Q1)Program in c++ for students report cards using class.

Ans

```cpp
#include <iostream>
#include <string>
using namespace std;

class Student {
public:
    string name;
    int rollNumber;
    float marks[5];

    void getdata() {
        cout << "Enter the Name of student: ";
        cin >> name;
        cout << "Enter Roll Number: ";
        cin >> rollNumber;
        cout << "Enter the marks of student:" << endl;
        for (int i = 0; i < 5; i++) {
            cout << "Marks of subject " << i + 1 << " = ";
            cin >> marks[i];
        }
    }

    void printdata() {
        cout << "Name: " << name << endl;
        cout << "Roll Number: " << rollNumber << endl;
        cout << "Marks:" << endl;
        for (int i = 0; i < 5; i++) {
            cout << "Marks of subject " << i + 1 << " = " << marks[i] << endl;
            cout << "Grade: " << grades(marks[i]) << endl;
        }
        float totalMarks = marks[0] + marks[1] + marks[2] + marks[3] + marks[4];
        cout << "Total Marks = " << totalMarks << endl;
    }

    string grades(float subjectMarks) {
        if (40 <= subjectMarks && subjectMarks < 60) {
            return "D";
        } else if (subjectMarks < 40) {
            return "F";
        } else if (60 <= subjectMarks && subjectMarks < 65) {
            return "C";
```

```cpp
        } else if (65 <= subjectMarks && subjectMarks < 70) {
            return "C+";
        } else if (70 <= subjectMarks && subjectMarks < 75) {
            return "B";
        } else if (75 <= subjectMarks && subjectMarks < 80) {
            return "B+";
        } else if (80 <= subjectMarks && subjectMarks < 90) {
            return "A";
        } else {
            return "A+";
        }
    }
};

int main() {
    int n;
    cout << "Enter the number of students: ";
    cin >> n;
    Student student[n];

    for (int i = 0; i < n; i++) {
        cout << "Enter the details of student " << i + 1 << ":" << endl;
        student[i].getdata();
    }
    for (int i = 0; i < n; i++) {
        cout << "Details of student " << i + 1 << ":" << endl;
        student[i].printdata();
    }

    return 0;
}
```

Output :

```
Enter the number of students: 2
Enter the details of student 1:
Enter the Name of student: Pratham
Enter Roll Number: 24
Enter the marks of student:
Marks of subject 1 = 40
Marks of subject 2 = 50
Marks of subject 3 = 60
Marks of subject 4 = 70
Marks of subject 5 = 80
Enter the details of student 2:
Enter the Name of student: 90
Enter Roll Number: 12
Enter the marks of student:
Marks of subject 1 = 90
Marks of subject 2 = 100
Marks of subject 3 = 80
Marks of subject 4 = 40
Marks of subject 5 = 50
Details of student 1:
Name: Pratham
Roll Number: 24
Marks:
Marks of subject 1 = 40
Grade: D
Marks of subject 2 = 50
Grade: D
Marks of subject 3 = 60
Grade: C
Marks of subject 4 = 70
Grade: B
Marks of subject 5 = 80
Grade: A
Total Marks = 300
Details of student 2:
Name: 90
Roll Number: 12
```