Course:	PROGRAMMING IN C			**Semester:**	Second
Division:	ALL	**Batch:**		**Date:**	24/04/2024
Exam:	ON-SCREEN TEST			**Time:**	10 AM to 12 PM
Name:				**Roll No:**	

SET A

Q No	Question	Marks
1	**Attempt any one**	15

a) Write a C program to sort names of students in the classroom using string.

Input cases: Total Number of students = 5 Student 1: Bob Student 2: Siya Student 3: Yogesh Student 4: Mihir Student 5: Aditya	Result After sorting Names of the students are Aditya, Bob, Mihir, Siya, Yogesh

b) Implement a function in C that calculates the k-th occurrence of an even integer from a sequence entered by the user until -1 is encountered. The function should have the following specifications:

- **Function Name:** *findKthEven*
- **Parameters:**
  - k: The desired occurrence number (input by the user).
  - sequence: An array representing the user-entered sequence of integers terminated by -1.
- **Return Value:**
  - If the k-th occurrence of an even number exists in the sequence, return that even number.
  - If the k-th occurrence does not exist (e.g., there are fewer than k even numbers), return -1.
- **Display:**
  - The result (either the k-th even number or -1) should be displayed in the main function.

You should prompt the user to enter the sequence of integers, store them in an array until -1 is encountered, and then prompt the user to enter the value of k (the desired occurrence number). Call the ***findKthEven*** function with the provided k and sequence to determine the k-th even number (if it exists) and display the result.

Test Case 1:	**Test Case 2:**	**Test Case 3:**
Input : 1 2 3 4 6 8 9 -1 k = 3 Output: 6	Input : 1 2 3 4 5 12 4 -1 k = 5 Output: -1	Input : 0 2 4 5 3 -1 k = 1 Output: 0

2	**Attempt any one**	15

a) Design structure to represent an inventory management system for home automation appliances such as thermostats, lights, door locks, and security cameras. Include attributes like:
Device ID:
Device Type: (e.g., thermostat, light, door lock, security camera).
Warranty in years:
Price:
Model: name of the device
Display the information in ascending order by price.

Test Case 1: **Input:** Enter no. of appliances: 2 Enter Device Name: Light Enter Device ID: L1 Enter warranty in years: 3 Price: 3000 Model: IlluminateAI Enter Device Name: Security Camera Enter Device ID: S1 Enter warranty in years: 4 Price: 2000 Model: Nest Cam IQ Outdoor	**Output**: **After sorting**: Device Name: Security Camera Device ID: S1 warranty in years: 4 Price: 2000 Model: Nest Cam IQ Outdoor Device Name: Light Device ID: L1 warranty in years: 3 Price: 3000 Model: IlluminateAI

b) WAP using Dynamic Memory Allocation to accept following data "***first name, middle name, last name***". Accept this data for 5 students and concatenate middle name and last name with first name of student (eg: fname mname lname) keeping single space between the 2 word and count the length of string after concatenation and display this data before and after concatenation in proper tabular form. (inbuilt string function is allowed to use)

Test Case 1: **Input :** Student 1 FName: Raj MName:Aryan LName:Mehta Student 2 FName: Ketan MName:Arvind LName:Mantri Student 3 FName: Suraj MName:Sagar LName:More . .	**Output:** Before After Length Raj Raj Aryan Mehta 15 Ketan Ketan Arvind Mantri 19 Suraj Suraj Sagar More 16 . .