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**CLASS ROLL NO: HX-05**

**DEPARTMENT: I.T.**

**SEMESTER: 5**

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**1.5. Create a class to add Two times provided in hour minute format. Use functions**

**a)void input() to provide hour and minute.**

**b) void gettime(int ,int) to take hour and minute entered by user.**

**c) sum(time <oj>, time <ob> ) to add minutes and hours. If minutes is >60 add 1 with hour.**

**d) void display() to display the result.**

**Program Code:**

#include <iostream>

#include <string.h>

using namespace std;

class time\_c

{

int hour;

int minute;

public:

void gettime(int hr, int min)

{

hour=hr;

minute=min;

}

void sum(time\_c t1,time\_c t2)

{

hour=t1.hour+t2.hour;

minute=t1.minute+t2.minute;

if(minute>59)

{

hour+=1;

minute-=60;

}

if(hour>=24)

hour-=24;

cout<<"\n Time= "<<hour<<"::"<<minute;

}

void display()

{

cout<<"\n Time= "<<hour<<"::"<<minute;

}

};

int main()

{

int h1,h2,m1,m2;

time\_c t1;

time\_c t2;

time\_c t3;

cout<<"\n Enter time as hour and minute";

cin>>h1>>m1;

cout<<"\n Enter second time as hour and minute ";

cin>>h2>>m2;

t1.gettime(h1,m1);

t2.gettime(h2,m2);

t1.display();

t2.display();

t3.sum(t1,t2);

return 0;

}

**Output:**

Enter time as hour and minute.

>>12 34

Enter second time as hour and minute

>> 23 45

Time=12::34

Time=23::45

Time=12::19

**1.6. To write a C++ program to add two complex numbers using object as argument.**

**Algorithm:**

**class as complex.**

**data members as real and img.**

**member functions**

**void getdata()**

**void show()**

**void sum(complex c1,complex c2)**

**getdata() method is used to get the values .**

**show() method is used to display the values.**

**sum() method is used to perform addition operation using object as argument.**

**Program Code:**

#include <iostream>

#include <string.h>

using namespace std;

class complex

{

int real;

int imaginary;

public:

void getdata(int r, int i)

{

real=r;

imaginary=i;

}

void sum(complex c1, complex c2)

{

real=c1.real+c2.real;

imaginary=c1.imaginary+c2.imaginary;

char sign;

if(imaginary<0)

sign='-';

else

sign='+';

cout<<"\n Complex sum="<<real<<sign<<imaginary<<"i";

}

void display()

{

char sign;

if(imaginary<0)

sign='-';

else

sign='+';

cout<<"\n Complex no entered="<<real<<sign<<imaginary<<"i";

}

};

int main()

{

int r1,r2,i1,i2;

complex c1;

complex c2;

complex c3;

cout<<"\n Enter number as real and complex";

cin>>r1>>i1;

cout<<"\n Enter second number as real and complex";

cin>>r2>>i2;

c1.getdata(r1,i1);

c2.getdata(r2,i2);

c1.display();

c2.display();

c3.sum(c1,c2);

return 0;

}

**Output:**

Enter number as real and complex

>>99 -15

Enter second number as real and complex

>>-4 +2

Complex no entered=99-15i

Complex no entered=-4+2i

Complex sum=95-13i

**1.7.** **To write a C++ program to display the student details using class and array of object. Algorithm:**

**class as student.**

**data members rollno, name, mark1, mark2, mark3, total and average.**

**member functions as getdata() and displaydata().**

**getdata() method used to get the student details.**

**displaydata() method used to display the student details.**

**create an object array for the student class using the following syntax:**

**Get the number of students.**

**Enter student details**

**display the student details.**

**Program Code:**

#include <iostream>

using namespace std;

class student

{

char name[25];

int roll;

float marks1;

float marks2;

float marks3;

float average;

public:

void getdata(int r)

{

cout<<"\n What's your name?";

cin>>name;

roll=r+1;

cout<<"\n Enter marks in 3 sub";

cin>>marks1>>marks2>>marks3;

average=(marks1+marks2+marks3)/3;

}

void display()

{

cout<<"\n"<<name<<" with roll "<<roll<<" and marks "<<marks1<<","<<marks2<<" and "<<marks2<<" has an average of "<<average<<".";

}

};

int main()

{

int n,i,total;

cout<<"\n Enter no of student";

cin>>n;

total=n;

student a[n];

for(i=0;i<n;i++)

{

a[i].getdata(i);

}

while(n)

{

cout<<"\n Enter roll of the person to be displayed";

cin>>i;

if(i>total)

{

cout<<"\n Student does not exists!";

continue;

}

else

{

a[i-1].display();

cout<<"\n Enter 0 to exit";

cin>>n;

}

} return 0;

}

**Output:**

Enter no of student

>>3

What's your name?

>>Annie

Enter marks in 3 sub

>>98 97 93

What's your name?

>>Nini

Enter marks in 3 sub

>>91 92 94

What's your name?

>>Vicky

Enter marks in 3 sub

>>99 93 95

Enter roll of the person to be displayed

>>7

Student does not exists!

Enter roll of the person to be displayed

>>1

Annie with roll 1 and marks 98,97,93 has an average of 96

Enter 0 to exit.

>>0