**TASK 7: Utilizing ‘Functions’ concepts in Python Programming (CO2-K3)**

**Problem:**  
Define a function calculate\_grade(marks) in Python that accepts the marks of a student in three subjects and calculates the grade according to the following rules:

* **Average ≥ 90** → Grade “A+”
* **Average ≥ 75 and < 90** → Grade “A”
* **Average ≥ 60 and < 75** → Grade “B”
* **Average ≥ 40 and < 60** → Grade “C”
* **Average < 40** → Grade “Fail”

**Program:**

# Function to calculate grade

def calculate\_grade(marks):

avg = sum(marks) / len(marks)

if avg >= 90:

return "A+"

elif avg >= 75:

return "A"

elif avg >= 60:

return "B"

elif avg >= 40:

return "C"

else:

return "Fail"

name = input("Enter Student Name: ")

marks = []

for i in range(5):

m = int(input("Enter marks for subject:"))

marks.append(m)

grade = calculate\_grade(marks)

print("Name :", name)

print("Marks :", marks)

print("Average:", sum(marks) / len(marks))

print("Grade :", grade)

**problem 2:**

**Design a Python program to simulate a simple ATM system using functions.**

**Program:**# Function to deposit money

def deposit(balance, amount):

return balance + amount

# Function to withdraw money

def withdraw(balance, amount):

if amount > balance:

print("Insufficient Balance!")

return balance

return balance - amount

# Function to show balance

def show\_balance(balance):

print("Current Balance:", balance)

# --- Program execution starts here (no main used) ---

balance = 1000 # Initial balance

while True:

print("\n--- ATM Menu ---")

print("1. Deposit")

print("2. Withdraw")

print("3. Check Balance")

print("4. Exit")

choice = int(input("Enter your choice: "))

if choice == 1:

amt = float(input("Enter amount to deposit: "))

balance = deposit(balance, amt)

elif choice == 2:

amt = float(input("Enter amount to withdraw: "))

balance = withdraw(balance, amt)

elif choice == 3:

show\_balance(balance)

elif choice == 4:

print("Thank you for using ATM.")

break

else:

print("Invalid choice! Please try again.")

**Problem 3:**

**Write a Python program to simulate a Shopping Cart System using functions.**

**Program:**

# Function to add item

def add\_item(cart, item):

cart.append(item)

print(item, "added to cart")

# Function to remove item

def remove\_item(cart, item):

if item in cart:

cart.remove(item)

print(item, "removed from cart")

else:

print(item, "not found in cart")

# Function to view cart

def view\_cart(cart):

if not cart:

print("Cart is empty")

else:

print(cart)

# --- Program execution starts here (no main used) ---

cart = []

while True:

print("1. Add Item")

print("2. Remove Item")

print("3. View Cart")

print("4. Exit")

choice = int(input("Enter your choice: "))

if choice == 1:

item = input("Enter item to add: ")

add\_item(cart, item)

elif choice == 2:

item = input("Enter item to remove: ")

remove\_item(cart, item)

elif choice == 3:

view\_cart(cart)

elif choice == 4:

print("Exiting")

break

else:

print("Invalid choice")