Name : Deshmukh Shubham Kailas
Roll No: 11

Lab Assignment 1

SET A

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# Python Program to find the area of triangle

# 1.Take inputs from the user
a = float(input("Enter first side: "))
b = float(input("Enter second side: "))
c = float(input("Enter third side: "))

# calculate the semi-perimeter
s = (a + b + c) / 2


# calculate the area
area = (s * (s - a) * (s - b) * (s - c)) ** 0.5
print("The area of the triangle: ", area)


# 2.Write Python program to Swap two Number

# Take inputs from the user
x = int(input("Enter x : "))
y = int(input("Enter y : "))

x, y = y, x
print("x =", x)
print("y =", y)

# 3.Write python program to generate a random number

# importing the random module
import random

# Take inputs from the user
x = int(input("Enter starting No.  : "))
y = int(input("Enter ending No. : "))

print("Random Number:", random.randint(x, y))
```

SET B

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# 1.Write a python program to check if a number is +ve, -ve or zero..

num = float(input("Enter a number: "))

if num > 0:
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    print("Positive number")

elif num == 0:

    print("Zero")

else:

    print("Negative number")


# 2.Write a python program to check if a number is odd or even.

n = int(input("Enter Number:"))

if (n % 2) == 0:

    print(n, "is an even number")

else:

    print(n, "is odd number")

# 3.Write a python program to check if a number is Prime Number or not.

num = int(input("Enter start Number:"))
flag = 0
if num > 1:
    for i in range(2, num):
        if (num % i) == 0:
            flag = 1
            break
if flag:
    print(num, "is not a number prime")

else:
    print(num, "is a prime number")


# 4.Write python program to check Armstrong Number

n = int(input("Enter Number:"))
num = n
sum = 0
while n > 0:
    rem = n % 10
    sum = sum + rem * rem * rem
    n = n // 10
if num == sum:
    print(num, "is an armstrong")
else:
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    print(num, "is not an armstrong")

#5.Write python program to find the factorial of a number

# To take input from the user
num = int(input("Enter a number: "))
factorial = 1

# check if the number is negative, positive or zero
if num < 0:
   print("Sorry, factorial does not exist for negative numbers")
elif num == 0:
   print("The factorial of 0 is 1")
else:
   for i in range(1,num + 1):
       factorial = factorial*i
   print("The factorial of",num,"is",factorial)
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PROGRAMS FOR PRACTISE:

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#1.Write python program to convert km to Miles.

# Taking kilometers input from the user
kilometers = float(input("Enter value in kilometers: "))

# conversion factor
conv_fac = 0.621371

# calculate miles
miles = kilometers * conv_fac
print('kilometers to miles:',miles)


#2. Write python program to convert  celsius to fahrenheit.
celsius = float(input("Enter temperature in celsius: "))

fahrenheit = (celsius * 9 / 5) + 32

print("Temperature in fahrenheit is:", fahrenheit)


# 3.Write a python program to check if year is a leap year or not

# To get year (integer input) from the user
year = int(input("Enter a year: "))

if (year % 4) == 0:
    if (year % 100) == 0:
        if (year % 400) == 0:
            print(year, "is Leap year")
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        else:
            print(year, "is not a leap year")
    else:
        print(year, "is leap year")
else:
    print(year, "is not a leap year")

# 4.Write python program to check Prime Number between range

start = int(input("Enter start Number:"))
end = int(input("Enter end Number:"))

for n in range(start, end + 1):
    flag = 0
    for i in range(2, n):
        if (n % i) == 0:
            flag = 1
            break
    if flag == 0:
        print(n)


# 5.Write a python program to display the Fibonacci sequence

nterms = int(input("How many terms? "))

# first two terms
n1, n2 = 0, 1
count = 0

# check if the number of terms is valid
if nterms <= 0:
    print("Please enter a positive integer")

# if there is only one term, return n1
elif nterms == 1:
    print("Fibonacci sequence upto", nterms, ":")
    print(n1)
# generate fibonacci sequence

else:
    print("Fibonacci sequence upto:", nterms, ":")
    while count < nterms:
        print(n1)
        nth = n1 + n2
        # update values
        n1 = n2
        n2 = nth
        count += 1
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# 6.Write python program to check Armstrong numbers in a certain
interval

lower = int(input("Enter lower range: "))
upper = int(input("Enter upper range: "))

for num in range(lower, upper + 1):
    order = len(str(num))
    sum = 0

    temp = num
    while temp > 0:
        digit = temp % 10
        sum += digit ** order
        temp //= 10

    if num == sum:
        print(num)


# 7.Write python Program to Find the Sum of Natural Numbers
num = int(input("Enter a number: "))

if num < 0:
    print("Enter a positive number")
else:
    sum = 0
    # use while loop to iterate un till zero
    while num > 0:
        sum += num
        num -= 1
    print("The sum is : ", sum)

# 8.Write python program to print Reverse Number

n = int(input("Enter Number:"))
rev = 0

while n > 0:
    rem = n % 10
    rev = rev * 10 + rem
    n = n // 10

print("Reverse of number is:", rev)

# 9.Write python Program to Find Sum of Digit

n = int(input("Enter Number:"))
sum = 0
while n > 0:
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    rem = n % 10
    sum += rem
    n = n // 10
print("Sum of Digit:", sum)


# 10.Write python Program to for String search

string = "I am DSK"
print("String Index No:")
print(string.find("DSK"))
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