Darshan UNIVERSITY

योग: कर्मसु कौशलम्

Python Programming - 2301CS404

Lab - 11

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4B 448 8th batch

Modules

01) WAP to create Calculator module which defines functions like add, sub,mul and div.

Create another .py file that uses the functions available in Calculator module.

In [2]:
```python
def add(a, b):
    return a + b

def sub(a, b):
    return a - b

def mul(a, b):
    return a * b

def div(a, b):
    if b == 0:
        return "Error! Division by zero."
    return a / b
```

02) WAP to pick a random character from a given String.

In [1]:
```python
import random

user_string = input("Enter a string: ")

if user_string:
    random_character = random.choice(user_string)
    print(f"Random character from the given string: {random_character}")
else:
    print("String is empty!")
```

```
Random character from the given string: c
```

03) WAP to pick a random element from a given list.

In [3]:
```python
import random

user_list = input("Enter list elements separated by spaces: ").split()

if user_list:
    random_element = random.choice(user_list)
    print(f"Random element from the given list: {random_element}")
else:
    print("List is empty!")
```

```
Random element from the given list: 3
```

04) WAP to roll a dice in such a way that every time you get the same number.

In [4]:
```python
import random

random.seed(10)

fixed_roll = random.randint(1, 6)

print(f"The dice always rolls: {fixed_roll}")
```

```
The dice always rolls: 5
```

05) WAP to generate 3 random integers between 100 and 999 which is divisible by 5.

In [5]:
```python
import random

count = 0
while count < 3:
    num = random.randint(100, 999)
    if num % 5 == 0:
        print(num)
        count += 1
```

```
115
930
135
```

06) WAP to generate 100 random lottery tickets and pick two lucky tickets from it and announce them as Winner and Runner up respectively.

In [6]:
```python
import random

tickets = random.sample(range(100000, 999999), 100)

winner, runner_up = random.sample(tickets, 2)

print(f"Winner Ticket: {winner}")
print(f"Runner-up Ticket: {runner_up}")
```

```
Winner Ticket: 465618
Runner-up Ticket: 300200
```

07) WAP to print current date and time in Python.

In [7]:
```python
from datetime import datetime

current_time = datetime.now()

print("Current Date and Time:", current_time.strftime("%Y-%m-%d %H:%M:%S"))
```

```
Current Date and Time: 2025-03-15 14:12:20
```

08) Subtract a week (7 days) from a given date in Python.

In [8]:
```python
from datetime import datetime, timedelta

given_date = datetime(2025, 3, 15)  # Example date
new_date = given_date - timedelta(days=7)

print("Date after subtracting a week:", new_date.strftime("%Y-%m-%d"))
```

```
Date after subtracting a week: 2025-03-08
```

09) WAP to Calculate number of days between two given dates.

In [9]:
```python
from datetime import datetime

date1 = input("Enter the first date (YYYY-MM-DD): ")
date2 = input("Enter the second date (YYYY-MM-DD): ")

d1 = datetime.strptime(date1, "%Y-%m-%d")
d2 = datetime.strptime(date2, "%Y-%m-%d")

days_difference = abs((d2 - d1).days)

print(f"Number of days between {date1} and {date2}: {days_difference}")
```

```
Number of days between 2024-12-12 and 2024-01-13: 334
```

10) WAP to Find the day of the week of a given date.(i.e. wether it is sunday/monday/tuesday/etc.)

In [10]:
```
from datetime import datetime

date_input = input("Enter a date (YYYY-MM-DD): ")

date_obj = datetime.strptime(date_input, "%Y-%m-%d")

day_of_week = date_obj.strftime("%A")

print(f"The day of the week for {date_input} is: {day_of_week}")
```

```
The day of the week for 2023-08-12 is: Saturday
```

11) WAP to demonstrate the use of date time module.

In [11]:
```
from datetime import datetime, timedelta

now = datetime.now()
print("Current Date and Time:", now.strftime("%Y-%m-%d %H:%M:%S"))

today = datetime.today()
print("Today's Date:", today.strftime("%Y-%m-%d"))

future_date = now + timedelta(days=5)
print("Date after 5 days:", future_date.strftime("%Y-%m-%d"))

past_date = now - timedelta(days=7)
print("Date 7 days ago:", past_date.strftime("%Y-%m-%d"))

day_of_week = now.strftime("%A")
print("Today is:", day_of_week)
```

```
Current Date and Time: 2025-03-15 14:14:29
Today's Date: 2025-03-15
Date after 5 days: 2025-03-20
Date 7 days ago: 2025-03-08
Today is: Saturday
```

12) WAP to demonstrate the use of the math module.

In [12]:
```
import math

num = 25
print("Square root of", num, "is:", math.sqrt(num))

angle = 45
print("Sine of", angle, "degrees is:", math.sin(math.radians(angle)))
print("Cosine of", angle, "degrees is:", math.cos(math.radians(angle)))
print("Tangent of", angle, "degrees is:", math.tan(math.radians(angle)))

num2 = 5
print("Factorial of", num2, "is:", math.factorial(num2))

num3 = 2.7
print("Ceiling of", num3, "is:", math.ceil(num3))
print("Floor of", num3, "is:", math.floor(num3))

print("Value of Pi:", math.pi)
print("Value of Euler's number (e):", math.e)
```

```
Square root of 25 is: 5.0
Sine of 45 degrees is: 0.7071067811865476
Cosine of 45 degrees is: 0.7071067811865476
Tangent of 45 degrees is: 0.9999999999999999
Factorial of 5 is: 120
Ceiling of 2.7 is: 3
Floor of 2.7 is: 2
Value of Pi: 3.141592653589793
Value of Euler's number (e): 2.718281828459045
```

In [ ]: