C5e1

**aim**

**sourcecode**

import calendar

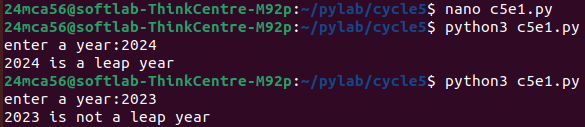
years=int(input("enter a year:"))

if calendar.isleap(years):

print(f"{years} is a leap year")

else:

print(f"{years} is not a leap year")

****

**c5e2**

**aim**

**source code**

import datetime

current\_datetime = datetime.datetime.now()

print(f"Current date and time: {current\_datetime}")

current\_year = current\_datetime.year

print(f"Current Year: {current\_year}")

current\_month = current\_datetime.month

print(f"Month of the Year: {current\_month}")

week\_number = current\_datetime.isocalendar()[1]

print(f"Week number of the Year: {week\_number}")

weekday = current\_datetime.weekday()

weekdays = ['Monday', 'Tuesday', 'Wednesday', 'Thursday', 'Friday', 'Saturday', 'Sunday']

print(f"Weekday of the Week: {weekdays[weekday]}")

day\_of\_year = current\_datetime.timetuple().tm\_yday

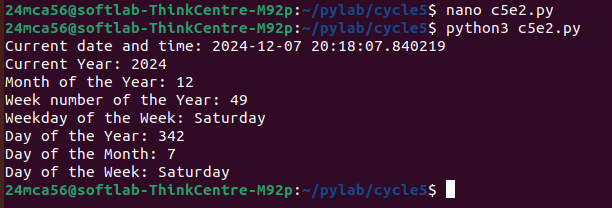
print(f"Day of the Year: {day\_of\_year}")

day\_of\_month = current\_datetime.day

print(f"Day of the Month: {day\_of\_month}")

day\_of\_week = current\_datetime.strftime('%A')

print(f"Day of the Week: {day\_of\_week}")

****

**c5e3**

**aim**

**sourcecode**

import datetime

today = datetime.date.today()

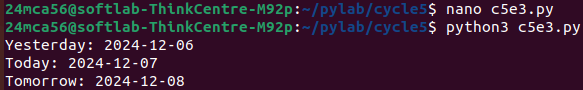
yesterday = today - datetime.timedelta(days=1)

tomorrow = today + datetime.timedelta(days=1)

print(f"Yesterday: {yesterday}")

print(f"Today: {today}")

print(f"Tomorrow: {tomorrow}")

****

**c5e4**

**aim**

**sourcecode**

import palindrome

def longest\_palindromic\_substring(s: str) -> str:

longest = ""

for i in range(len(s)):

for j in range(i + 1, len(s) + 1):

substring = s[i:j]

if palindrome.is\_palindrome(substring) and len(substring) > len(longest):

longest = substring

return longest

input\_string = input("Enter a string: ")

result = longest\_palindromic\_substring(input\_string)

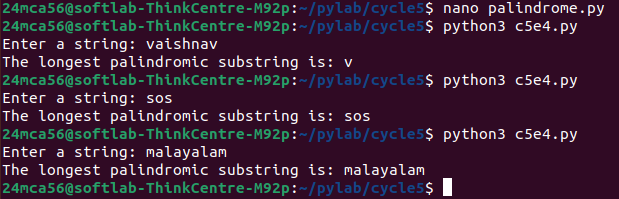
print(f"The longest palindromic substring is: {result}")

**palindrome.py**

def is\_palindrome(s:str)->bool:

s=s.replace("","").lower()

return s==s[::-1]

****

**c5e5**

**aim**

**sourcecode**

from graphics.rectangle import area as rect\_area, perimeter as rect\_perimeter

from graphics.circle import area as circ\_area, perimeter as circ\_perimeter

from graphics.graphics3d.cuboid import area as cuboid\_area, perimeter as cuboid\_perimeter

from graphics.graphics3d.sphere import area as sphere\_area, perimeter as sphere\_perimeter

def main():

while True:

print("\nChoose a shape to calculate area and perimeter:")

print("1. Rectangle")

print("2. Circle")

print("3. Cuboid")

print("4. Sphere")

print("5. Exit")

choice = input("Enter your choice (1-5): ")

if choice == "1":

length = float(input("Enter the length of the rectangle: "))

breadth = float(input("Enter the breadth of the rectangle: "))

print("Rectangle Area:", rect\_area(length, breadth))

print("Rectangle Perimeter:", rect\_perimeter(length, breadth))

elif choice == "2":

radius = float(input("Enter the radius of the circle: "))

print("Circle Area:", circ\_area(radius))

print("Circle Perimeter:", circ\_perimeter(radius))

elif choice == "3":

length = float(input("Enter the length of the cuboid: "))

breadth = float(input("Enter the breadth of the cuboid: "))

height = float(input("Enter the height of the cuboid: "))

print("Cuboid Area:", cuboid\_area(length, breadth, height))

print("Cuboid Perimeter:", cuboid\_perimeter(length, breadth, height))

elif choice == "4":

radius = float(input("Enter the radius of the sphere: "))

print("Sphere Area:", sphere\_area(radius))

print("Sphere Perimeter (Circumference):", sphere\_perimeter(radius))

elif choice == "5":

print("Exiting the program.")

break

else:

print("Invalid choice. Please select a valid option.")

if \_\_name\_\_ == "\_\_main\_\_":

main()

**graphics**

**circle.py**

def area(radius):

from math import pi

return pi \* radius \* radius

def perimeter(radius):

from math import pi

return 2 \* pi \* radius

**rectangle.py**

def area(length, breadth):

return length \* breadth

def perimeter(length, breadth):

return 2 \* (length + breadth)

**graphics3d**

**cuboid.py**

def area(length, breadth, height):

return 2 \* (length \* breadth + breadth \* height + height \* length)

def perimeter(length, breadth, height):

return 4 \* (length + breadth + height)

**sphere.py**

def area(radius):

from math import pi

return 4 \* pi \* radius \* radius

def perimeter(radius):

from math import pi

return 2 \* pi \* radius

