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**ISLAMABAD
CAMPUS**

Data Structures and algorithm (CS09203)

Lab Report

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Experiment # 1

Data Handling into an array

Objective

To understand How to Handle data into array .

Software Tool

1. Microsoft Windows 7
2. Dev c++
3. Miktext editor

1 Theory

In this experiment we learn how to handle our data using an array and basic concept of linked list using arrays

It has 3 rules:

1. Input our data into array.
2. Replace our data to certain place on array .
3. move the element of the location which we replace and move it to next spot on array.

2 Task

2.1 Procedure: Task 1

In this We enter our data into an array which is students names and their marks

2.2 Procedure: Task 2

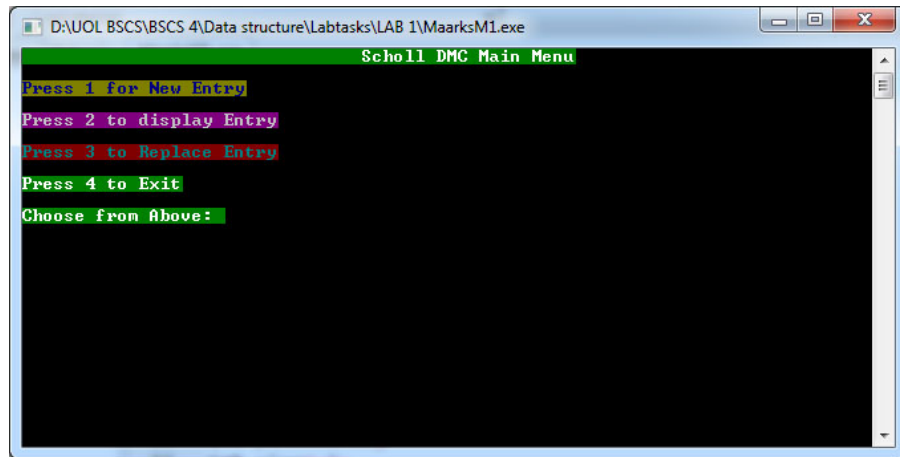


Figure 1: Main menu of my program

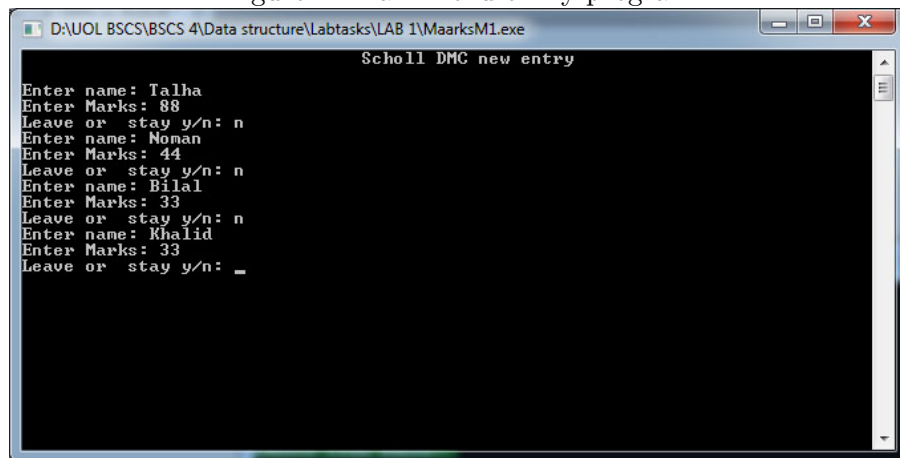


Figure 2: New entry into array

```

#include<stdio.h>
#include<iostream>
#include<dos.h>
#include<unistd.h>
#include<string>
#include<stdlib.h>
#include<Loadanim.h>
using namespace std;
string names[100];
int marks[100];
//Edit marks datatype
string EditName="\0";
int EditMarks;
//Position and size
int position=0;
int size=-1;
string Exit;

void InputMarks() { //New marks entry
    do {
        size++;
        cout<<"Enter _name:_";
        cin>>names[size];
        cout<<"Enter _Marks:_";
        cin>>marks[size];

        cout<<"Leave_or__stay_y/n:_";
        cin>>Exit;
    }while(Exit!="y");
} //End of input markd

void Display() { //Dsisplay Current Marrks
    do {
        for(int i=0;i<size+1;i++) {
            cout<<i<<" :)_ "<<names[i]<<" \t\t"<<marks[i]<<endl;
        }
        cout<<"Wana_exit_y/n:_";
        cin>>Exit;
    }while(Exit!="y");
}

```

```

} //End of Display

void Replace() { //replace Marks
system("cls");
do {
    do {
        system("cls");

        Display();
        cout<<" Choosse _number _from _above _u_wana _Replace : _";
        cin>>position;
        if(position>=size) {
            cerr<<" error !! _not _found\n";
            system("pause");
        }
    } while(position>=size);
    cout<<" Enter _new _name";
    cin>>EditName;
    cout<<" Enter _new _Marks";
    cin>>EditMarks;
    /*for (int i=size; i>position; i--) {
        names[i]=names[i-1];
        names[size]=EditName;
        marks[i]=marks[i-1];
        marks[size]=EditMarks;
    }*/
    names[position]=EditName;
    marks[position]=EditMarks;
    cout<<"WANT_TO_EXIT_y/n";
    cin>>Exit;
    } while(Exit!="y");

} //end of marks replacement

void list() {
    ColorInput Ci;
    system("cls");
    Ci.CustColor("\t\t\t\tScholl_DMC_Main_Menu\n\n",47);
    Ci.CustColor(" Press _1 _for _New_Entry\n\n",97);
    Ci.CustColor(" Press _2 _to _display _Entry\n\n",87);
    Ci.CustColor(" Press _3 _to _Replace _Entry\n\n",67);

```

```

        Ci.CustColor("Press 4 to Exit\n\n",47);
    }

    int main()//Main
    {
        LoadAnimate la;
        la.Loading(4,33);
        int choice;
        ColorInput Ci;
        system("cls");
        do {
            list();
            Ci.CustColor("Choose from Above: ",47);
            cin>>choice;
            cout<<Ci;
            switch (choice) {
                case 1://New entry
                    la.Loading(2,47);
                    system("cls");
                    cout<<"\t\t\t\tScholl DMC new entry\n\n";
                    InputMarks();
                    break;

                case 2://Display
                    la.Loading(2,27);
                    system("cls");
                    cout<<"\t\t\t\tScholl Marks Sheet\n\n";
                    cout<<"Names\t\t\t\tMarks\n\n";
                    Display();

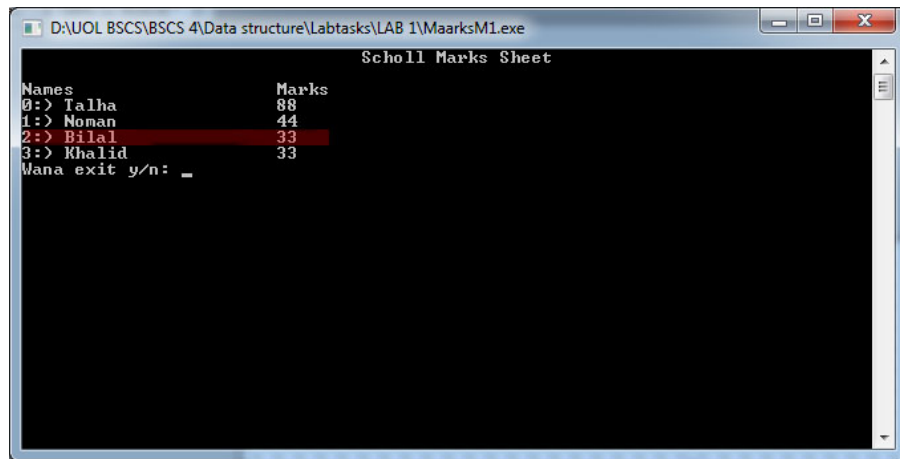
                    break;

                case 3://replacement
                    la.Loading(2,27);
                    system("cls");
                    cout<<"\t\t\t\tReplace Marks\n\n";
                    Replace();
                    break;
            }
        }while(choice!=4);
    }

```

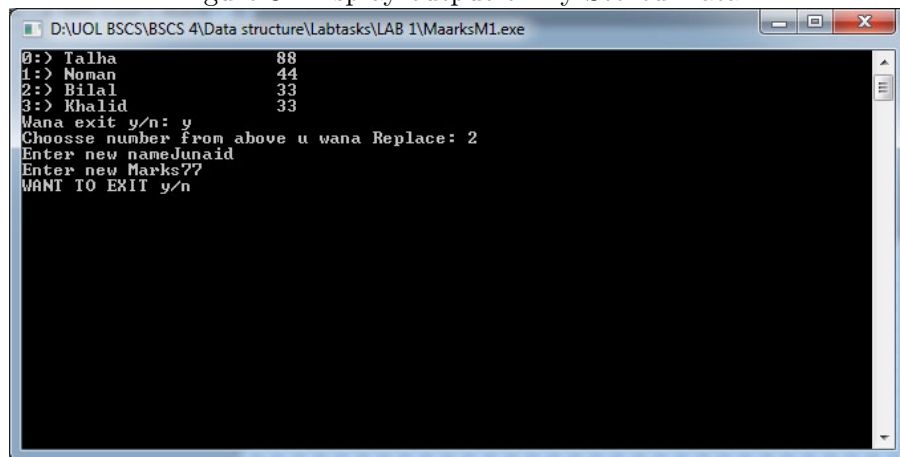
```
return 0; }
```

3 Output:



```
DAUOL BSCS\BSCS 4\Data structure\Labtasks\LAB 1\MarksM1.exe
Scholl Marks Sheet
Names      Marks
0:> Talha   88
1:> Noman   44
2:> Bilal   33
3:> Khalid  33
Wana exit y/n: _
```

Figure 3: Display output of my Stored Data



```
DAUOL BSCS\BSCS 4\Data structure\Labtasks\LAB 1\MarksM1.exe
Scholl Marks Sheet
Names      Marks
0:> Talha   88
1:> Noman   44
2:> Bilal   33
3:> Khalid  33
Wana exit y/n: y
Chosse number from above u wana Replace: 2
Enter new nameJunaid
Enter new Marks??
WANT TO EXIT y/n
```

Figure 4: Replace no array loacation Bilal With Junaid

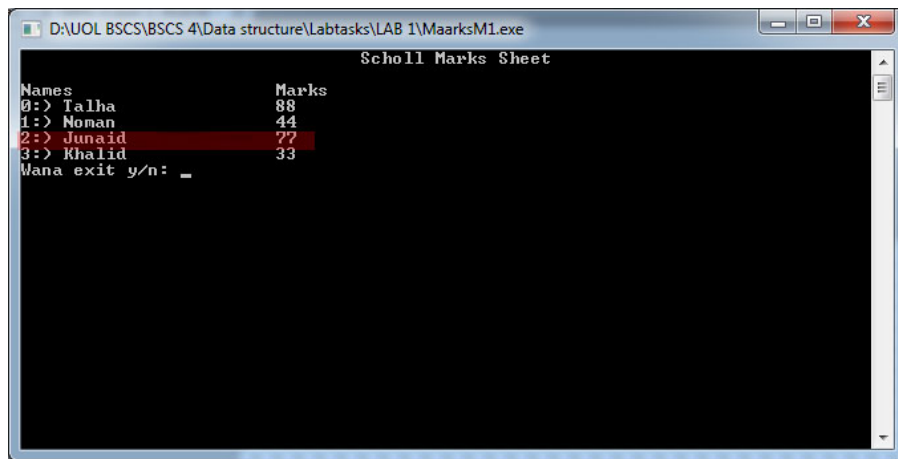


Figure 5: Replaced Bilal with junaaid in array location 2

4 Conclusion:

so we learn from this program that how to enter our data into an array, how to shift the data on specific Location to next array and put new data and this program also leads us to concept of link listing

We can implement it with object oriented programming where we can add a new object of certain class and work on it and replace a whole object of that with other class