7. Write a C program to count the number of students registered for three elective courses. Accept the names of n students, their choice of the elective (Say, the electives courses offered are Internet of Things, Advanced Java and J2EE and Advanced Data Structures).

Include the following operations:
1. Accept say x from the user. Display the names of the students who have opted for elective x

2. Count and display the total number of students present in each elective.

3. If count is less than 30, inform that the course will not be floated and ask the students who have opted the course to reselect their electives from the other two. Count and display the counts again.

4. Display the name of the students in each elective.

```c
#include<stdio.h>
struct student
{
      char name[25];
      int elec;
}s[200];
void input(int n1)
{
      static int i=0;
      for(;i<n1;i++)
      {
            printf("\nEnter Student Name\n");fflush(stdin);
            gets(s[i].name);
```

```c
            printf("Choose elective between\n1.Internet of
Things\n2.Advanced java and J2EE\n3.Advanced data structures\n");
            scanf("%d",&s[i].elec);
            if(s[i].elec<1||s[i].elec>3)
            {
                    printf("Invalid.Input again\n");
                    input(n1);
            }
        }
}
void dispx(int n1)
{
        static int i=0;
        int x;
        printf("\nEnter The elective where you wish to see name of
students\n");
        scanf("%d",&x);
        if(x<1||x>3)
        {
                    printf("Invalid. Input again\n");
                    dispx(n1);
                    return;
        }
        printf("\nNames: \n");
        for(i=0;i<n1;i++)
        {
                if(s[i].elec==x)
                puts(s[i].name);
        }
}
int *countdisp(int n1)
{
        int i,e[]={0,0,0};
        for(i=0;i<n1;i++)
        {
                if(s[i].elec==1)
                        e[0]++;
```

```c
                else if(s[i].elec==2)
                        e[1]++;
                else if(s[i].elec==3)
                        e[2]++;
        }
        printf("\nStudents in Internet Of Things: %d\n",e[0]);
        printf("Students in Advanced java and J2EE: %d\n",e[1]);
        printf("Students in Advanced Data structures: %d\n",e[2]);
        return e;

}
void floatco(int n1, int *e)
{
        static int i=0;
        int a,c[]={*e,*(e+1),*(e+2)};

        if(c[0]<30)
        {
        for(;i<n1;i++)
        {
                if(s[i].elec==1)
                {

                printf("\nName: %s \nCourse will not be floated choose
between\n1.Advanced java and J2EE\n2.Advanced Data
Structures\n",s[i].name);fflush(stdin);
                scanf("%d",&a);
                if(a<1||a>2)
                {
                        printf("Invalid.Enter again\n");
                        floatco(n1,c);
                        return;
                }
                if(a==1)
                {

                        s[i].elec=2;
```

```c
                c[1]++;
                c[0]--;

        }
        else
        {
                c[2]++;
                s[i].elec=3;
                c[0]--;
        }
        }
    }
    }
    else if(c[1]<30)
    {

    for(;i<n1;i++)
    {
        if(s[i].elec==2)
        {
        printf("\nName: %s \nCourse will not be floated choose
between\n1.Internet of things\n2.Advanced Data Structures\n");
        scanf("%d",&a);
        if(a<1||a>2)
        {
                printf("Invalid.Enter again\n");
                floatco(n1,c);
                return;
        }
        else if(a==1)
        {
                c[0]+=1;
                s[i].elec=1;
                c[1]-=1;
        }
        else
```

```c
            {
                    c[2]+=1;
                    s[i].elec=3;
                    c[1]-=1;
            }
            }
    }
    }
    else if(c[2]<30)
    {

    for(;i<n1;i++)
    {
            if(s[i].elec==3)
            {
            printf("\nName: %s \nCourse will not be floated choose
between \n1.Internet of things\n2.Advanced Java and J2EE\n");
            scanf("%d",&a);
            if(a<1||a>2)
            {
                    printf("Invalid.Enter again\n");
                    floatco(n1,c);
                    return;
            }
            else if(a==1)
            {
                    c[0]+=1;
                    s[i].elec=1;
                    c[2]-=1;
            }
            else
            {
                    c[1]+=1;
                    s[i].elec=2;
                    c[2]-=1;

            }
            }
```

```c
        }
    }
    printf("\nStudents in Internet Of Things: %d\n",c[0]);
    printf("Students in Advanced java and J2EE: %d\n",c[1]);
    printf("Students in Advanced Data structures: %d\n",c[2]);

}
dispname(int n1)
{
    int i;
    printf("\nStudents in Internet of things:\n");
    for(i=0;i<n1;i++)
    {
        if(s[i].elec==1)
        puts(s[i].name);
    }
    printf("\nStudents in Advanced Java and J2EE:\n");
    for(i=0;i<n1;i++)
    {
        if(s[i].elec==2)
        puts(s[i].name);
    }
    printf("\nStudents in Advanced Data Structures:\n");
    for(i=0;i<n1;i++)
    {
        if(s[i].elec==3)
        puts(s[i].name);
    }
}
int main()
{
    int n,i,x,*count;
    printf("Enter The Number of Students\n");//input no. Of students
    scanf("%d",&n);
    input(n);//input student details;
    dispx(n);// display names in elective based on choice entered
    count=countdisp(n);//counting no of students in each elective
```

floatco(n,count);//floating only ONE elective if elective has
students<50 (if more than one has less than 30 then iot->adv java-> adv
Ds is floated in that order)
        dispname(n);//displaying name of students in each elective
        return 0;

}

```
C:\Users\RAJ\Desktop\c prog\Java\q7.exe

Enter The Number of Students
5

Enter Student Name
Shashank
Choose elective between
1.Internet of Things
2.Advanced java and J2EE
3.Advanced data structures
1

Enter Student Name
Sharma
Choose elective between
1.Internet of Things
2.Advanced java and J2EE
3.Advanced data structures
2

Enter Student Name
Momo
Choose elective between
1.Internet of Things
2.Advanced java and J2EE
3.Advanced data structures
2

Enter Student Name
Raj
Choose elective between
1.Internet of Things
2.Advanced java and J2EE
3.Advanced data structures
1

Enter Student Name
Kanta
Choose elective between
1.Internet of Things
2.Advanced java and J2EE
3.Advanced data structures
5
Invalid.Input again

Enter Student Name
Kanta
Choose elective between
1.Internet of Things
2.Advanced java and J2EE
3.Advanced data structures
3

Enter The elective where you wish to see name of students
1

Names:
Shashank
Raj

Students in Internet Of Things: 2
Students in Advanced java and J2EE: 2
Students in Advanced Data structures: 1

Name: Shashank
Course will not be floated choose between
1.Advanced java and J2EE
2.Advanced Data Structures
3
Invalid.Enter again
```

```
C:\Users\RAJ\Desktop\c prog\Java\q7.exe

Name: Shashank
Course will not be floated choose between
1.Advanced java and J2EE
2.Advanced Data Structures
2

Name: Raj
Course will not be floated choose between
1.Advanced java and J2EE
2.Advanced Data Structures
1

Students in Internet Of Things: 0
Students in Advanced java and J2EE: 3
Students in Advanced Data structures: 2

Students in Internet of things:

Students in Advanced Java and J2EE:
Sharma
Momo
Raj

Students in Advanced Data Structures:
Shashank
Kanta
_____
Process exited after 97.93 seconds with return value 0
Press any key to continue . . .
```