STL Map & Set Test (Questions 1–5)

1. Print Words in Sorted Order
You are given a paragraph as a string. Your task is to extract all the unique words from the paragraph and print them in alphabetical order.

You must handle the following correctly:
• Convert the paragraph to lowercase.
• Remove punctuation such as commas, periods, exclamation marks, and question marks.
• Consider a word to contain alphabets only.

Print each unique word on a new line.

2. Student Marks Database
Create a student marks management system using a map.

Supported operations:
ADD name marks — Add or update a student's marks.
REMOVE name — Remove a student's record if it exists.
FIND name — Print the student's marks or print “Not found”.
PRINT — Print all students and their marks sorted by student name.

3. Auto■Correct Suggestion System
You are given a dictionary of valid words stored beforehand. You will be given several prefix queries. For each prefix, print all dictionary words that start with that prefix.

Requirements:
• Store all dictionary words in a sorted set.
• For each prefix, use lower_bound to find the first matching word.
• Print words until they stop matching the prefix.

4. Movie Rating System
Build a rating system to maintain movie ratings.

Supported operations:
ADD movie rating — Add a new movie with rating from 1 to 10.
UPDATE movie rating — Update an existing movie’s rating.
TOP k — Print the top k movies sorted by rating in descending order. If two movies have the same rating, print the one that is lexicographically smaller first.

Use a map for storing movie ratings and a suitable sorted structure for ranking.

5. College Attendance Tracker
Design an attendance tracker using a set.

Supported operations:
PRESENT name — Mark the student as present.
ABSENT name — Mark the student as absent by removing their name.
COUNT — Print the number of present students.
PRINT — Print all present students in alphabetical order.