Q1. Write a Python program that generates a multiplication table for a given number a and prints the multiplication table for a from 1 to n, where n is provided by the user.

Q2. Write a Python program that generates and prints multiplication tables for a range of numbers from start to end. The user should input the starting and ending numbers, and the program should print the multiplication tables for each number in this range from 1 to 10.

Q3. Consider a doctor's office where each appointment is 30 minutes long. Write a Python program that prints available appointment times within a given range of hours. The program should use nested loops to generate the schedule.

> The outer loop should iterate over the hours.

> The inner loop should iterate over the minutes, in 30-minute intervals.

Q4. Consider a doctor's office where each appointment is 30 minutes long. Write a Python program that checks if a given time slot is available for an appointment within a specified range of hours.

Q5. Develop a simple ATM machine simulation in Python. The ATM should allow the user to perform basic operations such as checking the balance, depositing money, withdrawing money, and exiting the program.

Requirements:

i.  Initial Setup:

Start with an initial balance of $1000.

ii. Menu Options: Provide a menu with the following options: Check Balance Deposit Money Withdraw Money Exit Functionality:

iii. Check Balance: Display the current balance. Deposit Money: Prompt the user to enter the amount to deposit. Ensure the amount is a positive number.

iv. Withdraw Money: Prompt the user to enter the amount to withdraw. Ensure the amount is a positive number and that sufficient funds are available. Exit: Terminate the program with a thank you message.

v. Error Handling: Handle invalid inputs such as non-numeric values and ensure that the user cannot withdraw more than the available balance.

For Instance: --- ATM Menu ---

1. Check Balance

2. Deposit Money

3. Withdraw Money

4. Exit Select an option (1-4): 3

Enter the amount to withdraw: $600

Withdrew $600.00.

New balance: $400.00

--- ATM Menu ---

1. Check Balance

2. Deposit Money

3. Withdraw Money

4. Exit Select an option (1-4): 4

Thank you for using the ATM. Goodbye!