

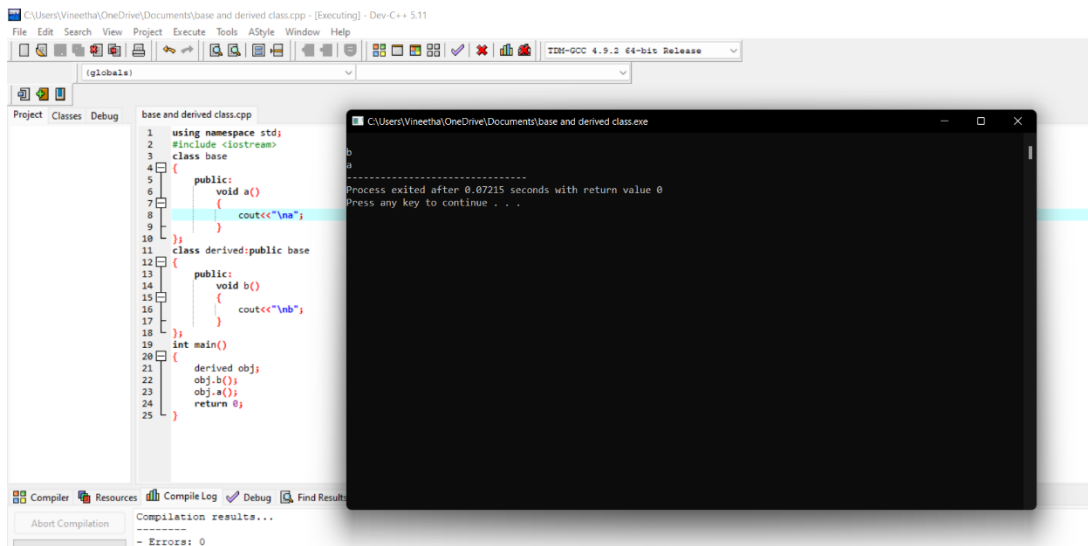
DSA0136-OBJECT ORIENTED PROGRAMMING WITH C++

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1.WRITE A C++ PROGRAM TO DERIVE A CLASS FROM BASE CLASS



The screenshot displays the Dev-C++ IDE with a C++ program titled 'base and derived class.cpp'. The code defines a base class 'base' with a public method 'a()' that prints '\na'. A derived class 'derived' inherits from 'base' and adds a public method 'b()' that prints '\nb'. The 'main' function creates a 'derived' object, calls 'b()', then 'a()', and returns 0. The IDE's 'Compile' window shows 'Compilation results...' with 'Errors: 0'. An execution window titled 'base and derived class.exe' shows the output: '\nb\n\n', followed by a message indicating the process exited after 0.07215 seconds with a return value of 0.

```
1 using namespace std;
2 #include <iostream>
3 class base
4 {
5     public:
6     void a()
7     {
8         cout<<"\na";
9     }
10 };
11 class derived:public base
12 {
13     public:
14     void b()
15     {
16         cout<<"\nb";
17     }
18 };
19 int main()
20 {
21     derived obj;
22     obj.b();
23     obj.a();
24     return 0;
25 }
```

Process exited after 0.07215 seconds with return value 0
Press any key to continue . . .

2. WRITE A PROGRAM TO CALCULATE THE BONUS OF THE EMPLOYEE, THE CLASS MASTER DERIVE THE INFORMATION FROM BOTH ADMIN AND ACCOUNT CLASS WHICH DERIVE INFORMATION FROM THE CLASS PERSON. CREATE A BASE AND ALL DERIVED CLASS WITH NECESSARY FUNCTIONS

```

1  using namespace std;
2  #include <iostream>
3  class master
4  {
5      int emp_id;
6      char emp_name;
7      public:
8          void getdata()
9          {
10             cin>>emp_id>>emp_name;
11         }
12     };
13     class admin:public master
14     {
15         int bp;
16         public:
17             void getdata1()
18             {
19                 cin>>bp;
20             }
21     };
22     class account:public master
23     {
24     public:
25         int hra,ta,da,bp,home,pf;
26         void getdata2()
27         {
28             hra=bp*15/100;
29             ta=bp*20/100;
30             da=bp*100/100;

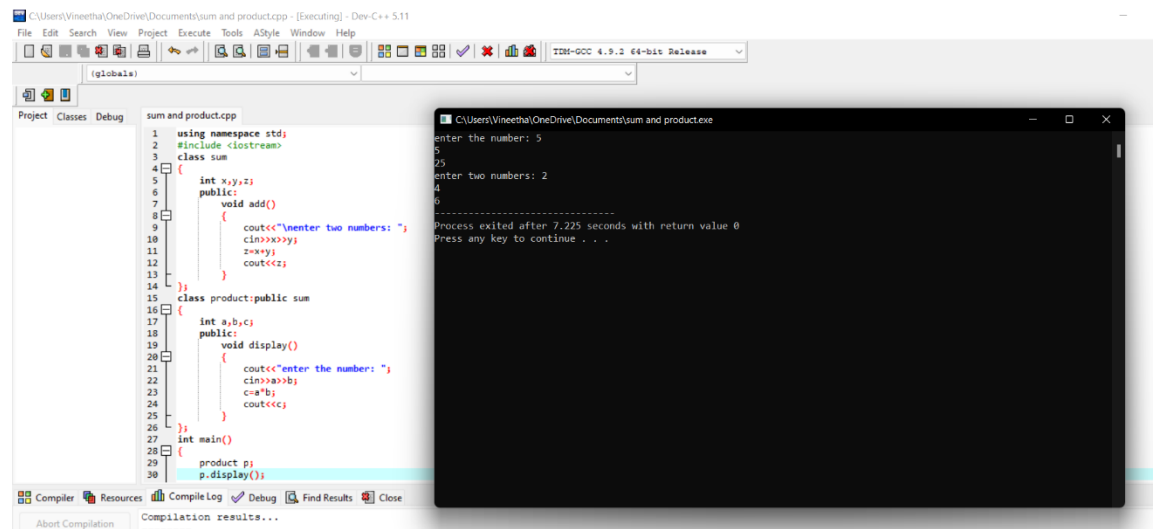
```

```

26     void getdata2()
27     {
28         hra=bp*15/100;
29         ta=bp*20/100;
30         da=bp*100/100;
31         cin>>home>>pf;
32     }
33     };
34     class person:public admin,public account
35     {
36     public:
37         void getdata3()
38         {
39             int gs=hra+da+ta;
40             int ded=home+pf;
41             int ns=gs-ded;
42             cout<<"emp_id";
43             cout<<"emp_name";
44             cout<<"bp";
45         }
46     };
47     main()
48     {
49         person p;
50         p.getdata3();
51         p.getdata2();
52         p.getdata1();
53         master m;
54         m.getdata();
55     }

```

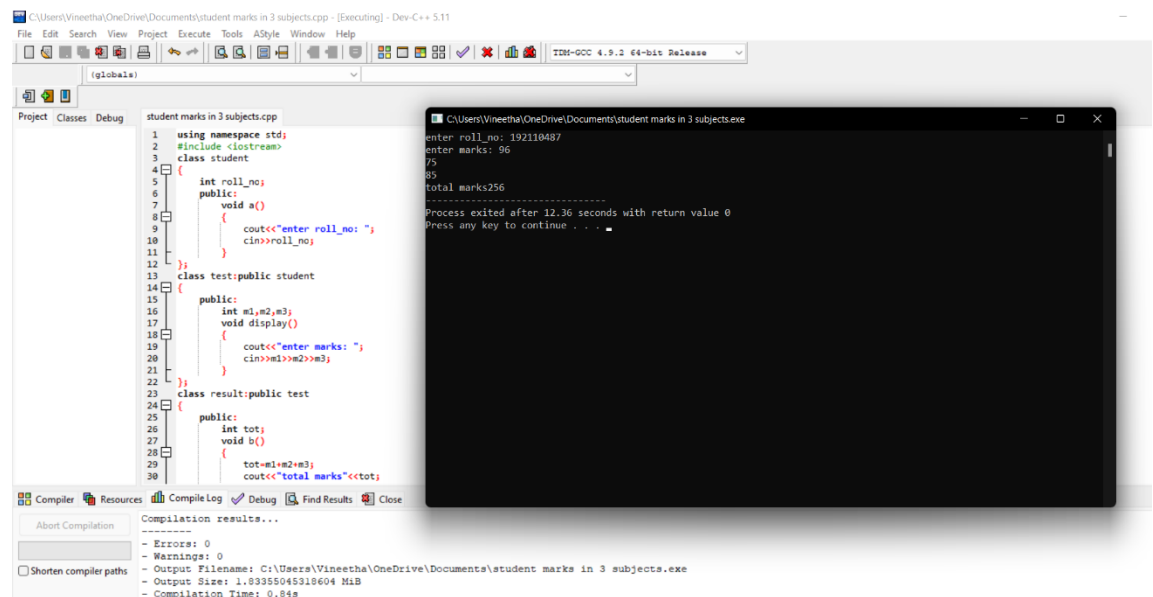
3.DEVELOP A C++ PROGRAM TO FIND THE SUM AND PRODUCT OF TWO NUMBER USING SINGLE INHERITANCE



```
1 using namespace std;
2 #include <iostream>
3 class sum
4 {
5     int x,y,z;
6     public:
7     void add()
8     {
9         cout<<"enter two numbers: ";
10        cin>>x>>y;
11        z=x*y;
12        cout<<z;
13    }
14 }
15 class product:public sum
16 {
17     int a,b,c;
18     public:
19     void display()
20     {
21         cout<<"enter the number: ";
22         cin>>a>>b;
23         c=a*b;
24         cout<<c;
25     }
26 };
27 int main()
28 {
29     product p;
30     p.display();
31 }
```

enter the number: 5
5
enter two numbers: 2
2
25
Process exited after 7.225 seconds with return value 0
Press any key to continue . . .

4.ASSUME THAT TEST RESULT OF BATCH OF STUDENTS STORED IN THREE CLASSES.CLASS STUDENT STORES THE ROLL NO,CLASS TEST STORES MARKS OBTAINED FOR 3 SUBJECTS AND CLASS RESULTS CONTAINS TOTAL MARKS FOR THE TESTS.THE CLASS RESULT INHERIT THE DETAILS OF THE MARKS OBTAINED IN THE TEST AND ROLL NUMBER OF THE STUDENTS THROUGH THE DERIVED CLASS

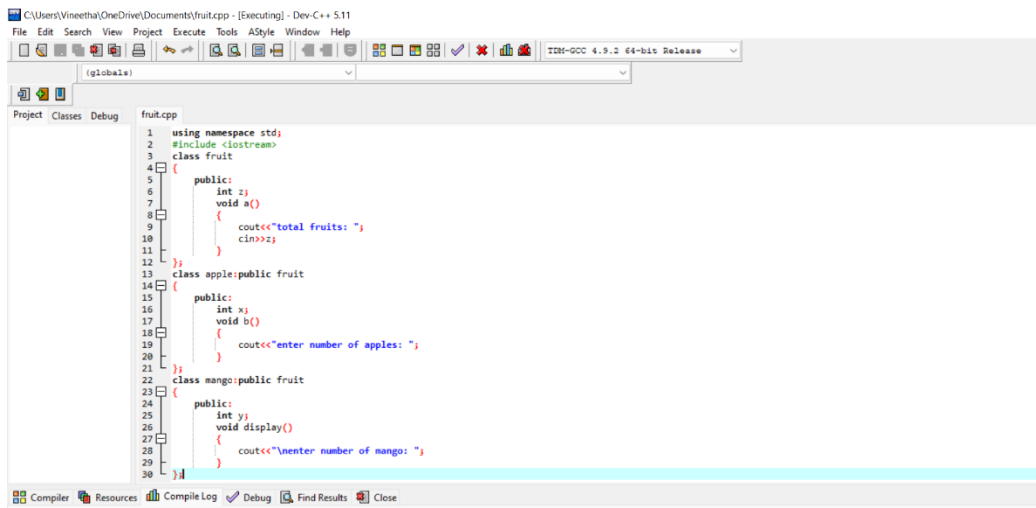


```
1 using namespace std;
2 #include <iostream>
3 class student
4 {
5     int roll_no;
6     public:
7     void a()
8     {
9         cout<<"enter roll_no: ";
10        cin>>roll_no;
11    }
12 }
13 class test:public student
14 {
15     public:
16     int m1,m2,m3;
17     void display()
18     {
19         cout<<"enter marks: ";
20         cin>>m1>>m2>>m3;
21     }
22 }
23 class result:public test
24 {
25     public:
26     int tot;
27     void b()
28     {
29         tot=m1+m2+m3;
30         cout<<"total marks"<<tot;
31     }
32 }
```

enter roll_no: 192110487
enter marks: 96
75
85
total marks256
Process exited after 12.36 seconds with return value 0
Press any key to continue . . .

Compilation results...
- Errors: 0
- Warnings: 0
- Output Filename: C:\Users\Vineetha\OneDrive\Documents\student marks in 3 subjects.exe
- Output Size: 1.83355045318604 MiB
- Compilation Time: 0.84s

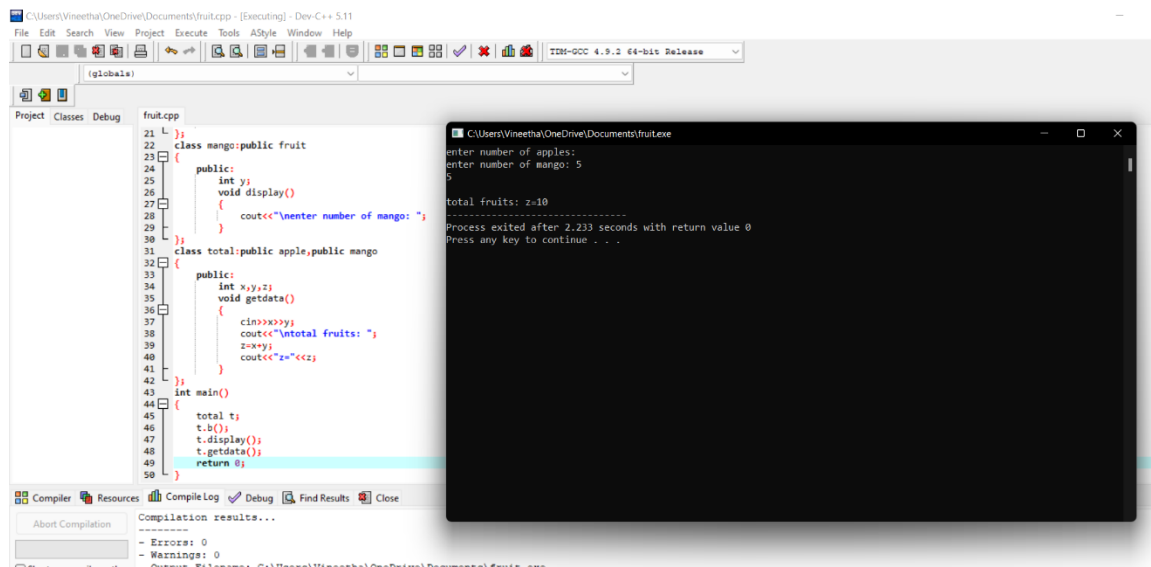
5.MAKE A CLASS NAME FRUIT WITH THE DATA MEMBER TO CALCULATE THE NUMBER OF FRUITS.CREATE OTHER TWO CLASSES NAMES APPLE AND MANGO,TO CALCULATE THE NUMBER OF APPLES AND MANGOES IN THE BASKET.PRINT THE NUMBER OF FRUITS IN EACH TYPE AND TOTAL NUMBER FRUITS IN THE BASKET



```

1  using namespace std;
2  #include <iostream>
3  class fruit
4  {
5  public:
6      int z;
7      void a()
8      {
9          cout<<"total fruits: ";
10         cin>>z;
11     }
12 };
13 class apple:public fruit
14 {
15 public:
16     int x;
17     void b()
18     {
19         cout<<"enter number of apples: ";
20     }
21 };
22 class mango:public fruit
23 {
24 public:
25     int y;
26     void display()
27     {
28         cout<<"enter number of mango: ";
29     }
30 };

```



```

21 }
22 class mango:public fruit
23 {
24 public:
25     int y;
26     void display()
27     {
28         cout<<"\nenter number of mango: ";
29     }
30 };
31 class total:public apple,public mango
32 {
33 public:
34     int x,y,z;
35     void getdata()
36     {
37         cin>>x>>y>>z;
38         cout<<"\ntotal fruits: ";
39         z=x+y;
40         cout<<"z="<<z;
41     }
42 };
43 int main()
44 {
45     total t;
46     t.b();
47     t.display();
48     t.getdata();
49     return 0;
50 }

```

```

C:\Users\Vineetha\OneDrive\Documents\fruit.exe
enter number of apples:
enter number of mango: 5
5
total fruits: z=10
.....
Process exited after 2.233 seconds with return value 0
Press any key to continue . . .

```