TECHNIK NEST
INNOVATIVE MINDS, NESTING SUCCESS

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Task no: Task 2

Question: 8 Questions

TECHNIK NEST

Task #1 :

Part 1: Store 5 student names & print each.

CODE:

```python
#  List of 5 student names
students = ["Ali", "Sara", "Aleena", "Zara", "Zainab"]

# Print each name one by one using loop
for name in students:
    print(name)


```

OUTPUT:

```
PS C:\Users\ABXX\Documents\GitHub\Week1> & C:/U
BXX/Documents/GitHub/Week1/task2a
Ali
Sara
Aleena
Zara
Zainab
PS C:\Users\ABXX\Documents\GitHub\Week1>
```

Part 2:

Reverse list without reverse().

CODE:

```python
#  List of 5 student names
students = ["Ali", "Sara", "Aleena", "Zara", "Zainab"]
# without reverse funtion we used this method
reversed_students = students[::-1]
for name in reversed_students:
    print(name)


```

OUTPUT:

```
PS C:\Users\ABXX\Documents\GitHub\Week1> & C:
BXX/Documents/GitHub/Week1/task2a
Zainab
Zara
Aleena
Sara
Ali
PS C:\Users\ABXX\Documents\GitHub\Week1>
```

Task 2:

Part 1: Store 3 coordinates & unpack.

CODE:

```python
# 3 coordinates ko tuple mein store krna hy
coordinates = (56, 101, 189)

#  Phir tuple ke 3 values ko alag alag variables mein unpack krna hyy
p, q, r = coordinates

#  Akhir my har coordinate ko alag alag print karna hy
print("P coordinate:", p)
print("Q coordinate:", q)
print("R coordinate:", r)

```

OUTPUT:

```
PS C:\Users\ABXX\Documents\GitHub\Week1> & C:/
BXX/Documents/GitHub/Week1/task2c
P coordinate: 56
Q coordinate: 101
R coordinate: 189
PS C:\Users\ABXX\Documents\GitHub\Week1>
```

Part 2:

Swap vars using tuple assignment.

CODE:

```
ask2d > ...
    # 2 variables banany hy phyly
    j = 7
    k = 20

    # Dono variables ke values ko tuple assignment se swap krna hy
    j, k = k, j

    # Swap hone ke baad print krna hy
    print("New value of j:", j)
    print("New value of k:", k)
```

OUTPUT:

```
PS C:\Users\ABXX\Documents\GitHub\Week1> &
BXX/Documents/GitHub/Week1/task2d
New value of j: 20
New value of k: 7
PS C:\Users\ABXX\Documents\GitHub\Week1>
```

Task 3:

PART #1: Remove duplicates from list

CODE:

```
task2e > ...
1   # Ek list banani hy  jisme kuch value duplicate hyn
2   numbers = [1, 2, 2, 3, 4, 4, 5, 5, 5]
3
4   # Set ka use keyn gy taky duplicate values hata dyn
5   unique_numbers = set(numbers)
```

```
PS C:\Users\ABXX\Documents\GitHub\Week1> & C:/
BXX/Documents/GitHub/Week1/task2e
Numbers without duplicate: {1, 2, 3, 4, 5}
List without duplicate): [1, 2, 3, 4, 5]
PS C:\Users\ABXX\Documents\GitHub\Week1>
```

OUTPUT:

PART #2: Find intersection of two sets.

CODE:

```
task2f > ...
    # Pehlay set banana jisme kuch numbers hon
    set1 = {2, 5, 6, 8, 10}

    # Dusra set banaya jisme kuch aur numbers hain
    set2 = {4, 5, 6, 7, 8}

    # intersection ka matlab dono sets ke beech jo values same hain wo nikalna
    common_values = set1.intersection(set2)

    # Result print kiya common values dono sets ke darmiyan
    print("Common values (intersection):", common_values)
```

OUTPUT:

```
PS C:\Users\ABXX\Documents\GitHub\Week1> & C:
BXX/Documents/GitHub/Week1/task2f
Common values (intersection): {8, 5, 6}
PS C:\Users\ABXX\Documents\GitHub\Week1>
```


Task # 4:

PART 1: Student record CRUD in dict.

CODE:

```python
# Dictionary for students record
students = {}

while True:
    print("\n1. Add Student")
    print("2. View Students")
    print("3. Update Student")
    print("4. Delete Student")
    print("5. Exit")

    choice = input("Enter your choice: ")

    #If  Add Student than Create
    if choice == "1":
        roll = input("Enter Roll Number: ")
        name = input("Enter Name: ")
        students[roll] = name
        print("Student added successfully.")

    # If Add View Students than Read
    elif choice == "2":
        for roll, name in students.items():
            print("Roll No:", roll, "| Name:", name)

    #  For Update Student
    elif choice == "3":
        roll = input("Enter Roll Number to update: ")
        if roll in students:
            name = input("Enter new name: ")
            students[roll] = name
            print("Student updated.")
        else:
            print("Student not found.")

    # For Delete Student
    elif choice == "4":
        roll = input("Enter Roll Number to delete: ")
        if roll in students:
            del students[roll]
            print("Student deleted.")
        else:
            print("Student not found.")

    # Exit
    elif choice == "5":
        break
    else:
        print("Invalid choice.")
```

OUTPUT:

```
1. Add Student
2. View Students
3. Update Student
4. Delete Student
5. Exit
Enter your choice: 1
Enter Roll Number: 12
Enter Name: Aleena Zainab
Student added successfully.

1. Add Student
2. View Students
3. Update Student
4. Delete Student
5. Exit
Enter your choice: 2
Roll No: 12 | Name: Aleena Zainab

1. Add Student
2. View Students
3. Update Student
4. Delete Student
5. Exit
Enter your choice: 3
Enter Roll Number to update: 12
Enter new name: Zainab Aleena
Student updated.
```

```
1. Add Student
2. View Students
3. Update Student
4. Delete Student
5. Exit
Enter your choice: 4
Enter Roll Number to delete: 12
2. View Students
3. Update Student
4. Delete Student
5. Exit
Enter your choice: 4
Enter Roll Number to delete: 12
Student deleted.
3. Update Student
4. Delete Student
5. Exit
Enter your choice: 4
Enter Roll Number to delete: 12
Student deleted.
4. Delete Student
5. Exit
Enter your choice: 4
Enter Roll Number to delete: 12
Student deleted.
5. Exit
Enter your choice: 4
Enter Roll Number to delete: 12
Student deleted.
Enter your choice: 4
Enter Roll Number to delete: 12
Student deleted.
Enter Roll Number to delete: 12
```

```
Student deleted.

Student deleted.

1. Add Student

1. Add Student
1. Add Student
2. View Students
2. View Students
3. Update Student
4. Delete Student
3. Update Student
4. Delete Student
5. Exit
4. Delete Student
5. Exit
5. Exit
Enter your choice: 5
PS C:\Users\ABXX\Documents\GitHub\Week1>
```

PART#2: **Count word frequency in sentence.**

CODE:

```python
#  User se sentence lena hy
sentence = input("Enter a sentence: ")

#  Dictionary banani hy  words counts store krne k liye
word_count = {}

#  Har word ko loop se count krna hy
for word in sentence.split():
    if word in word_count:
        word_count[word] += 1
    else:
        word_count[word] = 1

#  Output show krna
print("\nWord Frequencies:")
for word, count in word_count.items():
    print(word, ":", count)
```

OUTPUT:

```
Enter a sentence: Hello my name is Aleena Zainab


Word Frequencies:
Hello : 1
my : 1
name : 1
is : 1
Aleena : 1
Zainab : 1
PS C:\Users\ABXX\Documents\GitHub\Week1>
```

Task #5 : . Write calc(a,b,op).

CODE:

```python
def calc(a, b, op):  # def ka matlab hota hai define
    if op == '+':         # agar + krna hy tu
        return a + b
    elif op == '-':        # agar - krna hy tu
        return a - b
    elif op == '*':        #agar * krna hy tu
        return a * b
    elif op == '/':    # agar divide krna ho tu
        if b != 0:
            return a / b
        else:
            return "Can not be divided by zero"
    else:
        return "Give valid operation"

# user se input lena
num1 = int(input("Give first number: "))
num2 = int(input("Give second number: "))
operation = input("Give operation(+, -, *, /): ")

# result dikhana
result = calc(num1, num2, operation)
print("Result:", result)
```

OUTPUT:

```
BXX/Documents/GitHub/Week1/task2i
Give first number: 78
Give first number: 78
Give second number: 67
Give operation(+, -, *, /): *
Give operation(+, -, *, /): *
Result: 5226
PS C:\Users\ABXX\Documents\GitHub\Week1>
```

PART # 2: Write factorial(n) recursive.

CODE:

```python
def factorial(n):  # def ka matlab hota hai define
    if n == 0 or n == 1:
        return 1
    else:
        return n * factorial(n - 1)

# user se input lena
num = int(input("Which number's Fictorial you want?: "))

# result
print("Factorial:", factorial(num))
```

OUTPUT:

```
BXX/Documents/GitHub/Week1/task2j
Which number's Fictorial you want?: 7
Factorial: 5040
PS C:\Users\ABXX\Documents\GitHub\Week1>
```


Task # 6:

Part #1 : . Use random & datetime in script.

CODE:

```python
import random          # random and data time are buildin moudule
import datetime

# random number generate karo
num = random.randint(1, 100)
print("Random number:", num)

# aaj ki date aur time dikhao
now = datetime.datetime.now()
print("Aaj ki tareekh aur waqt:", now)
```

OUTPUT:

```
BXX/Documents/GitHub/Week1/task2k
Random number: 22
Aaj ki tareekh aur waqt: 2025-08-07 10:06:05.204597
PS C:\Users\ABXX\Documents\GitHub\Week1>
```


PART #2: Create math_utils module & import.

CODE:

Math_utils.py

```python
def add(a, b):
    return a + b

def square(n):
    return n * n
```

Main.py

```python
import math_utils

x = math_utils.add(4, 6)
y = math_utils.square(5)

print("Addition:", x)
print("Square:", y)
```

OUTPUT:

```
PS C:\Users\ABXX\Documents\GitHub\Week1>
Documents/GitHub/Week1/main .py"
Addition: 10
Square: 25
PS C:\Users\ABXX\Documents\GitHub\Week1>
```

Task # 7:

Part #1: . Safe int input loop.

CODE:

```
while True:
    try:
        num = int(input("Give any number : "))
        break  # agar sahi input ho to loop se bahar
    except:
        print("Only write number don'nt write text:")

print("Your number:", num)

```

OUTPUT:

```
ocuments/GitHub/Week1/task2L
Give any number : 897
Your number: 897
PS C:\Users\ABXX\Documents\GitHub\Week1>
```


PART # 2:. File open with error message

CODE:

```
sk2m > ...
try:
    file = open("data.txt", "r")
    content = file.read()
    print("File data:")
    print(content)              # i don't have the file name data.txt so it will give result "file not found"
    file.close()
except:
    print("File is not found . Check the name please")
```

OUTPUT:

```
PS C:\Users\ABXX\Documents\GitHub\Week1> &
ocuments/GitHub/Week1/task2m
File is not found . Check the name please
PS C:\Users\ABXX\Documents\GitHub\Week1>
```


WEEKLY CHALLENGE

CODE:

```python
import json  # JSON file ke liye

# File ka naam
filename = "contacts.json"

# File se contacts load karnay ky liyay
def load_contacts():
    try:
        with open(filename, "r") as file:
            return json.load(file)
    except:
        return {}  # agar file na ho to empty dict do

# Contacts ko file mein save karna
def save_contacts(contacts):
    with open(filename, "w") as file:
        json.dump(contacts, file, indent=4)

# Contact add karna
def add_contact(contacts):
    name = input("Name: ")
    phone = input("Phone: ")
    email = input("Email: ")
    contacts[name] = {"phone": phone, "email": email}
    print("Contact added.")

# Contact read karna (show all)
def view_contacts(contacts):
    if not contacts:
```

```python
def view_contacts(contacts):
        print("No contacts found.")
    else:
        for name, info in contacts.items():
            print(f"{name} - Phone: {info['phone']}, Email: {info['email']}")

# Contact update karna
def update_contact(contacts):
    name = input("Name to update: ")
    if name in contacts:
        phone = input("New phone: ")
        email = input("New email: ")
        contacts[name] = {"phone": phone, "email": email}
        print("Contact updated.")
    else:
        print("Contact not found.")

# Contact delete karna
def delete_contact(contacts):
    name = input("Name to delete: ")
    if name in contacts:
        del contacts[name]
        print("Contact deleted.")
    else:
        print("Contact not found.")

# Main loop
def main():
    contacts = load_contacts()
```

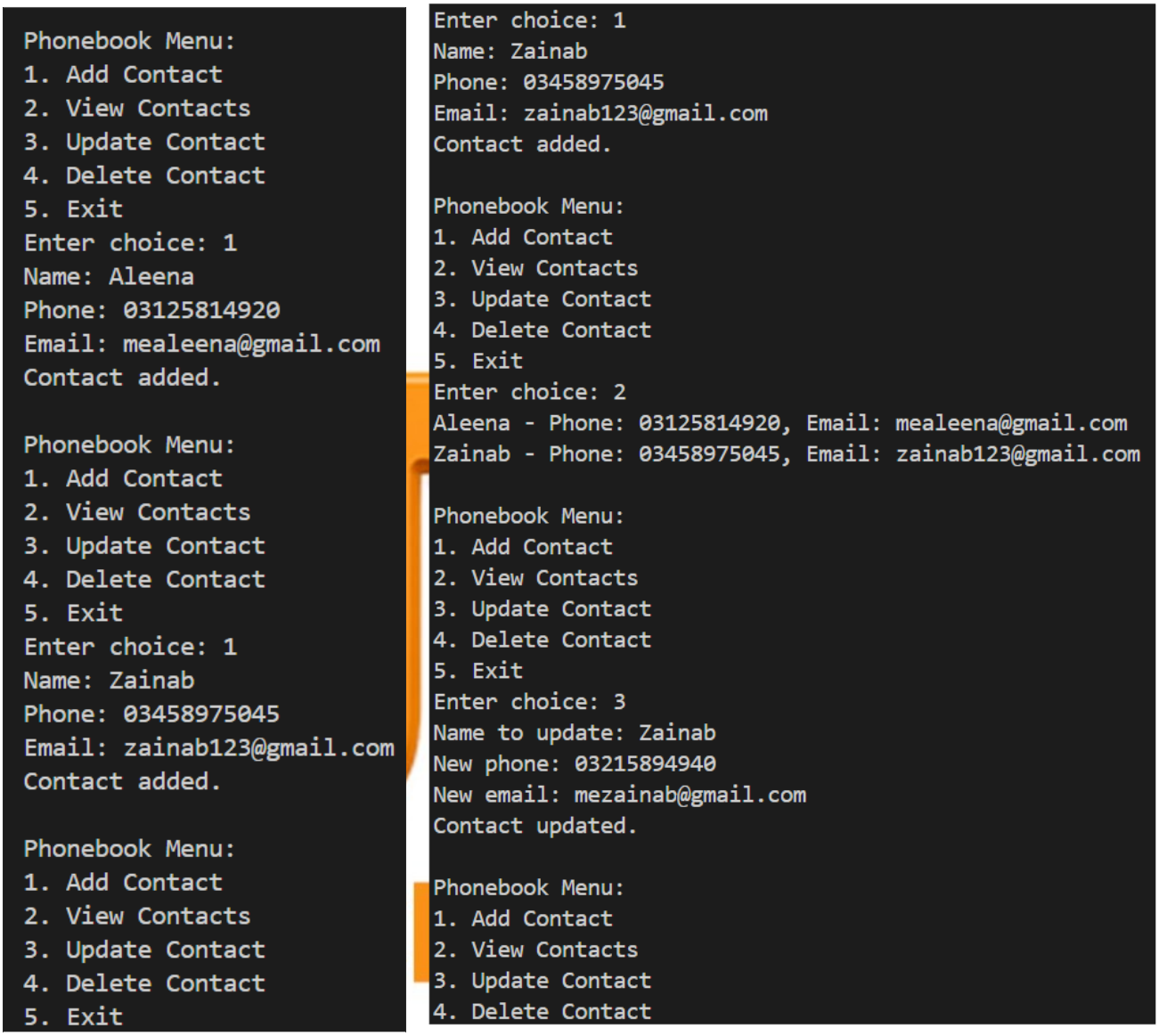
```python
def main():
    while True:
        print("\nPhonebook Menu:")
        print("1. Add Contact")
        print("2. View Contacts")
        print("3. Update Contact")
        print("4. Delete Contact")
        print("5. Exit")

        choice = input("Enter choice: ")

        if choice == "1":
            add_contact(contacts)
        elif choice == "2":
            view_contacts(contacts)
        elif choice == "3":
            update_contact(contacts)
        elif choice == "4":
            delete_contact(contacts)
        elif choice == "5":
            save_contacts(contacts)
            print("Contacts saved. Goodbye!")
            break
        else:
            print("Invalid choice.")

# Run the program
main()
```

OUTPUT:



```
Phonebook Menu:
1. Add Contact
2. View Contacts
3. Update Contact
4. Delete Contact
5. Exit
Enter choice: 1
Name: Aleena
Phone: 03125814920
Email: mealeena@gmail.com
Contact added.

Phonebook Menu:
1. Add Contact
2. View Contacts
3. Update Contact
4. Delete Contact
5. Exit
Enter choice: 1
Name: Zainab
Phone: 03458975045
Email: zainab123@gmail.com
Contact added.

Phonebook Menu:
1. Add Contact
2. View Contacts
3. Update Contact
4. Delete Contact
5. Exit
```

```
Enter choice: 1
Name: Zainab
Phone: 03458975045
Email: zainab123@gmail.com
Contact added.

Phonebook Menu:
1. Add Contact
2. View Contacts
3. Update Contact
4. Delete Contact
5. Exit
Enter choice: 2
Aleena - Phone: 03125814920, Email: mealeena@gmail.com
Zainab - Phone: 03458975045, Email: zainab123@gmail.com

Phonebook Menu:
1. Add Contact
2. View Contacts
3. Update Contact
4. Delete Contact
5. Exit
Enter choice: 3
Name to update: Zainab
New phone: 03215894940
New email: mezainab@gmail.com
Contact updated.

Phonebook Menu:
1. Add Contact
2. View Contacts
3. Update Contact
4. Delete Contact
```

```
5. Exit
Enter choice: 4
Name to delete: Zainab
Contact deleted.

Phonebook Menu:
1. Add Contact
2. View Contacts
3. Update Contact
4. Delete Contact
5. Exit
Enter choice: 2
Aleena - Phone: 03125814920, Email: mealeena@gmail.com

Phonebook Menu:
1. Add Contact
2. View Contacts
3. Update Contact
4. Delete Contact
5. Exit
Enter choice: 5
1. Add Contact
2. View Contacts
3. Update Contact
4. Delete Contact
5. Exit
Enter choice: 4
Name to delete: Zainab
Contact deleted.

Phonebook Menu:
1. Add Contact
2. View Contacts
```

```
3. Update Contact
4. Delete Contact
5. Exit
Enter choice: 2
Aleena - Phone: 03125814920, Email: mealeena@gmail.com

Phonebook Menu:
1. Add Contact
2. View Contacts
3. Update Contact
4. Delete Contact
5. Exit
Enter choice: 5
5. Exit
Enter choice: 4
Name to delete: Zainab
Contact deleted.

Phonebook Menu:
1. Add Contact
2. View Contacts
3. Update Contact
4. Delete Contact
5. Exit
Enter choice: 2
Aleena - Phone: 03125814920, Email: mealeena@gmail.com

Phonebook Menu:
1. Add Contact
2. View Contacts
3. Update Contact
4. Delete Contact
5. Exit
```

```
Enter choice: 5
Phonebook Menu:
1. Add Contact
2. View Contacts
3. Update Contact
4. Delete Contact
5. Exit
Enter choice: 2
Aleena - Phone: 03125814920, Email: mealeena@gmail.com

Phonebook Menu:
1. Add Contact
2. View Contacts
3. Update Contact
4. Delete Contact
5. Exit
Enter choice: 5
Enter choice: 2
Aleena - Phone: 03125814920, Email: mealeena@gmail.com

Phonebook Menu:
1. Add Contact
2. View Contacts
3. Update Contact
4. Delete Contact
5. Exit
Enter choice: 5
5. Exit
Enter choice: 5
Contacts saved. Goodbye!
PS C:\Users\ABXX\Documents\GitHub\Week1>
```