```cpp
#include <vector>
#include <string>
#include <iostream>

using namespace std;

struct Alumno{
   string dni;
   int edad;
   float nota;
};

//indicates if a dni is correct or not
bool isDniOk( string cad){
   if (cad.size()!=9)return false;//at elast 9 elements
   if (!isalpha(cad[cad.size()-1]) ) return false;//last should be character

   //get the number part
   char letra=cad.back();//last character. Same as cad[cad.size()-1]
   cad.pop_back();//remove the last character
   //convert to number the remaining
   int number=stoi(cad);
   string letras="TRWAGMYFPDXBNJZSQVHLCKE";
   if (  letras[ number%letras.size()] ==toupper(letra))
      return true;
   else return false;
}

//prints main menu
void printMenu(){
   cout<<"1. Anadir"<<endl;
   cout<<"2. Imprimir datos"<<endl;
   cout<<"3. Imprimir todos"<<endl;
   cout<<"4. Modificar"<<endl;
   cout<<"5. Eliminar"<<endl;
   cout<<"6. Salir"<<endl;
}

//reads an integer value in the range [min,max] showing the desired message
int readOption(int min,int max,string message){
   int op;
   do{
      cout<<message<<endl;
      cin.clear();
      fflush(stdin);
      cin>>op;
      if (op<min || op>max)
         cout<<"Option not in range ("<<min<<","<<max<<"). Repeat"<<endl;
   }while( op<min || op>max);
   return op;
```

```
}

//read from console a dni until it is valid and returns it
//If the uer does not introduce a valid one and desists, returns a empty string
string readDni(){
   string dni;
   do{
      cout<<"Dni:"<<endl;
      cin>>dni;
      if (!isDniOk(dni)){
         cout<<"invalid dni. Retry (y/n)?"<<endl;
         char option;
         cin>>option;
         if (option!='y') return "";//returns an empty string
      }
   }while(!isDniOk(dni));
   return dni;
}

//modifies the alumno passed as parameter
//returns true if succeed and false otherwise
bool getFromConsole(Alumno  &a){

   a.dni=readDni();
   if (a.dni.size()==0) return false;
   cout<<"Age:"<<endl;
   cin>>a.edad;
   a.nota=readOption(0,10,"Mark");
   return true;
}

void print(Alumno &a){
   cout<<"Dni:"<<a.dni<<endl;
   cout<<"Age:"<<a.edad<<endl;
   cout<<"Mark:"<<a.nota<<endl;
}


//ask by console for a dni and find the corresponding student in the vector.
//returns the index of the searched students or -1 if not correct search
int searchStudentByDni(    Alumno alumnos[],int n){
   string dni=readDni();
   if (dni.size()==0) return -1;//no valid dni
   //search for the alumno
   for(int i=0;i<n;i++)
      if(dni==alumnos[i].dni)return i;
   return -1;
}

int main(int argc,char **argv)
```

```
{
  Alumno alumnos[10];
  int nStudents=0;

  int opcion=-1;
  do{
     printMenu();
     //read option
     opcion=readOption(1,6,"Select option:");

     switch (opcion) {
     case 1:
        if ( getFromConsole(alumnos[nStudents])) nStudents++;
        break;
     case 2:{
        if (nStudents>0){
           int index=searchStudentByDni(alumnos,nStudents);
           if (index==-1){cerr<<"Not found"<<endl;}
           else print(alumnos[index]);
        }
     }break;
     case 3:{
        for(int i=0;i<nStudents;i++)
           print(alumnos[i]);
     }break;
     case 4:{
        if (nStudents>0){
           int index=searchStudentByDni(alumnos,nStudents);
           if (index==-1){cerr<<"Not found"<<endl; }
           else{
              cout<<"Introduce the new data"<<endl;
              getFromConsole(alumnos[index]);
           }
        }
     }break;
     case 5:{
        if (nStudents>0){
           int index=searchStudentByDni(alumnos,nStudents);
           if (index==-1){cerr<<"Not found"<<endl; }
           else{ alumnos[index]=alumnos[nStudents-1];
              nStudents--;
           }
        }break;
     };
  };

}while(opcion!=6);
cout<<"FIN"<<endl;
}
```