produce an error, give reason for error:

>>> n = 7
>>> 7 = n
>>> n = 5 + 2
>>> n = 5 + n
>>> n + 5 = n
>>> n = y
>>> print n
>>> print n + 5
>>> print n + 5 + 2
>>> print n = 5
>>> print 7 + 5
>>> print n, 7+5, n+7

OUTPUT

```
>>> n=7
>>> 7=n
  File "<stdin>", line 1
SyntaxError: can't assign to literal
>>> n=5+2
>>> n=5+n
>>> n+5=n
  File "<stdin>", line 1
SyntaxError: can't assign to operator
>>> n=y
Traceback (most recent call last):
  File "<stdin>", line 1, in <module>
NameError: name 'y' is not defined
>>> print n
12
>>> print n+5
17
>>> print n+5+2
19
>>> print n=5
  File "<stdin>", line 1
    print n=5
          ^
SyntaxError: invalid syntax
>>> print 7+5
12
>>> print n,7+5,n+7
12 12 19
```

Expression	Output	Remarks
n=7	7	No error
7=n	Error	Value can't assign to variable directly
N=5+2	7	No error
N=5+n	12	No error
N=y	Error	Y must be defined
Print n	12	No error
Print n+5	17	No error
Print n+5+2	19	No error
Print n=5	Error	Print has no assignment
Print 7+5	12	No error
Print n,7+5,n+7	12,12,19	No error

2.21 Try to evaluate the following numerical expressions in your head, and put the answer beside each one, then use the Python interpreter to check your results:

>>> 5 % 2
>>> 9 % 5
>>> 1 5 % 12
>>> 12 % 15
>>> 6 % 6
>>> 0 % 7
>>> 7 % 0

OUTPUT

```
>>> 5%2
1
>>> 9%5
4
>>> 15%12
3
>>> 12%15
12
>>> 6%6
0
>>> 0%7
0
>>> 7%0
Traceback (most recent call last):
  File "<stdin>", line 1, in <module>
ZeroDivisionError: integer division or modulo by zero
>>>
```

5%2	1	No error
9%5	4	No error
15%12	3	No error
12%15	12	No error
6%6	0	No error
0%7	0	No error
7%0	Error	Can’t modulo by zero

2.22 In a python script, assign a value greater than 1000 to the variable x e.g. 1468. Write code which will assign to a variable xrounded the value of x rounded down to the nearest 100 e.g. for x of 1468, xrounded will be 1400. Your code should display both values. Note that your code should work for any value of x

Code :

```
print("Kishan Patel - 17012021036")
n=int(input("enter any number:"))
if(n>1000):
   i=n//100
   n=i*100
print(n)
```

OUTPUT

```
Kishan Patel - 17012021036
enter any number:1486
1400
```

```
>>> a = input('Enter a number: ')
Enter a number: 1020
>>> if(a>1000):
...     i=a/100
...     a=i*100
...
>>> print a
1000
```

2.23 WAP to print the appropriate message according to the average Marks:

Average Marks	Grade
90 to 100	A+
80 to 89	A
60 to 79	B
50 to 59	B+
40 to 49	C
0 to 39	

F

Code :

```
sub1=int(input("Enter marks of the OOAD: "))
sub2=int(input("Enter marks of the CN: "))
sub3=int(input("Enter marks of the third DAA: "))
sub4=int(input("Enter marks of the fourth CSA: "))
sub5=int(input("Enter marks of the fifth WT: "))
avg=(sub1+sub2+sub3+sub4+sub4)/5
if(90<=avg<=100):
   print("Grade: A+")
elif(80<=avg<=90):
   print("Grade: A")
elif(70<=avg<=80):
   print("Grade: B+")
elif(60<=avg<=70):
   print("Grade: B")
elif(50<=avg<=60):
   print("Grade: C+")
elif(40<=avg<=50):
   print("Grade: C")
elif(0<=avg<=40):
   print("Grade: F")
else:
   print("Please enter valid marks")
```

OUTPUT

```
Kishan Patel - 17012021036
Enter marks of the OOAD: 100
Enter marks of the CN: 100
Enter marks of the third DAA: 100
Enter marks of the fourth CSA: 100
Enter marks of the fifth WT: 100
Grade: A+
```

```
>>> sub1=int(input("Enter marks of the OOAD: "))
Enter marks of the OOAD: 88
>>> sub2=int(input("Enter marks of the CN: "))
Enter marks of the CN: 96
>>> sub3=int(input("Enter marks of the DAA: "))
Enter marks of the DAA: 77
>>> sub4=int(input("Enter marks of the CSA: "))
Enter marks of the CSA: 87
>>> sub5=int(input("Enter marks of the WT: "))
Enter marks of the WT: 99
>>> avg=(sub1+sub2+sub3+sub4+sub4)/5
>>> if(90<=avg<=100):
...     print("Grade: A+")
... elif(80<=avg<=90):
...     print("Grade: A")
... elif(70<=avg<=80):
...     print("Grade: B+")
... elif(60<=avg<=70):
...     print("Grade: B")
... elif(50<=avg<=60):
...     print("Grade: C+")
... elif(40<=avg<=50):
...     print("Grade: C")
... elif(0<=avg<=40):
...     print("Grade: F")
... else:
...     print("Please enter valid marks")
...
Grade: A
>>>
```