Name: Atharva Salitri **Div: CSAI-B** **Batch: 2** **Roll No.: 37**

2. Student Database Code and Output:

```c
#include <stdio.h>
#include <stdlib.h>
#include <string.h>

struct Student {
    int rollno;
    char name[50];
    float cgpa;
} stud[100];

int numStudents = 0;

void create() {
    printf("Enter the number of students: ");
    scanf("%d", &numStudents);

    if (numStudents > 100) {
        printf("Number exceeds maximum limit of 100 students. Setting to 100.\n");
        numStudents = 100;
    }
    printf("Student database created for %d students.\n\n", numStudents);

    printf("Enter data for for %d students.\n\n", numStudents);
    for (int i = 0; i < numStudents; i++) {
        printf("Enter data for student %d:\n", i + 1);
        printf("Enter roll number: ");
        scanf("%d", &stud[i].rollno);
        printf("Enter name: ");
        scanf(" %[^\n]s", stud[i].name);
        printf("Enter CGPA: ");
        scanf("%f", &stud[i].cgpa);
        printf("\n");
    }
}

void add() {
    for (int i = 0; i < 100; i++) {
        if (stud[i].rollno == 0) {
            printf("Enter roll number: ");
            scanf("%d", &stud[i].rollno);
            printf("Enter name: ");
            scanf(" %[^\n]s", stud[i].name);
            printf("Enter CGPA: ");
            scanf("%f", &stud[i].cgpa);
            printf("Student added successfully at position %d.\n", (i+1));
            return;
        }
    }
    printf("Cannot add more students. Maximum limit reached.\n");
}
```

```c
void delete_student() {
    int rollno;
    printf("Enter roll number to delete: ");
    scanf("%d", &rollno);
    for (int i = 0; i < 100; i++) {
        if (stud[i].rollno == rollno) {
            for (int j = i; j < 99; j++) {
                stud[j] = stud[j + 1]; }
            stud[99].rollno = 0;
            strcpy(stud[99].name, "");
            stud[99].cgpa = 0.0;
            printf("Student with roll number %d deleted successfully.\n", rollno);
            return;  } }
    printf("Student with roll number %d not found.\n", rollno) }
void display() {
    printf("Student Database:\n");
    for (int i = 0; i < 100; i++) {
        if (stud[i].rollno != 0) {
            printf("%d\t%s\t%.2f\n", stud[i].rollno, stud[i].name, stud[i].cgpa);
        } } }
int main() {
    int choice, flag = 1;
     do {
        printf("\nStudent Database Menu:\n");
        printf("1. Create\n");
        printf("2. Add Student\n");
        printf("3. Delete Student\n");
        printf("4. Display Students\n");
        printf("5. Exit\n");

        printf("\nEnter your choice (1-5): ");
        scanf("%d", &choice);

        switch (choice) {
            case 1:
                create(); break;
            case 2:
                add(); break;
            case 3:
                delete_student(); break;
            case 4:
                display(); break;
            case 5:
                flag = 0;
                printf("Exiting program...\n"); break;
            default:
                printf("Invalid choice. Please try again.\n");
                break;
        }
    } while (flag);
    return 0; }
```

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OUTPUT:

```
Student Database Menu:
1. Create
2. Add Student
3. Delete Student
4. Display Students
5. Exit

Enter your choice (1-5): 1
Enter the number of students: 3
Student database created for 3 students.

Enter data for for 3 students.

Enter data for student 1:
Enter roll number: 1
Enter name: Atharva
Enter CGPA: 9.9

Enter data for student 2:
Enter roll number: 12
Enter name: Dhruv
Enter CGPA: 8.6

Enter data for student 3:
Enter roll number: 4
Enter name: Sarthak
Enter CGPA: 6.8
```

```
Enter your choice (1-5): 3
Enter roll number to delete: 4
Student with roll number 4 deleted successfully.

Student Database Menu:
1. Create
2. Add Student
3. Delete Student
4. Display Students
5. Exit

Enter your choice (1-5): 4
Student Database:
1   Atharva     9.90
12  Dhruv   8.60
```

```
Student Database Menu:
1. Create
2. Add Student
3. Delete Student
4. Display Students
5. Exit

Enter your choice (1-5): 2
Enter roll number: 2
Enter name: Tanishq
Enter CGPA: 8.1
Student added successfully at position 3.

Student Database Menu:
1. Create
2. Add Student
3. Delete Student
4. Display Students
5. Exit

Enter your choice (1-5): 4
Student Database:
1   Atharva     9.90
12  Dhruv   8.60
2   Tanishq 8.10
```