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NATIONAL SKILL TRAINING INSTITUTE (WOMEN), INDORE

ARTIFICIAL INTELLIGENCE PROGRAMMING ASSISTANT
(MODULE 2 - INTERNAL PRACTICAL)
2024-25

Set 4

TIME: 3 Hrs **MARKS: 50**

Note: Attempt any 2

1. Program that finds the largest and smallest digit in a given number. Write a Python program that reads a number from the user and finds the smallest and largest digit present in that number. The program should treat the input as a sequence of digits, examine each digit, then output both the smallest and the largest digit. This can be done by iterating through the digits and tracking current minimum and maximum, or by using built-in functions after converting to a string.
   Sample Input
   ```
   Enter a number: 9387422
   ```
   Sample Output
   ```
   Smallest digit: 2
   Largest digit: 9
   ```

2. Accept N numbers, store in a list, display list, and find the second largest with proper checks. Write a Python program that first asks the user how many numbers they want to enter (N). If N is less than 2, display an appropriate message and stop, because a second largest value cannot be determined. Otherwise:
   - Read N integers from the user and store them in a list.
   - Display the list back to the user.
   - Find and display the second largest number in the list. Handle duplicates sensibly, for example by considering "second largest" as the second distinct highest value.

Sample Input / Output 1 (valid case)

```
How many numbers do you want to enter? 6
Enter number 1: 10
Enter number 2: 5
Enter number 3: 20
Enter number 4: 20
Enter number 5: 8
Enter number 6: 15

List of numbers: [10, 5, 20, 20, 8, 15]
Second largest number: 15
```

Sample Input / Output 2 (too few numbers)

```
How many numbers do you want to enter? 1
You must enter at least 2 numbers to find the second largest value.
```

3. Find all numbers between 2000 and 3200 divisible by 7 but not a multiple of 5, printed comma-separated on one line. Write a Python program to find all numbers between 2000 and 3200 (both included) that are divisible by 7 but are not multiples of 5. The program should:
    - Iterate over each integer from 2000 to 3200 (inclusive).
    - Check whether the current number is divisible by 7 (number % 7 == 0) and not divisible by 5 (number % 5!= 0).
    - Collect all such numbers into a list (or similar structure).
    - Finally, print these numbers as a single comma-separated sequence on one line.

Sample Input

(No input from the user; the range is fixed from 2000 to 3200.)

Sample Output

```
2002,2009,2016,2023,2037,2044,2051,2058,2072,2079,2086,2093,...,3192
,3199
```