**SRS DUCUMENTATION**

**PROJECT:**

**STUDENT INFORMATION MANAGEMENT SYSTEM (SIMS)**

**LAB BATCH: 61**

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**INTRODUCTION**

Handling one of the major practical, applicative and highly useful topic , the project topic of our batch reads:- “STUDENT INFORMATION MANAGEMENT SYSTEM(SIMS)”.....

As the name suggests, the project is meant for storing necessary database of a student. A student’s database includes his attributes like roll no, name, department, date of birth ,contact number and cpi. These are the general required attributes for the identity of a student in IITB.

Typically SIMS is meant for both the staff as well as student use but the right of modification of student’s data stands only with the staff members , not the students. Modification is secured by a password program which on entering only the correct administrator password lets the staff members edit, modify or delete any student’s information. The students can see their data whenever they wish to but can’t edit them.

A student will just have to enter his roll no to see his database. For that sake, the user will be asked his authentication whether he is a staff member or a student on the commence of the program.

Rest all goes well if its well implemented. Project structure as is decided comes in subsequent pages.

Hope u Enjoy…..

**GROUP MEMBERS**

**Roll no Name**

110050075SreeMeghana **\_** Thotakuri**(**groupleader**)**

115320006 Suraj Baghotiya

115280025 Swati Verma

110260006 Abhishek Ukey

115060016 Upasana dhar

110040075 Sumit Kumar Patne

**WORK DISTRIBUTION**

Upasana Dhar. - addition of new information

Swati Verma. - searching of information on entering roll no.or department

Suraj – deletion and modification of existing information

Abhishek Anand Ukey – Authentication

Thotakuri Sree Meghana- Graphics

Sumit kumar patne – sorting.

PROJECT DESCRIPTION

As you run SIMS, you get two options on your screen that asks you whether you are a staff member or a student to let you to your corresponding business.

We have done this using switch,

Pressing ‘m’ lets you to the staff login and ‘s’ to the student’s.

If you are the staff member you can edit the information of the student, so your staff login will be secured by a master password which the designated staff should know.

On pressing ‘m’, you will be provided the following options …to view student info list, to add students to the list, department wise search of student, remove a student from the list and edit an existing student’s information.

On pressing ‘s’, the student can just view his information.

The student will get three options …. to view the student info list, departmentwise search and roll no wise search.

The following attributes are included in a student’s information list in this format :

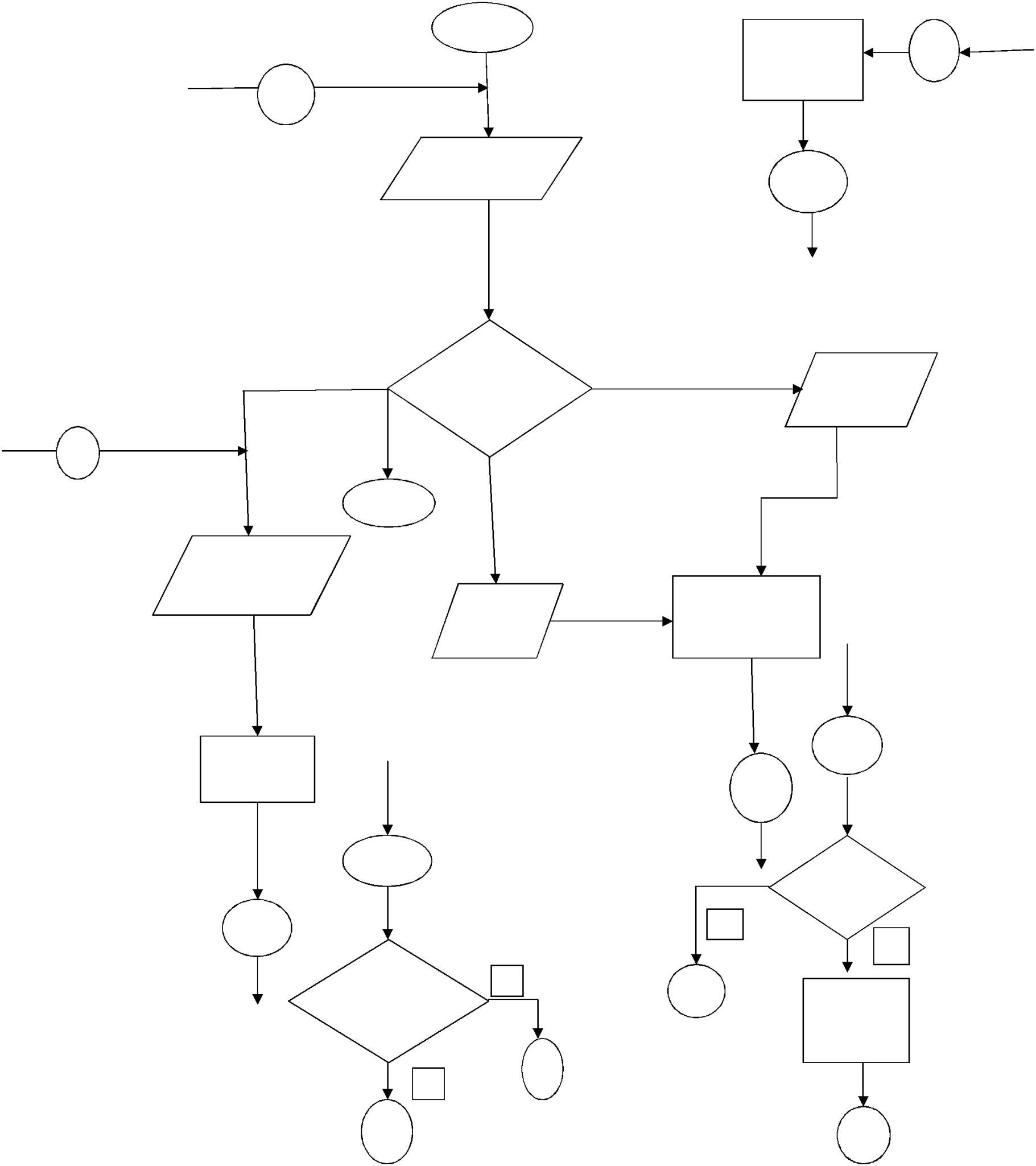
1. Roll no
2. Name
3. Department
4. Hostel
5. Date of birth
6. Contact
7. C.P.I

FLOWCHART OF THE PROJECT

ON THE NEXT PAGE…..

Note: a is input choice entered by the user and b is information input to be used

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  |  | Start | Storage | In |  |
|  |  |  |  |  |
|  |  |  |  |  |  |
|  | A |  |  |  |  |  |
|  |  |  | Input choice | Out |  |  |
|  |  |  |  |  |  |
|  | **ADD** |  | Choice=? |  | Input id |  |
|  |  |  |  |  |
|  |  |  |  |  |  |
| B |  |  |  | **DELETE, MODIFY** |  |  |
|  |  |  |  |  |  |
|  |  | Stop |  | **OR** |  |  |
|  |  |  |  |  |  |
|  | Input |  |  | **SEARCH** |  |  |
|  |  |  |  |  |  |
|  | student info |  | Input id | search |  |  |
|  |  |  |  |  |
|  |  |  |  |  |  |



|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Storing |  |  | out |  |
|  |  |  |  |
| info |  |  | In |  |
| out |  |  | Record |  |
|  |  |  |  |
| In |  |  | exists ? |  |
|  |  | N |  |
|  |  | Y |  |
|  |  |  |  |
| Add more | N | A | Delete or |  |
|  |  |  |
| info ? |  |  |  |
|  |  | modify |  |
|  |  |  |  |
|  | Y | A |  |  |
|  |  |  |  |
| B |  |  | A |  |
|  |  |  |  |

MAIN PROGRAM

#include <assert.h>

#include "bitmap.h"

#include <iostream>

#include <stdio.h>

#include<cstring>

#include<cstdlib>

#include"ezwin.h"

using namespace std;

void delete\_student(int);

void print\_database();

void add();

void search(int);

void modify\_student(int);

void search\_dept(char\*dpt);

SimpleWindow W1("SIMS-Student Information Management System", 25.0, 15.0, Position(1.0, 1.0));

SimpleWindow W2(" SIMS ",25.0, 20.0, Position(2.0, 2.0));

void delete\_student(int rn){

char string[10000];

FILE\* temp;

temp=fopen("temp.txt","a");

if(temp==NULL){

cout<<"Error opening file to write\n";

return;

}

FILE \*info;

info=fopen("data.txt","r");

if(info==NULL){

cout<<"file not found"<<endl;

return ;

}

int found=0;

int i=0,k=0,check=0;

char sroll[10],sname[50],sdept[60],shostel[10],sdob[15];char scontact[15],scpi[10];

fgets(string,9999,info);

while(!feof(info))

{

int num=0;

while(string[k]!=' ')

{

sroll[i]=string[k];num=num\*10+(string[k]-48);

i++;

k++;

}

sroll[i]='\0';i=0;k++;

while(string[k]!=' ')

{

sname[i]=string[k];

i++;k++;

}

sname[i]='\0';

i=0;k++;

while(string[k]!=' ')

{

sdob[i]=string[k];

i++;

k++;

}

sdob[i]='\0';i=0;k++;

while(string[k]!=' ')

{

scontact[i]=string[k];

i++;

k++;

}

scontact[i]='\0';i=0;k++;

while(string[k]!=' ')

{

sdept[i]=string[k];

i++;

k++;

}

sdept[i]='\0';i=0;

k++;

while(string[k]!=' ')

{

shostel[i]=string[k];

i++;

k++;

}

shostel[i]='\0';i=0;

k++;

while(string[k]!='\0')

{

scpi[i]=string[k];

i++;

k++;

}

scpi[i]='\0';i=0;k=0;

if(rn==num){

found=1;

cout<<"Student found in the database\n";

}

else { fprintf(temp,"%s %s %s %s %s %s %s\n",sroll,sname,sdept,shostel,sdob,scontact,scpi);}

fgets(string,9999,info);

}

fclose(info);

fclose(temp);

remove("data.txt");

rename("temp.txt","data.txt");

if(found==1)cout<<"Student deleted from database\n";

else cout<<"Student not found in the database\n";

return;

}

void print\_database(){

char string[10000];

FILE \*info;

info=fopen("data.txt","r");

if(info==NULL)

{ cout<<"file not found"<<endl;

return ;

}

int i,k,count=0;

char sroll[10],sname[50],sdept[60],shostel[10],sdob[15],scontact[15],scpi[10];

fgets(string,9999,info);

while(!feof(info))

{

i=0;k=0;

while(string[k]!=' ')

{

sroll[i]=string[k];

i++;

k++;

}

sroll[i]='\0';i=0;k++;

while(string[k]!=' ')

{

sname[i]=string[k];

i++;k++;

}

while(i<15)

{

sname[i]=' ';i++;

}

sname[i]='\0';

i=0;k++;

while(string[k]!=' ')

{

sdept[i]=string[k];

i++;

k++;

}

sdept[i]='\0';i=0;k++;

while(string[k]!=' ')

{

shostel[i]=string[k];

i++;

k++;

}

shostel[i]='\0';i=0;k++;

while(string[k]!=' ')

{

sdob[i]=string[k];

i++;

k++;

}

sdob[i]='\0';i=0;k++;

while(string[k]!=' ')

{

scontact[i]=string[k];

i++;

k++;

}

scontact[i]='\0';i=0;k++;

while(string[k]!='\0')

{

scpi[i]=string[k];

i++;

k++;

}

scpi[i]='\0';

cout<<sroll<<' '<<sname<<' '<<sdept<<' '<<shostel<<' '<<sdob<<' '<<scontact<<' '<<scpi<<' '<<endl;

fgets(string,9999,info);

}

fclose(info);

}

//upasana's program

class student{

char stdntname[60];

char stdntrollnumber[10];

char stdntdepartment[60];

char stdnthostel[5];

char stdntDOB[10];

int stdntcontactno;

float stdntcpi;

public:

void setname(char\*nm);

void getname(char\*nm);

void setrollnumber(char\*rn);

void getrollnumber(char\*rn);

void setdepartment(char\*dp);

void getdepartment(char\*dp);

void sethostel(char\*hn);

void gethostel(char\*hn);

void setDOB(char\*db);

void getDOB(char\*db);

void setcontactno(int cn);

int getcontactno();

void setcpi(float cpi);

float getcpi();

};

void student::setname(char\*nm)

{

strcpy(stdntname,nm);

}

void student::setrollnumber(char\*rn)

{

strcpy(stdntrollnumber,rn);

}

void student::setdepartment(char\*dp)

{

strcpy(stdntdepartment,dp);

}

void student::sethostel(char\*hn)

{

strcpy(stdnthostel,hn);

}

void student::setDOB(char\*db)

{

strcpy(stdntDOB,db);

}

void student::setcontactno(int cn)

{

stdntcontactno=cn;

}

void student::setcpi(float cpi)

{

stdntcpi=cpi;

}

void student::getname(char\*nm)

{

strcpy(nm, stdntname);

}

void student::getdepartment(char\*dp)

{

strcpy(dp, stdntdepartment);

}

void student::getrollnumber(char\*rn)

{

strcpy(rn, stdntrollnumber);

}

void student::gethostel(char\*hn)

{

strcpy(hn, stdnthostel);

}

void student::getDOB(char\*db)

{

strcpy(db, stdntDOB);

}

int student::getcontactno()

{

return stdntcontactno;

}

float student::getcpi()

{

return stdntcpi;

}

void add()

{

student s;

char sname[60],sroll[10],sdpt[60],shostel[5],sdob[10];int scntct;

float scpi;

FILE\*fp;

fp=fopen("data.txt","a");

if(fp==NULL)

{

cout<<"Error opening file\n";

return ;

}

cout<<"enter name of the student without spaces: ";

cin>>sname;

s.setname(sname);

s.getname(sname);

cout<<"Roll no.:";

cin>>sroll;

s.setrollnumber(sroll);

s.getrollnumber(sroll);

cout<<"enter department name without spaces\n";

cin>>sdpt;

s.setdepartment(sdpt);

s.getdepartment(sdpt);

cout<<"hostel : ";

cin>>shostel;

s.sethostel(shostel);

s.gethostel(shostel);

cout<<"D.O.B : ";

cin>>sdob;

s.setDOB(sdob);

s.getDOB(sdob);

cout<<"Contact no.:";

cin>>scntct;

s.setcontactno(scntct);

scntct=s.getcontactno();

cout<<"C.P.I : ";

cin>>scpi;

s.setcpi(scpi);

scpi=s.getcpi();

fprintf(fp,"%s %s %s %s %s %d %f\n",sname,sroll,sdpt,shostel,sdob,scntct,scpi);

cout<<"data written successfully\n";

fclose(fp);

return ;

}

//swati's program

void search(int roll){

char string[10000];

FILE \*info;

info=fopen("data.txt","r");

if(info==NULL)

{

cout<<"file not found"<<endl;

return ;

}

int i=0,j, k=0,check=0;

char sroll[10],sname[50],sdept[60],shostel[10],sdob[15];int numb;char scontact[15],scpi[10];

fgets(string,9999,info);

while(!feof(info))

{

numb=0;

while(string[k]!=' ')

{

sroll[i]=string[k];numb=numb\*10+(string[k]-48);

i++;

k++;

}

sroll[i]='\0';i=0;k++;

while(string[k]!=' ')

{

sname[i]=string[k];

i++;k++;

}

while(i<15)

{

sname[i]=' ';i++;

}

sname[i]='\0';

i=0;k++;

while(string[k]!=' ')

{

sdept[i]=string[k];

i++;

k++;

}

sdept[i]='\0';i=0;

k++;

while(string[k]!=' ')

{

shostel[i]=string[k];

i++;

k++;

}

shostel[i]='\0';i=0;

k++;

while(string[k]!=' ')

{

sdob[i]=string[k];

i++;

k++;

}

sdob[i]='\0';i=0;k++;

while(string[k]!=' ')

{

scontact[i]=string[k];

i++;

k++;

}

scontact[i]='\0';i=0;k++;

while(string[k]!='\0')

{

scpi[i]=string[k];

i++;

k++;

}

scpi[i]='\0';i=0;k=0;

if(numb==roll)

{

check=0;

cout<<"\n\t\tRoll :"<<numb<<"\n\t\t Name :"<<sname<<"\n\t\tD.O.B. :"<<sdob<<"n\t\t Contact no.:"<<scontact<<"\n\t\tDepartment :"<<sdept<<"\n\t\t Hostel :"<<shostel<<"\n\t\tC.P.I. :"<<scpi<<endl;

break;

}

else

{

check+=1;

}

fgets(string,9999,info);

}

if(check!=0)

cout<<"\tGiven roll does not exist"<<endl;

fclose(info);

return;

}

//modified part of suraj's program

void modify\_student(int rn){

char string[10000];char outstring[10000];

FILE \*info;

info=fopen("data.txt","r");

if(info==NULL)

{ cout<<"file not found"<<endl;

return ;

}

FILE \*temp;

temp=fopen("temp.txt","a");

if(temp==NULL){

cout<<"Error opening file to write\n";

return;

}

int found=0;

int i,k,count=0,numb=0;

char sroll[10],sname[50],sdept[60],shostel[10],sdob[15],scontact[15],scpi[10];

fgets(string,9999,info);

while(!feof(info))

{

i=0;k=0;

while(string[k]!=' ')

{

sroll[i]=string[k];numb=numb\*10+(string[k]-48);

i++;

k++;

}

sroll[i]='\0';i=0;k++;

while(string[k]!=' ')

{

sname[i]=string[k];

i++;k++;

}

sname[i]='\0';

i=0;k++;

while(string[k]!=' ')

{

sdob[i]=string[k];

i++;

k++;

}

sdob[i]='\0';i=0;k++;

while(string[k]!=' ')

{

scontact[i]=string[k];

i++;

k++;

}

scontact[i]='\0';i=0;k++;

while(string[k]!=' ')

{

sdept[i]=string[k];

i++;

k++;

}

sdept[i]='\0';i=0;k++;

while(string[k]!=' ')

{

shostel[i]=string[k];

i++;

k++;

}

shostel[i]='\0';i=0;k++;

while(string[k]!='\0')

{

scpi[i]=string[k];

i++;

k++;

}

scpi[i]='\0';

if(rn==numb){

found=1;

cout<<"Student found in the database\n";

cout<<"enter modified hostel number:\n ";

cin>>shostel;

cout<<"enter enter modified DOB :\n";

cin>>sdob;

cout<<"enter new contact number\n";

cin>>scontact;

cout<<"enter new cpi\n";

cin>>scpi;

}

sprintf(outstring,"%s %s %s %s %s %s %s\n",sname,sroll,sdept,shostel,sdob,scontact,scpi);

fputs(outstring,temp);

fgets(string,9999,info);

}

fclose(info);

fclose(temp);

remove("data.txt");

rename("temp.txt","data.txt");

if(found==1){ cout<<"\tStudent modified from database\n"; }

else { cout<<"\tStudent not found in the database\n"; }

return;

}

//dept search

void search\_dept(char \*dpt)

{

char string[10000];

FILE \*info;

info=fopen("modify.txt","r");

if(info==NULL)

{ cout<<"file not found"<<endl;

return ;

}

int i,k,count=0;

char sroll[10],sname[50],sdept[60],shostel[10],sdob[15],scontact[15],scpi[10];

fgets(string,9999,info);

while(!feof(info))

{

i=0;k=0;

while(string[k]!=' ')

{

sroll[i]=string[k];

i++;

k++;

}

sroll[i]='\0';i=0;k++;

while(string[k]!=' ')

{

sname[i]=string[k];

i++;k++;

}

while(i<15)

{

sname[i]=' ';i++;

}

sname[i]='\0';

i=0;k++;

while(string[k]!=' ')

{

sdept[i]=string[k];

i++;

k++;

}

sdept[i]='\0';i=0;k++;

while(string[k]!=' ')

{

shostel[i]=string[k];

i++;

k++;

}

shostel[i]='\0';i=0;k++;

while(string[k]!=' ')

{

sdob[i]=string[k];

i++;

k++;

}

sdob[i]='\0';i=0;k++;

while(string[k]!=' ')

{

scontact[i]=string[k];

i++;

k++;

}

scontact[i]='\0';i=0;k++;

while(string[k]!='\0')

{

scpi[i]=string[k];

i++;

k++;

}

scpi[i]='\0';

if(strcmp(dpt,sdept)==0)

{

count+=1;

cout<<count<<' ';

cout<<"roll :"<<sroll<<endl;

cout<<"Name :"<<sname<<endl;

cout<<"Department :"<<sdept<<endl;

cout<<"Hostel :"<<shostel<<endl;

cout<<"Contact no. :"<<scontact<<endl;

cout<<"C.P.I :"<<scpi<<endl;

}

fgets(string,9999,info);

}

if(count==0)

cout<<"no student found"<<endl;

fclose(info);

return;

}

int ApiMain() {

W1.Open();

assert(W1.GetStatus() == WindowOpen);

W1.RenderText(Position(6.0,6.0),Position(16,7),"Welcome to SIMS",Red);

W1.RenderText(Position(6.0,8.0),Position(16,9),"Student login: Press s",Red);

W1.RenderText(Position(6.0,10.0),Position(16,11),"Master login : press m",Red);

char l;

cin>>l;

if (l=='m') {

W1.RenderText(Position(8.0,12.0),Position(16,14),"Enter the Master password:",Blue);

int p;

cin>>p;

if(p==123456)

{

W1.Close();

W2.Open();

assert(W2.GetStatus() == WindowOpen);

W2.RenderText(Position(2.0,2.0),Position(10,4)," < 1 > . Veiw student info. list ",Blue);

W2.RenderText(Position(2.0,4.0),Position(10,6)," < 2 > . Add students from the list ",Blue);

W2.RenderText(Position(2.0,6.0),Position(10,8)," < 3 > . Search for a student on Roll.no basis ",Blue);

W2.RenderText(Position(2.0,8.0),Position(10,10),"< 4 > . Remove a student from the list ",Blue);

W2.RenderText(Position(2.0,10.0),Position(10,12),"< 5 > . Edit an existing students information ",Blue);

W2.RenderText(Position(4.0,11.0),Position(10,14)," Press the number before to got to the coressponding function: ",Magenta);

int c;

cin>>c;

W2.Close();

switch(c)

{

case 1 :

{

print\_database();break;

}

case 2 :

{

add();break;

}

case 3 :

{

int roll;

cout<<"\t\t enter your roll no."<<endl;

cin>>roll;

if(roll/100000000!=1 || roll%1000000000!=roll)

{

cout<<"\t\t invalid roll"<<endl;return -1;

}

else

{

search(roll);

}break;

}

case 4 :

{

int rn;

cout<<"\t\t Please enter roll number of the student to be deleted\n";

cin>>rn;

delete\_student(rn);break;

}

case 5:

{

cout<<"\t\t Please enter roll number of the student to be modified\n";

int rn;

cin>>rn;

modify\_student(rn);

break;

}

}

}

else

{

W1.RenderText(Position(10.0,11.0),Position(16,15),"Incorrect password: try again",Blue);

cin>>l;

}

}

if (l=='s')

{

W1.Close();

W2.Open();

assert(W2.GetStatus() == WindowOpen);

W2.RenderText(Position(2.0,2.0),Position(10,4)," < 1 > . Veiw student info. list ",Blue);

W2.RenderText(Position(2.0,4.0),Position(10,6)," < 2 > . Search for a student on Roll.no basis ",Blue);

W2.RenderText(Position(2.0,6.0),Position(10,8)," < 3 > . Department wise search of students ",Blue);

W2.RenderText(Position(2.0,9.0),Position(10,11)," Press the number before to got to the coressponding function: ",Blue);

int c;

cin>>c;

W2.Close();

switch(c)

{

case 1 :

{

print\_database();break;

}

case 2 :

{

int roll;

cout<<"\t\tenter your roll no."<<endl;

cin>>roll;

if(roll/100000000!=1 || roll%1000000000!=roll)

{

cout<<"\t\t\tinvalid roll"<<endl;return -1;

}

else

{

search(roll);

}break;

}

case 3 :

{

char dpt[60];

cout<<"\t\t enter department name(in lower case without space)"<<endl;

cin>>dpt;

search\_dept(dpt);break;

}

}

}

return 0;

}

FILES TO BE USED

1. Student’s information data file – A .txt file named as ‘data.txt’

All information that gets modified or deleted is from this file.

ASSUMPTIONS MADE IN OUR PROJECT

* The information system is only for B.Tech students whose roll no doesn’t include any alphabet.
* We have to switch between Terminal and SimpleWindow everytime input is needed.

LIMITATIONS OF OUR PROJECT

* A student can just view his cpi, not marks.
* There is no retrieval of information once deleted.So the staff has to be vigilant.
* Output of the program is only on the terminal and not on the window.
* Project is not much interactive , jumping between terminal to simple window can irritate the user using it.
* Some of the functions (delete\_database,modify\_database,add\_database) are not working properly. these functions are unable to read and print roll no. add function is not taking datas correctly and giving some garbage value for some of the parameters.

HEADER FILES INCLUDED

* Assert.h
* bitmap.h
* iostream
* stdio.h
* cstring
* cstdlib
* ezwin.h

REFRENCES:

1. [www.cplusplus.com](http://www.cplusplus.com/)
2. Ez windows
3. Cohoon and Davidson

IDEAS FOR FUTURE WORK

We have program named as cpi calculator but unfortunately we weren’t able to include them, but that function can be included. It will ask students to enter their marks and grades and will display the cpi.