```c
//M gayathri-185001050
#include<stdio.h>
#include<string.h>
#include "definitions.h"
int main()
{
 stud student[8],insf,ins,insl;
 int pos,retpos,del,print,n,ch=1;
 char sear[10];
 input(student);
 n=5;
 while(ch)
 {
  printf("\nenter choice 1. Insert a record in the front of the list\n2. Insert
a record at the end of the list\n3. Insert a record after a given Regno in the
list \n4. Search a given record in the list based on Name\n5.Delete a given
student record \n6. Display all students record\n7. Display the previous and
next record of a given student \n8. enter 0 to exit\n");
  scanf("%d",&ch);
  switch(ch)
  {
  case 1:
  {
   printf("\nenter details to insert a record in front of the list");
   n++;
   printf("\nname:");
   scanf("%s",insf.name);
   printf("\nenter marks of 5 subjects");
   for(int j=0;j<5;j++)
   scanf("%d",&insf.mark[j]);
   insf.regno=1;
   insertfront(student,insf);
   break;
  }
  case 2:
  {
   printf("\nenter details to insert a record in last of the list");
   n++;
   printf("\nname:");
   scanf("%s",insl.name);
   printf("\nenter marks of 5 subjects");
   for(int j=0;j<5;j++)
   scanf("%d",&insl.mark[j]);
   insl.regno=7;
   insertlast(student,insl);
   break;
  }
  case 3:
  {
   printf("\nenter details to insert a record in specified position");
   n++;
   printf("\nname:");
   scanf("%s",ins.name);
   printf("\nenter marks of 5 subjects");
   for(int j=0;j<5;j++)
   scanf("%d",&ins.mark[j]);
   ins.regno=pos;
   printf("\nenter the position to be inserted");
   scanf("%d",&pos);
   insert(student,ins,pos);
   break;
  }
  case 4:
  {
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   printf("\nenter the name to search the record");
   scanf("%s",sear);
   retpos=search(student,sear);
   printf("\nthe position of record is %d",retpos);
   break;
  }
  case 5:
  {
   printf("\nenter the record no to be deleted");
   n--;
   scanf("%d",&del);
   delete(student,del);
   break;
  }
  case 6:
  {
   displayall(student,n);
   break;
  }
  case 7:
  {
   printf("\nenter the position of record whose previous and next record is to
be displayed");
   scanf("%d",&print);
   disp(student,print);
   break;
  }
 }
}
 return 0;
}
//contents of definitions.h
typedef struct records
{
    int regno;
    char name[20];
    int mark[5];
}stud;
#include "prototype.h"
void input(stud student[])
{
    printf("\nenter details of student");
    for(int i=0;i<5;i++)
    {
        student[i].regno=i+1;
        printf("\nname:");
        scanf("%s",student[i].name);
        printf("\nenter marks of 5 subjects");
        for(int j=0;j<5;j++)
            scanf("%d",&student[i].mark[j]);
    }
    return;
}
void insertfront(stud student[],stud insf)
{
    for(int i=5;i>0;i--)
    {
        student[i]=student[i-1];
        student[i].regno+=1;
    }
    student[0]=insf;
}
void insertlast(stud student[],stud insl)
{
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        student[6]=insl;
}
void insert(stud student[],stud ins,int n)
{
    for(int k=7;k>n-2;k--)
    {
        student[k]=student[k-1];
        student[k].regno=k+1;
    }
    student[n-1]=ins;
    student[n-1].regno=n;
}
int search(stud student[],char sear[])
{
    for(int i=0;i<8;i++)
        if(strcmp(student[i].name,sear)==0)
            return i+1;
    return 0;
}
void delete(stud student[],int d)
{
    for(int t=d;t<8;t++)
    {
        student[t-1]=student[t];
        student[t-1].regno-=1;
    }
}
void displayall(stud student[],int y)
{
    for(int h=0;h<y;h++)
    {
        printf("\nRegno: %d",student[h].regno);
        printf("\nname: %s",student[h].name);
        printf("\nmarks:");
        for(int l=0;l<5;l++)
            printf("%d\t",student[h].mark[l]);
    }
}
void disp(stud student[],int p)
{
    printf("previous record\n");
    printf("Regno: %d",student[p-2].regno);
    printf("\nname: %s",student[p-2].name);
    printf("\nmarks:");
    for(int l=0;l<5;l++)
        printf("%d\t",student[p-2].mark[l]);
    printf("\n\nnext record");
    printf("\nRegno: %d",student[p].regno);
    printf("\nname: %s",student[p].name);
    printf("\nmarks:");
    for(int l=0;l<5;l++)
        printf("%d\t",student[p].mark[l]);
}

// contents of prototype.h
void input(stud student[]);
void insertfront(stud student[],stud insf);
void insertlast(stud student[],stud insl);
int search(stud student[],char sear[]);
void delete(stud student[],int d);
void displayall(stud student[],int y);
void disp(stud student[],int p);
```

```
/*sample i/o
gml8:Desktop csea68$ ./a.out

enter details of student
name:harini

enter marks of 5 subjects99 99 99 99 99

name:gayu

enter marks of 5 subjects88 88 88 88 88

name:yami

enter marks of 5 subjects77 88 99 90 88

name:vinay

enter marks of 5 subjects77 99 88 80 99

name:manju

enter marks of 5 subjects99 99 99 99 99

enter choice 1. Insert a record in the front of the list
2. Insert a record at the end of the list
3. Insert a record after a given Regno in the list
4. Search a given record in the list based on Name
5.Delete a given student record
6. Display all students record
7. Display the previous and next record of a given student
8. enter 0 to exit
2

enter details to insert a record in last of the list
name:yuva

enter marks of 5 subjects99 99 99 99 99

enter choice 1. Insert a record in the front of the list
2. Insert a record at the end of the list
3. Insert a record after a given Regno in the list
4. Search a given record in the list based on Name
5.Delete a given student record
6. Display all students record
7. Display the previous and next record of a given student
8. enter 0 to exit
4

enter the name to search the recordharini

the position of record is 1
enter choice 1. Insert a record in the front of the list
2. Insert a record at the end of the list
3. Insert a record after a given Regno in the list
4. Search a given record in the list based on Name
5.Delete a given student record
6. Display all students record
7. Display the previous and next record of a given student
8. enter 0 to exit
5

enter the record no to be deleted
1
```

enter choice 1. Insert a record in the front of the list
2. Insert a record at the end of the list
3. Insert a record after a given Regno in the list
4. Search a given record in the list based on Name
5.Delete a given student record
6. Display all students record
7. Display the previous and next record of a given student
8. enter 0 to exit
6

Regno: 1
name: gayu
marks:88  88  88  88  88
Regno: 2
name: yami
marks:77  88  99  90  88
Regno: 3
name: vinay
marks:77  99  88  80  99
Regno: 4
name: manju
marks:99  99  99  99  99
Regno: 32766
name: ??W?
marks:32767 181670473 1 1459813296  32767
enter choice 1. Insert a record in the front of the list
2. Insert a record at the end of the list
3. Insert a record after a given Regno in the list
4. Search a given record in the list based on Name
5.Delete a given student record
6. Display all students record
7. Display the previous and next record of a given student
8. enter 0 to exit
0

*/