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Class :- B

ESFP-II

Practical 2:

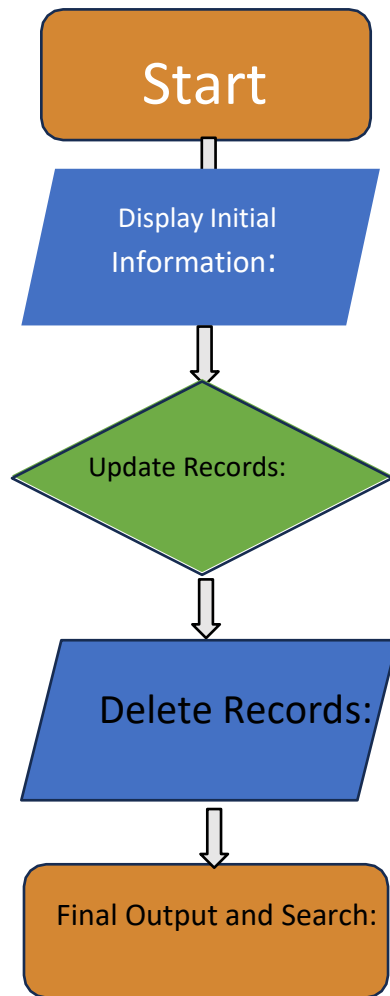
DMA: Definition: Examination System.

Vivek engineering college, which is situated at Pune IT park. College authority decides to come up with a new idea for the handling of examination seating arrangements as per the rules provided by the university for different-different courses. For that, the college examination committee department wants separate records, for those students, who are giving a remedial or regular examination for the semester-II, IV & VI in the given current academic calendar month. For that, the examination committee wants to take all the basic information related to students like rollno, name, class, semester, subject, and exam fee. So, whenever is required to search any student records by id, or by name, he can search randomly, if the committee found some rectification is required in the student record, he can modify / update the given record by id or by name, if by mistakenly student filled up the examination form for the given said semester, than committee should have the authority to delete the student record by id or by their name from the exam record. So, for the fulfilment of the above all said requirement make an appropriate program using structure and DMA concept in C.

Program input and output should be in the following format:

```
Enter how many record you want to store:5
Enter rno, name, std, sem, subject and fee:
101 Sumit 13th II Math 500
102 Prince 14th IV Java 1000
103 Krupal 14th IV Angular 700
104 Vicky 15th VI DataSciene 1200
105 Mayur 13th II ESFP 1200
===== Output of student information=====
101 Sumit 13th II Math 500
102 Prince 14th IV Java 1000
103 Krupal 14th IV Angular 700
104 Vicky 15th VI DataSciene 1200
105 Mayur 13th II ESFP 1200

Do you want to modify / update records (Y/N)?y
how do you want to modify record by id or by name:
press<1> for by id and press<2> for by name ? 1
Enter student id:104
104 Vicky 15th VI DataSciene 1200
Enter rno, name, std, sem, subject and fee:
1001 Kriti 15th VI AI 1000
Record Updated successfully
101 Sumit 13th II Math 500
102 Prince 14th IV Java 1000
103 Krupal 14th IV Angular 700
1001 Kriti 15th VI AI 1000
105 Mayur 13th II ESFP 1200
Do you want to delete (Y/N)?y
how do you want to delete record by id or by name:
press<1> for by id and press<2> for by name ? 1
Enter student id:103
103 Krupal 14th IV Angular 700
Record deleted successfully
101 Sumit 13th II Math 500
102 Prince 14th IV Java 1000
1001 Kriti 15th VI AI 1000
105 Mayur 13th II ESFP 1200
Find the student record by name:
Enter student name:Prince
102 Prince 14th IV Java 1000
```



Code& Output:

```
#include <stdio.h>
#include <stdlib.h>
#include <string.h>
struct Student {
    int rollno;
    char name[50];
    int std;
    char sem[5];
    char subject[50];
    int fee;
};

int main() {
    int n;
    printf("Enter how many records you want to store: ");
    scanf("%d", &n);
    struct Student *records = (struct Student *)malloc(n * sizeof(struct Student));
    printf("Enter rno, name, std, sem, subject and fee:\n"); for (int i = 0; i < n; i++) {
        int duplicate = 0;
        do {
            duplicate = 0;
            scanf("%d %s %s %s %s %d", &records[i].rollno, records[i].name, &records[i].std, records[i].sem, records[i].subject, &records[i].fee);
            for (int j = 0; j < i; j++) {
                if (records[j].rollno == records[i].rollno) {
                    printf("Duplicate ID found! Please enter the information again.\n");
                    duplicate = 1;
                    break;
                }
            }
        } while (duplicate);
    }

    printf("===== Output of student information =====\n");
    for (int i = 0; i < n; i++) {
        printf("%d %s %d %s %s %d\n", records[i].rollno, records[i].name, records[i].std,
            records[i].sem, records[i].subject, records[i].fee);
    }

    char choice;
    printf("Do you want to modify / update records (Y/N)? ");
    scanf("%c", &choice);
    if (choice == 'Y' || choice == 'y') {
        int updateChoice;
        printf("How do you want to modify record by ID or by name:\n");
        printf("Press <1> for by ID and press <2> for by name? ");
        scanf("%d", &updateChoice);
        if (updateChoice == 1) {
            int id;
            printf("Enter student ID: ");
            scanf("%d", &id);
            for (int i = 0; i < n; i++) {
                if (records[i].rollno == id) {
                    printf("%d %s %d %s %s %d\n", records[i].rollno, records[i].name, records[i].std,
                        records[i].sem, records[i].subject, records[i].fee);
                    printf("Enter rno, name, std, sem, subject and fee:\n");
                    scanf("%d %s %s %s %s %d", &records[i].rollno, records[i].name, &records[i].std,
                        records[i].sem, records[i].subject, &records[i].fee);
                    printf("Record updated successfully\n");
                    for (int i = 0; i < n; i++) {
                        printf("%d %s %d %s %s %d\n", records[i].rollno, records[i].name, records[i].std,
                            records[i].sem, records[i].subject, records[i].fee);
                    }
                    break;
                }
            }
        } else if (updateChoice == 2) {
            char searchName[50];
            printf("Enter student name to update: ");
            scanf("%s", searchName);
            for (int i = 0; i < n; i++) {
                if (strcmp(records[i].name, searchName) == 0) {
                    printf("%d %s %d %s %s %d\n", records[i].rollno, records[i].name, records[i].std,
                        records[i].sem, records[i].subject, records[i].fee);
                    printf("Enter rno, name, std, sem, subject and fee:\n");
                    scanf("%d %s %s %s %s %d", &records[i].rollno, records[i].name, &records[i].std,
                        records[i].sem, records[i].subject, &records[i].fee);
                    printf("Record updated successfully\n");
                    for (int i = 0; i < n; i++) {
                        printf("%d %s %d %s %s %d\n", records[i].rollno, records[i].name, records[i].std,
                            records[i].sem, records[i].subject, records[i].fee);
                    }
                    break;
                }
            }
        } else {
            printf("Invalid choice!\n");
        }
    }

    printf("Do you want to delete (Y/N)? ");
    scanf("%c", &choice);
    if (choice == 'Y' || choice == 'y') {
        int deleteChoice;
        printf("How do you want to delete record by ID or by name:\n");
        printf("Press <1> for by ID and press <2> for by name? ");
        scanf("%d", &deleteChoice);
        if (deleteChoice == 1) {
            int id;
            printf("Enter student ID to delete: ");
            scanf("%d", &id);
            for (int i = 0; i < n; i++) {
                if (records[i].rollno == id) {

```

```

        printf("%d %s %d %s %s %d\n", records[i].rollno, records[i].name, records[i].std,
               records[i].sem, records[i].subject, records[i].fee);
        for (int j = i; j < n - 1; j++) {
            records[j] = records[j + 1];
        }
        n--;
        printf("Record deleted successfully\n");
        for (int i = 0; i < n; i++) {
            printf("%d %s %d %s %s %d\n", records[i].rollno, records[i].name, records[i].std,
                  records[i].sem, records[i].subject, records[i].fee);
        }
        break;
    }
} else if (deleteChoice == 2) {
    char searchName[50];
    printf("Enter student name to delete: ");
    scanf("%s", searchName);
    for (int i = 0; i < n; i++) {
        if (strcmp(records[i].name, searchName) == 0) {
            printf("%d %s %d %s %s %d\n", records[i].rollno, records[i].name, records[i].std,
                  records[i].sem, records[i].subject, records[i].fee);
            for (int j = i; j < n - 1; j++) {
                records[j] = records[j + 1];
            }
            n--;
            printf("Record deleted successfully\n");
            for (int i = 0; i < n; i++) {
                printf("%d %s %d %s %s %d\n", records[i].rollno, records[i].name, records[i].std,
                      records[i].sem, records[i].subject, records[i].fee);
            }
            break;
        }
    }
} else {
    printf("Invalid choice!\n");
}

printf("===== Output of student information=====\n");
for (int i = 0; i < n; i++) {
    printf("%d %s %d %s %s %d\n", records[i].rollno, records[i].name, records[i].std,
          records[i].sem, records[i].subject, records[i].fee);
}

char searchName[50];
printf("Find the student record by name:\n");
printf("Enter student name: ");
scanf("%s", searchName);
for (int i = 0; i < n; i++) {
    if (strcmp(records[i].name, searchName) == 0) {
        printf("%d %s %d %s %s %d\n", records[i].rollno, records[i].name, records[i].std,
              records[i].sem, records[i].subject, records[i].fee);
        break;
    }
}

free(records);
return 0;

```

```
Enter how many records you want to store: 5
Enter rno, name, std, sem, subject and fee:
101 Sumit 13 II Math 500
102 Prince 14 IV Java 1000
103 Krupal 14 IV Angular 700
104 Vicky 15 VI Datascience 1200
105 Mayur 13 II ESFP 1200
===== Output of student information=====
101 Sumit 13 II Math 500
102 Prince 14 IV Java 1000
103 Krupal 14 IV Angular 700
104 Vicky 15 VI Datascience 1200
105 Mayur 13 II ESFP 1200
Do you want to modify / update records (Y/N)? y
How do you want to modify record by ID or by name:
Press <1> for by ID and press <2> for by name ? 1
Enter student ID: 104
104 Vicky 15 VI Datascience 1200
Enter rno, name, std, sem, subject and fee:
1001 Kriti 15 VI AI 1000
Record updated successfully
101 Sumit 13 II Math 500
102 Prince 14 IV Java 1000
103 Krupal 14 IV Angular 700
1001 Kriti 15 VI AI 1000
105 Mayur 13 II ESFP 1200
Do you want to delete (Y/N)? y
How do you want to delete record by ID or by name:
Press <1> for by ID and press <2> for by name ? 1
Enter student ID to delete: 103
103 Krupal 14 IV Angular 700
Record deleted successfully
101 Sumit 13 II Math 500
102 Prince 14 IV Java 1000
1001 Kriti 15 VI AI 1000
105 Mayur 13 II ESFP 1200
===== Output of student information=====
101 Sumit 13 II Math 500
102 Prince 14 IV Java 1000
1001 Kriti 15 VI AI 1000
105 Mayur 13 II ESFP 1200
Find the student record by name:
Enter student name: Prince
102 Prince 14 IV Java 1000

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Process exited after 179.4 seconds with return value 0
Press any key to continue . . . |
```

