**Oops Innovation**

**Aim- To perform the Education board CGPA system Using few concepts of Oops.**

**#Code**

#include <iostream.h>

#include <conio.h>

#include <string.h>

#include <stdlib.h>

//base class

class board

{

public:

int e\_year;

char b\_name[10];

int b\_code;

void showboard()

{

cout << "==================================================================================="; cout <<

"\n BOARD INFORMATION \n";

cout << "==================================================================================="; cout << "\nPlease enter board name:";

cin >> b\_name;

cout << "Please enter board code:";

cin >> b\_code;

}

};

//Single level inheritance

class centre : public board

{

public:

char c\_name[20];

int e\_year, t\_student, a\_can, p\_student, a\_student;

void cen\_info()

{

cout << "\n\ncentre informaton";

cout << "\nPlease enter centre name:";

cin >> c\_name;

cout << "Please enter the exam year:";

cin >> e\_year;

}

void grade\_info()

{

cout << "enter number A+ candidates:";

cin >> a\_can;

cout << "enter number of B to E candidates:";

cin >> p\_student;

cout << "enter number of F candidates:";

cin >> a\_student;

t\_student = a\_can + p\_student + a\_student;

cout << "total student is:";

cout << t\_student;

}

};

//Heirarchical Inheritance

class student : public board

{

char s\_name[15];

char s\_id[10];

float s\_gpa;

public:

void getinfo()

{

char name[15], id[10];

cout << "\n\nstudents result information";

cout << "\nPlease insert students name:";

cin >> name;

//use of copy string to display full name

strcpy(s\_name, name);

cout << "Please insert students roll no.:";

cin >> id;

strcpy(s\_id, id);

}

void showinfo()

{

cout << "\n\n INFORMATION\n\n";

cout << "Name:" << s\_name << "\n\n";

cout << "Roll no.:" << s\_id << "\n\n";

cout << "CGPA:" << s\_gpa << "\n\n";

}

float showgrade(int s);

//Use of inline function

inline void calculate()

{

float gp, sum = 0;

int s;

cout << "\nenter score in English:";

cin >> s;

gp = showgrade(s);

sum = sum + gp;

cout << "\nenter score in Computer Science:";

cin >> s;

gp = showgrade(s);

sum = sum + gp;

cout << "\nenter score in Math:";

cin >> s;

gp = showgrade(s);

sum = sum + gp;

cout << "\nenter score in Physics:";

cin >> s;

gp = showgrade(s);

sum = sum + gp;

cout << "\nenter score in Chemistry:";

cin >> s;

gp = showgrade(s);

sum = sum + gp;

s\_gpa = sum / 5;

}

};

//working outside the class

float student::showgrade(int s)

{

float g;

if ((s >= 90) && (s <= 100))

g = 10.0;

else if ((s < 90) && (s >= 80))

g = 9.00;

else if ((s < 80) && (s >= 70))

g = 8.0;

if ((s < 70) && (s >= 60))

g = 7.00;

else if ((s < 60) && (s >= 50))

g = 6.00;

else if ((s < 50) && (s >= 33))

g = 5.00;

else if ((s < 30) && (s >= 0))

g = 0.00;

return g;

}

//multilevel inheritense

class System : public centre

{

public:

//Using of constructor

System()

{

cen\_info();

}

//Using of destructor

~System()

{

}

};

//multiple inheritance

//also hybrid inheritance(board class to student and centre class and

//--from that two to data class)

class data : public student, public centre

{

public:

void showdata()

{

grade\_info();

}

void display()

{

getinfo();

calculate();

showinfo();

}

};

void main()

{

clrscr();

int i = 1, n = 1;

board b;

data t, d[60];

b.showboard();

System s;

t.showdata();

start:

{

d[i].display();

i++;

}

start1:

cout << "\n\t1 to continue\n\t0 to quit\nenter your choice: ";

cin >> n;

if (n == 1)

{

goto start;

}

else if (n == 0)

exit(0);

else

{

cout << "Enter the correct choice!!";

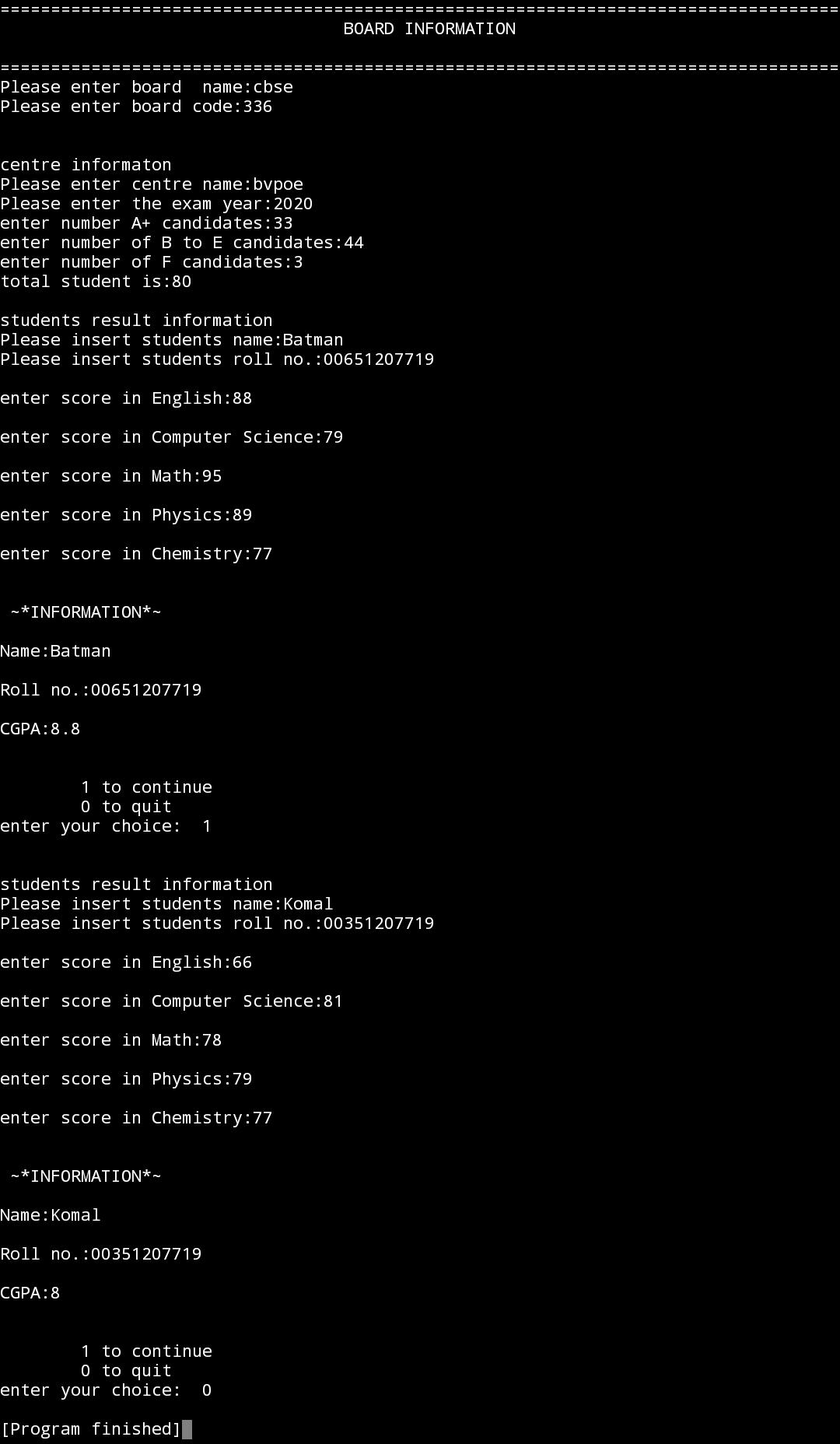
goto start1;

}

getch();

}

**OUTPUT :**

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