C++ - LAB-6

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Q-1: Create a class called distance that has a separate integer member data for feet and inches. One constructor should initialize this data to zero and another should initialize it to fixed values. A member function should display it in feet inches format.

Ans: Source Code:

```cpp
#include <bits/stdc++.h>
using namespace std;
class distance1
{
    int feet, inch;
    public:
    distance1()
    {
        feet=0; inch=0;
    }

    distance1(int a , int b)
    {
        feet=a; inch=b;
    }

    void disp()
    {
        cout << "Feet = " << feet << " Inch = " << inch << "\n";
    }
};
int main()
{
    distance1 d1;
    distance1 d2(10, 20);
    d1.disp();
    d2.disp();
```

```
    return 0;
}
```

Output:

Feet = 0 Inch = 0

Feet = 10 Inch = 20


Q-2: Write a C++ program to copy the value of one object to another object using copy constructor.

Ans: Source Code:

```cpp
#include <bits/stdc++.h>
using namespace std;
// use of copy constructor
class myclass
{
  int a,b;
  public:
  myclass(int m ,int n)
  {
    a=m; b=n;
    cout << "Inside Parametarized Constructor\n";
    cout << "a = " << a << " b = " << b;
  }
  myclass(myclass &i)
  {
    a=i.a; b=i.b;
    cout << "\nInside copy Constructor, values are copied\n";
    cout << "a = " << a << " b = " << b;
  }
};

int main()
{
  myclass c1(10, 20), c2(c1);
  return 0;
}
```

Output:

Inside Parametarized Constructor

a = 10 b = 20

Inside copy Constructor, values are copied

a = 10 b = 20

Q-3: Create a class called distance that has a separate integer member data for feet and inches. One constructor should initialize this data to zero and another should initialize it to by the user inputs. A member function should display it in feet inches format. You must have a destructor function in your program.

Ans: Source Code:

```cpp
#include <bits/stdc++.h>
using namespace std;
class distance1
{
    int feet, inch;
    public:
    distance1()
    {
        feet=0; inch=0;
    }

    distance1(int a , int b)
    {
        feet=a; inch=b;
    }

    ~distance1(){cout << "Destructor Invoked\n"; }

    void disp()
    {
        cout << "Feet = " << feet << " Inch = " << inch << "\n";
    }
};
int main()
{
    distance1 d1;
    distance1 d2(10, 20);
    d1.disp();
    d2.disp();

    return 0;
}
```

Output:

Feet = 0 Inch = 0

Feet = 10 Inch = 20

Destructor Invoked

Destructor Invoked

Q-4: Write a C++ program(display a complex number in the form of a+ib, where 'a' is the real part and 'b' is the imaginary part.) to get the default value by default constructor, user input value by the parameterized constructor and to get the value from other existing object using copy constructor.

Ans: source Code:

```cpp
#include <bits/stdc++.h>
using namespace std;
class mycomplex
{
    float a, b;

    public:

    mycomplex(){a=0;b=0;} // def constructor

    mycomplex(float c, float d) // para constructor
    {
        a=c;
        b=d;
    }
    mycomplex(mycomplex &c) // copy constructor
    {
        a=c.a;
        b=c.b;
    }
    void display(void) // display member function
    {
        cout << a << " + " <<"j" << b << "\n";
    }

    ~mycomplex(){}  // destructor
};
int main()
{
```

```cpp
    float c,d;
    mycomplex c1;
     cout << "\nFor Def Constructor\n";
    c1.display();

    cout << "Enter the value of a and b resp.:";
    cin >> c >> d;
    mycomplex c2(c,d);
    cout << "\nFor Para Constructor\n";
    c2.display();

    mycomplex c3(c2);
    cout << "\nFor Copy Constructor\n";
    c3.display();
    return 0;
}
```

Output:

For Def Constructor

0 + j0

Enter the value of a and b resp.:12 13


For Para Constructor

12 + j13


For Copy Constructor

12 + j13