C PROGRAMMING LAB

(COM-111)

ASSIGNMENT

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WRITE A C PROGRAM TO FIND THE MAXIMUM AND MINIMUM ELEMENT IN AN ARRAY

Code:-

```c
#include <stdio.h>

int main() {
    int size;

    // Get the size of the array from the user
    printf("Enter the size of the array: ");
    scanf("%d", &size);
    // Check if the entered size is non-positive
    if (size <= 0) {
        printf("Invalid array size. Please enter a positive size.\n");
        return 1; // Exit with an error code
    }
    // Declare an array of the given size
    int arr[size];
    // Get array elements from the user
    printf("Enter %d elements of the array:\n", size);
    for (int i = 0; i < size; i++) {
        scanf("%d", &arr[i]);
    }
    // Find the maximum and minimum elements
    int max = arr[0];
    int min = arr[0];

    for (int i = 1; i < size; i++) {
        if (arr[i] > max) {
            max = arr[i]; // Update max if a larger element is found
        }

        if (arr[i] < min) {
            min = arr[i]; // Update min if a smaller element is found
        }
    }

    // Print the results
    printf("Maximum element: %d\n", max);
    printf("Minimum element: %d\n", min);

    return 0;
}
```

Output:-

```
Enter the size of the array: 5
Enter 5 elements of the array:
1 2 3 4 5
Maximum element: 5
Minimum element: 1
```

WRITE A PROGRAM TO PRINT THE STUDENT MARK SHEET USING STRUCTURE

Code:-

```c
#include <stdio.h>

// Define a structure for student information
struct Student {
    char name[50];
    int rollNumber;
    float marks[5]; // Assuming 5 subjects
    float totalMarks;
    float percentage;
    char grade;
};

int main() {
    // Declare a variable of type struct Student
    struct Student student;

    // Get student information from the user
    printf("Enter student name: ");
    scanf("%49s", student.name);

    printf("Enter roll number: ");
    scanf("%d", &student.rollNumber);

    printf("Enter marks for 5 subjects:\n");
    for (int i = 0; i < 5; i++) {
        printf("Subject %d: ", i + 1);
        scanf("%f", &student.marks[i]);
        student.totalMarks += student.marks[i];
    }

    // Calculate percentage
    student.percentage = (student.totalMarks / (5 * 100)) * 100;

    // Determine grade based on percentage
    if (student.percentage >= 90) {
        student.grade = 'A';
    } else if (student.percentage >= 80) {
        student.grade = 'B';
    } else if (student.percentage >= 70) {
        student.grade = 'C';
```

```
    } else if (student.percentage >= 60) {
        student.grade = 'D';
    } else {
        student.grade = 'F';
    }

    // Print the student mark sheet
    printf("\nStudent Mark Sheet\n");
    printf("Name: %s\n", student.name);
    printf("Roll Number: %d\n", student.rollNumber);
    printf("Marks:\n");
    for (int i = 0; i < 5; i++) {
        printf("Subject %d: %.2f\n", i + 1, student.marks[i]);
    }
    printf("Total Marks: %.2f\n", student.totalMarks);
    printf("Percentage: %.2f%%\n", student.percentage);
    printf("Grade: %c\n", student.grade);

    return 0;
}
```

Output:-

```
Enter student name: Kamaldeep
Enter roll number: 177
Enter marks for 5 subjects:
Subject 1: 100
Subject 2: 100
Subject 3: 100
Subject 4: 100
Subject 5: 100

Student Mark Sheet
Name: Kamaldeep
Roll Number: 177
Marks:
Subject 1: 100.00
Subject 2: 100.00
Subject 3: 100.00
Subject 4: 100.00
Subject 5: 100.00
Total Marks: 500.00
Percentage: 100.00%
Grade: A
```