****

**Green University of Bangladesh**

**Department of Computer Science and Engineering (CSE)**

**Faculty of Sciences and Engineering**

**Semester: (Summer, Year: 2021), B.Sc. in CSE (Day)**

**Course Title: Data Structure Lab**

**Course Code: CSE 106 Section: 213-DD**

**Lab Project Name:** GUB STUDENT HALL MANGEMENT SYSTEM

**Student Details**

|  |  |  |
| --- | --- | --- |
| **Name** | | **ID** |
| **1.** | Md. Robin Hossain | 213902105 |

**Submission Date: 11th September 2022**

**Course Teacher’s Name: Md. Sultanul Ovi**

**[For Teachers use only: Don’t Write Anything inside this box]**

|  |
| --- |
| **Lab Project Status**  **Marks: ………………………………… Signature: .....................**  **Comments: .............................................. Date: ..............................** |

Table of Contents

[**Chapter 1 Introduction**](#_heading=h.tyjcwt) 1

[1.1](#_heading=h.3dy6vkm) Introduction 3

[1.2](#_heading=h.1t3h5sf) Design Goals/Objective 5

[**Chapter 2**](#_heading=h.4d34og8) 6

[**Implementation of the Project**](#_heading=h.2s8eyo1) **7**

[2.2](#_heading=h.17dp8vu) Implementations 8

[2.3](#_heading=h.3rdcrjn) Screenshots 9

[**Chapter 3 Conclusion**](#_heading=h.26in1rg) **10**

[3.1](#_heading=h.lnxbz9) Learning Outcome 12

[3.2](#_heading=h.35nkun2) Future Scope 13

[**References**](#_heading=h.1ksv4uv) **14**

# Chapter 1 Introduction

## Introduction

Originally, C language is developed from two previous languages, BCPL and B. BCPL which were developed in 1967 by Martin Richards as a language for wring operating systems and compilers. C was evolved from B by Dennis Ritchie at Bell Laboratories and it was implemented in 1972. It initially became widely known as the development language of the UNIX operating system. Lots of today’s leading operating systems are written in C and C++. C language is mostly hardware independent as it is possible to write C programs that are portable to most computers.

Why we use c language C has been used successfully for each kind of programming problem thinkable from operating systems to spreadsheets to expert systems - and efficient compilers are accessible for machines ranging in power from the Apple Macintosh to the Cray supercomputers. The largest measure of C's success appears to be based on strictly sensible considerations:

1. The standard library concept;
2. the ease with that applications can be optimized by hand-coding isolated procedures;
3. a powerful and varied repertoire of operators;
4. the portability of the compiler;

## Design Goals/Objective

The goal of the project is to design to store student account who stay in GUB hostel:

It is made for hall manger who can operate this. He can add a new account when come a new student. He can also see all students account in sorted by students id. He can also search one account when he need. And he can also delete account when a student left hall.

1. **Implementation**

C source code

|  |
| --- |
| **#include<stdio.h>**  **#include<stdlib.h>**  **#include<math.h>**  **#include<conio.h>**  **void mainmenu();**  **void viewaccount();**  **void searchAccount();**  **void addaccount();**  **void deleteaccount();**  **void sorting();**  **struct account**  **{**  **int id;**  **int age;**  **int phn;**  **char \*name;**  **int nid;**  **int blance;**  **int mel;**  **struct account \*next;**  **};**  **int main()**  **{**  **struct account \*head=(struct account \*)malloc(sizeof(struct account));**  **head->name=(char \*)malloc(25\*sizeof(char));**  **head->next=NULL;**  **mainmenu(head);**  **return 0;**  **}**  **void mainmenu( struct account \*head)**  **{**  **system("cls");**  **int n;**  **printf("\t\t@\*WELLCOME TO GREEN UNIVERSITY STUDENT HALL MANGEMENT SYSTEM\*@\n");**  **printf("\t\t\t1. View account.\t2. Search account.\n\n\t\t\t3. Add account.\t\t4. Delete account.");**  **printf("\n\n\t\t\tEnter a Option :");**  **fflush(stdin);**  **scanf("%d",&n);**  **if(n==3)**  **addaccount(head);**  **else if(n==1)**  **sorting(head);**  **else if(n==2)**  **searchAccount(head);**  **else if(n==4)**  **deleteaccount(head);**  **}**  **void addaccount(struct account \*head)**  **{**  **system("cls");**  **struct account \*person=(struct account\*)malloc(sizeof(struct account));**  **person->name=(char \*)malloc(25\*sizeof(char));**  **printf("\t\t\t@##@ \*CREATE A NEW ACCOUNT.\*@##@\n\n");**  **printf("\n\t\t\t\tEnter Name :");**  **fflush(stdin);**  **gets(person->name);**  **printf("\t\t\t\tEnter age :");**  **scanf("%d",&person->age);**  **printf("\t\t\t\tEnter NID number :");**  **scanf("%d",&person->nid);**  **printf("\t\t\t\tEnter phone number :");**  **scanf("%d",&person->phn);**  **printf("\t\t\t\tEnter ID :");**  **scanf("%d",&person->id);**  **printf("\t\t\t\tEnter Blance :");**  **scanf("%d",&person->blance);**  **struct account \*p=head;**  **while(p->next!=NULL)**  **{**  **p=p->next;**  **}**  **p->next=person;**  **person->next=NULL;**  **printf("\nSave data succesfully....");**  **printf("\n\n\t\t\t1. To create another account.\n\t\t\t2.To go mainmenu.\n\t\t\tEnter option : ");**  **int n;**  **scanf("%d",&n);**  **if(n==1)**  **addaccount(head);**  **else if(n==2)**  **mainmenu(head);**  **}**  **void viewaccount(struct account \*head)**  **{**  **system("cls");**  **printf("\n\t\t\t\t@\*STUDENTS ACCOUNT\*@\n\n");**  **struct account \*p=head->next;**  **while(p!=NULL)**  **{**  **printf("\n\n\t\t\tName :%s",p->name);**  **printf("\n\t\t\tID No. :%d",p->id);**  **printf("\n\t\t\tAge : ",p->age);**  **printf("\n\t\t\tPhone No:%d",p->phn);**  **printf("\n\t\t\tNID No : %d ",p->nid);**  **printf("\n\t\t\tbalance : %d",p->blance);**  **p=p->next;**  **}**  **printf("\n\nTo go mainmenu press 1. ");**  **int n;**  **scanf("%d",&n);**  **if(n==1)**  **mainmenu(head);**  **}**  **void deleteaccount(struct account \*head)**  **{**  **printf("\n\nEnter ID :");**  **int i;**  **scanf("%d",&i);**  **struct account \*p=head;**  **struct account \*q=head->next;**  **while(p->next!=NULL)**  **{**  **if(p->id==i)**  **{**  **if(p->next==NULL)**  **{**  **p->next=NULL;**  **free(q);**  **printf("\nDelete succesfully.\n");**  **}**  **else**  **{**  **p->next=q->next;**  **free(q);**  **printf("\nDelete succesfully.\n");**  **}**  **}**  **p=p->next;**  **q=q->next;**  **}**  **printf("To go mainmenu press 1,\n\nTo delete another account press 0: ");**  **int n;**  **scanf("%d",&n);**  **if(n==1)**  **mainmenu(head);**  **else if(n==0)**  **deleteaccount(head);**  **}**  **void sorting(struct account \*head)**  **{**  **struct account \*q=(struct account \*)malloc(sizeof(struct account));**  **struct account \*p=head->next;**  **struct account \*i;**  **while(p->next!=NULL)**  **{**  **i=p->next;**  **while(i!=NULL)**  **{**  **if(p->id>i->id)**  **{**  **q->id=i->id;**  **q->age=i->age;**  **q->name=i->name;**  **q->nid=i->nid;**  **q->phn=i->phn;**  **q->blance=i->blance;**  **i->id=p->id;**  **i->age=p->age;**  **i->name=p->name;**  **i->nid=p->nid;**  **i->phn=p->phn;**  **i->blance=p->blance;**  **p->id=q->id;**  **p->age=q->age;**  **p->name=q->name;**  **p->nid=q->nid;**  **p->phn=q->phn;**  **p->blance=q->blance;**  **}**  **i=i->next;**  **}**  **p=p->next;**  **}**  **free(q);**  **viewaccount(head);**  **}**  **void searchAccount(struct account \*head)**  **{**  **system("cls");**  **int p,c;**  **c=0;**  **printf("\t\t\t\tSearch account\n\n");**  **printf("\t\tEnter the ID :");**  **scanf("%d",&p);**  **struct account\*q=head;**  **while(q!=NULL)**  **{**  **if(q->id==p)**  **{**  **printf("\t\tName : %s\n",q->name);**  **printf("\t\tAge : %d\n",q->age);**  **printf("\t\tID : %d\n",q->id);**  **printf("\t\tNID No : %d\n");**  **printf("\t\tphone No: %d\n",q->phn);**  **printf("\t\tBlanc : %d",q->blance);**  **c++;**  **}**  **q=q->next;**  **}**  **if(c==0)**  **printf("\n\t\tAccount not found.\n");**  **printf("\n\n\t\t1. For again search.\n\t\t2. To go mainmenu.\n\t\tEnter option : ");**  **scanf("%d",&c);**  **if(c==2)**  **searchAccount(head);**  **else if(c==3)**  **mainmenu(head);**  **}** |

**Screenshots**

|  |
| --- |
| * + - 1. **Main menu.**   **C:\Users\MHRobin\Desktop\mainmenu.PNG** |

|  |
| --- |
| 1. Add Account.   C:\Users\MHRobin\Desktop\createnewaccount1.PNG |

|  |
| --- |
| 1. View account.   C:\Users\MHRobin\Desktop\1view account.PNG |

|  |
| --- |
| Search account.C:\Users\MHRobin\Desktop\searchaccount.PNG |

|  |
| --- |
| Search account when no match id.C:\Users\MHRobin\Desktop\search2.PNG |

# Chapter 3 Conclusion

**Learning Outcome**

The GUB HALL management system is designed for hall manger to add new account, display all students account, search account.

From this assignment, I have learnt to implement a few C and data structure concept in the future projects such as function, while statement, arrays, pointers, structures, linked list, sorting and searching in the program.

# References

1. Author Initial. Author Surname, Title. City: Publisher, Year Published, p. Pages Used.
2. A. Rezi and M. Allam, ”Techniques in array processing by means of transforma- tions, ” in Control and Dynamic Systems, Vol. 69, Multidemsional Systems, C. T. Leondes, Ed. San Diego: Academic Press, 1995, pp. 133-180.
3. O. B. R. Strimpel, ”Computer graphics,” in McGraw-Hill Encyclopedia of Science and Technology, 8th ed., Vol. 4. New York: McGraw-Hill, 1997, pp. 279-283.
4. K. Schwalbe, Information Technology Project Management, 3rd ed. Boston: Course Technology, 2004.