LAB -2

**1. Print largest and smallest values out of two.**

print( "Name :KanavShahPatel")

print("Roll Number : 24BEE107")

deflargest\_and\_smallest\_of\_two(a,b):

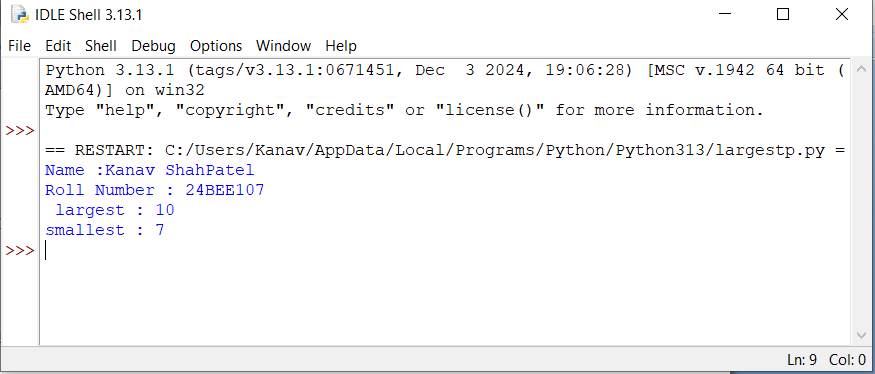
largest = max(a,b)

smallest = min(a,b)

print(" largest :",largest )

print("smallest :",smallest)

largest\_and\_smallest\_of\_two(7,10)



**2. Print largest and smallest values out of three.**

print( "Name :KanavShahPatel")

print("Roll Number : 24BEE107")

deflargest\_and\_smallest\_of\_three(a,b,c):

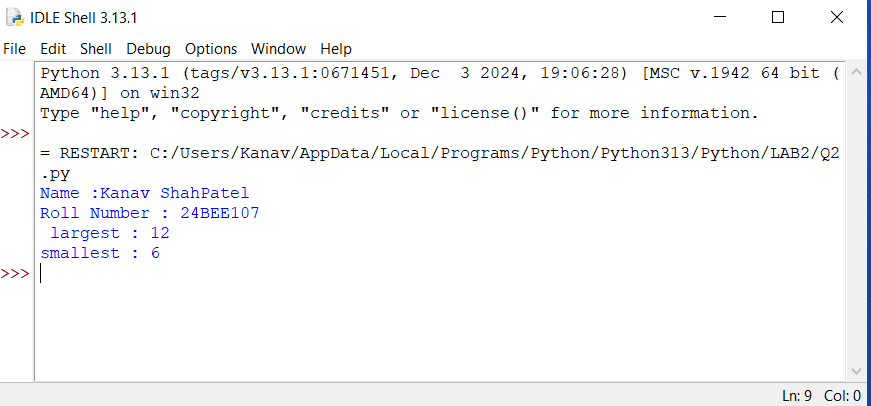
largest = max(a,b,c)

smallest = min(a,b,c)

print(" largest :",largest )

print("smallest :",smallest)

largest\_and\_smallest\_of\_three(6,12,10)



**3. Check whether a given number is odd or even.**

print( "Name :KanavShahPatel")

print("Roll Number : 24BEE107")

defcheck\_odd\_even(number):

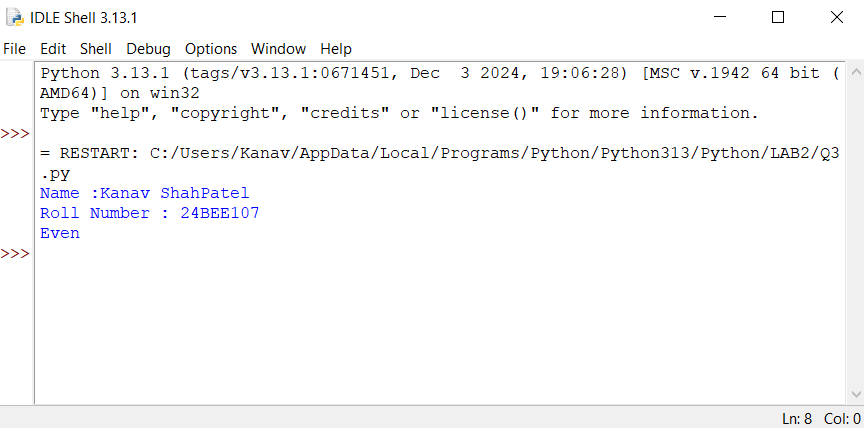
if number % 2 == 0:

print("Even")

else:

print("Odd")

check\_odd\_even(8)



**4. Check whether a given number is divisible by 10 or not.**

print( "Name :KanavShahPatel")

print("Roll Number : 24BEE107")

def check\_divisible\_by\_10(number):

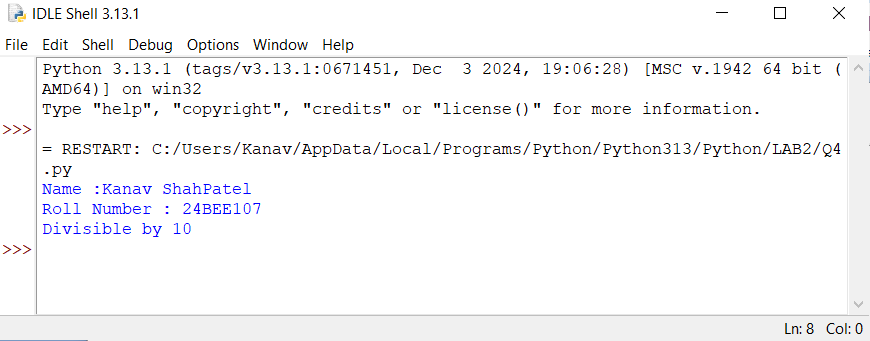
if number % 10== 0:

print("Divisible by 10")

else:

print( " Not divisible by 10")

check\_divisible\_by\_10(50)



**5. Accept age of a person. If age is less than 18, print minor otherwise Major.**

print( "Name :KanavShahPatel")

print("Roll Number : 24BEE107")

defcheck\_age(age):

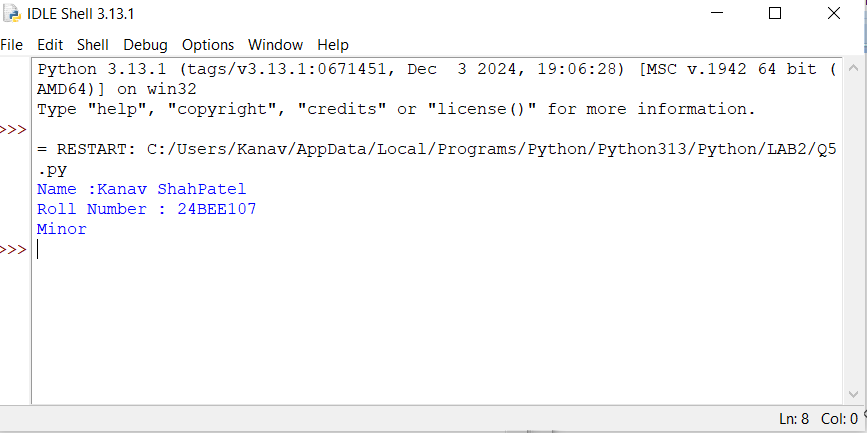
if age <18:

print("Minor")

else:

print( "Major ")

check\_age(17)



**6. Accept a number from the user. And print number of digits in it.**

print( "Name :KanavShahPatel")

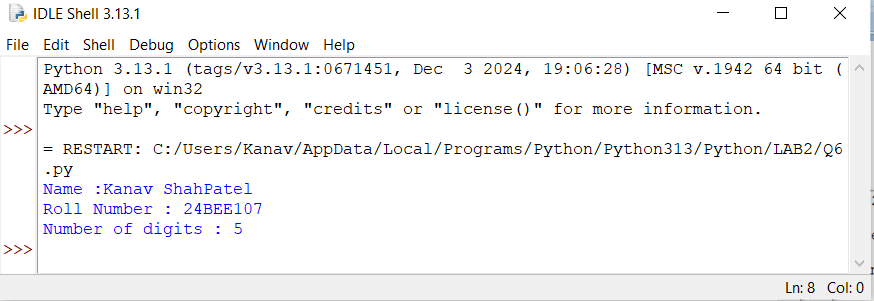
print("Roll Number : 24BEE107")

defcount\_digits(number):

digits =len(str(number))

print("Number of digits :",digits)

count\_digits(12345)



**7. Accept a year value from the user. Check whether it is a leap year or not.**

print( "Name :KanavShahPatel")

print("Roll Number : 24BEE107")

defcheck\_leap\_year(year):

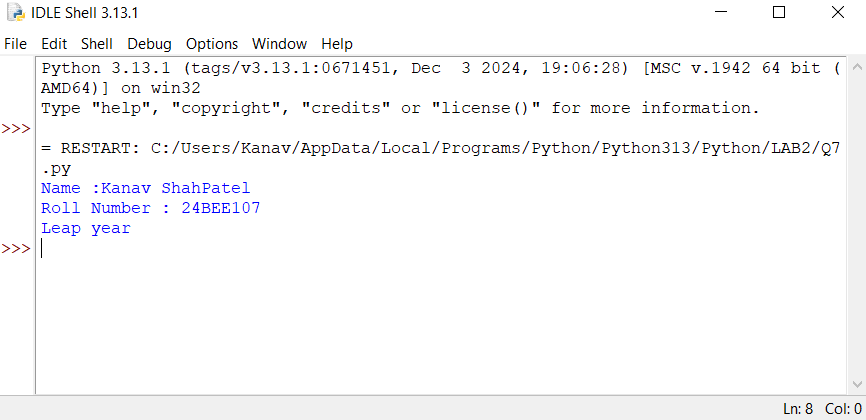
if ( year % 4 ==0 and year %100 !=0) or (year %400 ==0):

print("Leap year")

else:

print( " Not a leap year ")

check\_leap\_year(2020)



**8. Check whether a triangle is valid or not, when the three angles of the triangle are entered through the keyboard. A triangle is valid if the sum of all the three angles is equal to 180 degrees.**

print( "Name :KanavShahPatel")

print("Roll Number : 24BEE107")

defcheck\_triangle\_validity(angle1,angle2 ,angle3):

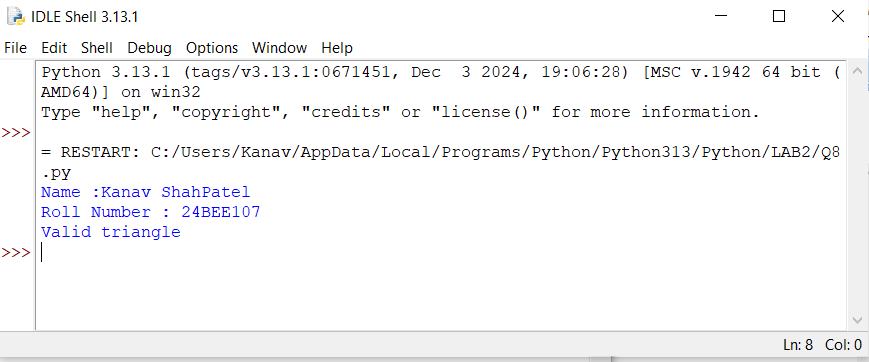
if angle1 +angle2 +angle3 == 180:

print("Valid triangle")

else:

print( " Invalid triangle ")

check\_triangle\_validity( 60,60,60)



**9. Print absolute value of a given number.**

print( "Name :KanavShahPatel")

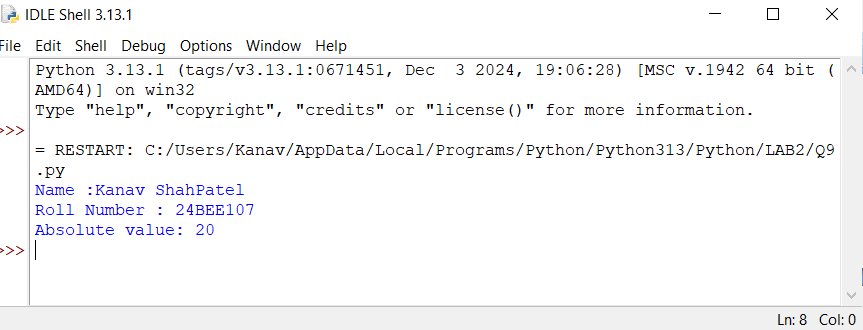
print("Roll Number : 24BEE107")

defabsolute\_value(number):

abs\_value =abs(number)

print("Absolute value:",abs\_value)

absolute\_value(-20)



**10. Given the length and breadth of a rectangle, write a program to find whether theare of the rectangle is greater than its perimeter.**

print( "Name :KanavShahPatel")

print("Roll Number : 24BEE107")

defcompare\_area\_perimeter(length,breadth):

area =length\*breadth

perimeter=2\*(length+breadth)

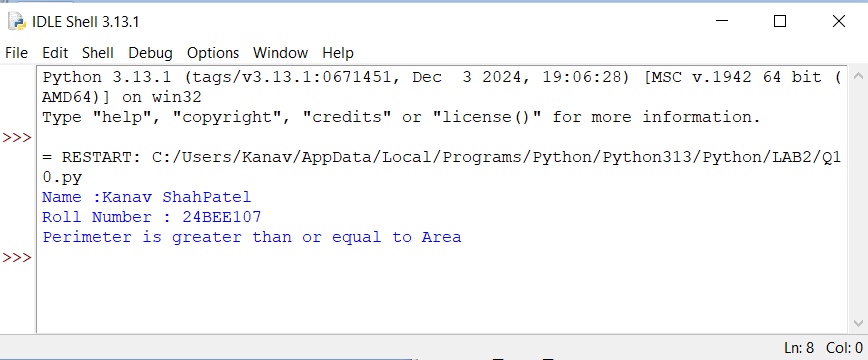
if area >perimeter:

print("Perimeter is greater than or equal to Area ")

else:

print("Area is greater than or equal to Perimeter ")

compare\_area\_perimeter(12,8)



**11. Given three points (x1,y1), (x2,y2) and (x3,y3), check if all the three points fall on one straight line.**

print( "Name :KanavShahPatel")

print("Roll Number : 24BEE107")

defcheck\_collinear(x1,y1,x2,y2,x3,y3):

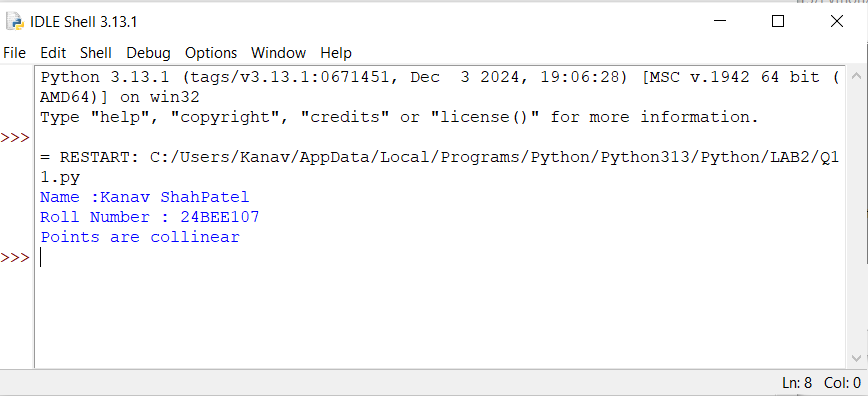
if (y2-y1)\*(x3-x2) == (y3-y2)\*(x2-x1):

print("Points are collinear")

else:

print("Points are not collinear")

check\_collinear(1,1,2,2,3,3)



12. Given the coordinates (x,y) of center of a circle and its radius, determine whether a point lies inside the circle, on the circle or outside the circle. (Hint: Use sqrt( ), pow( ) )

print( "Name :KanavShahPatel")

print("Roll Number : 24BEE107")

import math

defcheck\_point\_circle(x,y,circle\_x,circle\_y,radius):

distance = math.sqrt((x-circle\_x)\*\*2+(y-circle\_y)\*\*2)

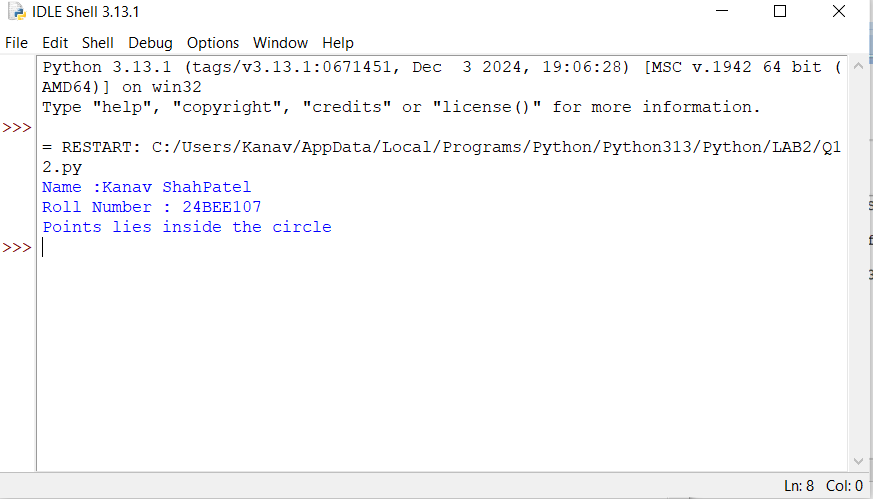
if distance < radius:

print("Points lies inside the circle")

else:

print("Points lies outside the circle")

check\_point\_circle(1,1,0,0,5)



**13. Convert number 0 to 19 to its equivalent words. E.g. 0  zero, 19nineteen.**

print( "Name :KanavShahPatel")

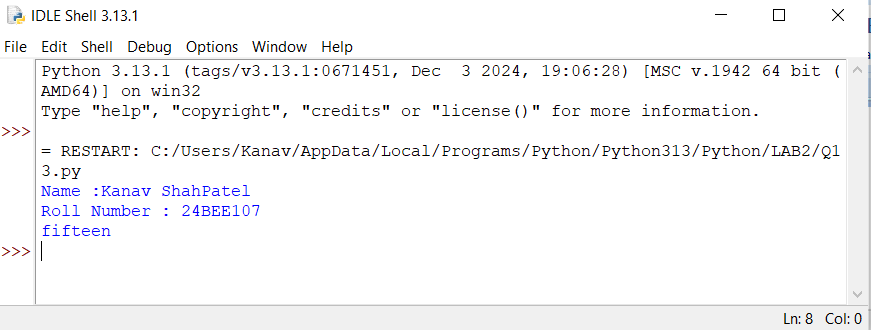
print("Roll Number : 24BEE107")

defnumber\_to\_words(number):

words =[ "zero","one","two","three","four","five","six","seven","eight","nine","ten","eleven","twelve","thirteen","fourteen","fifteen","sixteen","seventeen","eighteen","nineteen"]

print(words[number])

number\_to\_words(15)



**14. Accept marks of three subjects. Print total and average along with whether a candidate has passed or fail. If student secures <= 39 marks in any subject, consider him as fail. Also assigned a subject wise grade .**

print("Roll Number : 24BEE107")

defcalculate\_results(marks1,marks2,marks3):

total =marks1 + marks2 + marks3

average=total/3

print("Total Marks:",total)

print("Average Marks:",average)

if marks1 <=39 or marks2 <=39 or marks3 <=39:

print("Result:Fail ")

else:

print("Result:Pass")

for marks in [marks1,marks2,marks3]:

if marks <=39:

grade ='F'

elif 40 <=marks <=44:

grade ='P'

elif 45 <=marks <=49:

grade ='C'

elif 50 <=marks <=54:

grade ='B'

elif 55 <=marks <=59:

grade ='B+'

elif 60<=marks <=69:

grade ='A'

elif 70 <=marks <=79:

grade ='A+'

else:

grade ='O'

print(f"Marks:{marks},Grade:{grade}")

calculate\_results(65,75,85)

