

Philip Pesic

Week 12

November 6 2022

Week 12 Prog 7

1) Create this base class first: Square

two variables: width, height

five function: getWidth, setWidth, getHeight, setHeight, getArea

2) Write the derived class second: Cube

inheritance the square class code

one variable: depth

three functions: getDepth, setDepth, getVolume

Step 2 - DECLARE 3 different instances of a cube.

Step 3 - USE the three instances of the cube.

set the width, height and depth of each

get volume of each cube

//

// main.cpp

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```
//
```

```
// Created by Pippo Pesic on 11/3/22.
```

```
//
```

```
#include <iostream>
```

```
using namespace std;
```

```
class Square {
```

```
    int width, height;
```

```
public:
```

```
    int getWidth() {
```

```
        return width;
```

```
    }
```

```
    void setWidth(int inWidth) {
```

```
        width = inWidth;
```

```
    }
```

```
    int getHeight() {
```

```
        return height;
```

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```
}
```

```
void setHeight(int inHeight) {
```

```
    height = inHeight;
```

```
}
```

```
int getArea() {
```

```
    return (width * height);
```

```
}
```

```
};
```

```
class Cube:public Square {
```

```
    int depth;
```

```
public:
```

```
    int getDepth() {
```

```
        return depth;
```

```
    }
```

```
    void setDepth(int inDepth) {
```

```
        depth = inDepth;
```

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```
}
```

```
int getVolume() {  
    return (getArea() * depth);  
}
```

```
};
```

```
int main() {  
    Cube cube1, cube2, cube3;  
    cube1.setWidth(2);  
    cube1.setHeight(1);  
    cube1.setDepth(3);  
  
    cube2.setWidth(4);  
    cube2.setHeight(6);  
    cube2.setDepth(5);  
  
    cube3.setWidth(3);  
    cube3.setHeight(1);  
    cube3.setDepth(7);
```

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```
    cout << "Cube 1 Volume = " << cube1.getVolume() << endl;
    cout << "Cube 2 Volume = " << cube2.getVolume() << endl;
    cout << "Cube 3 Volume = " << cube3.getVolume() << endl;

    cout << "Philip Pesic 11/6/22" << endl;

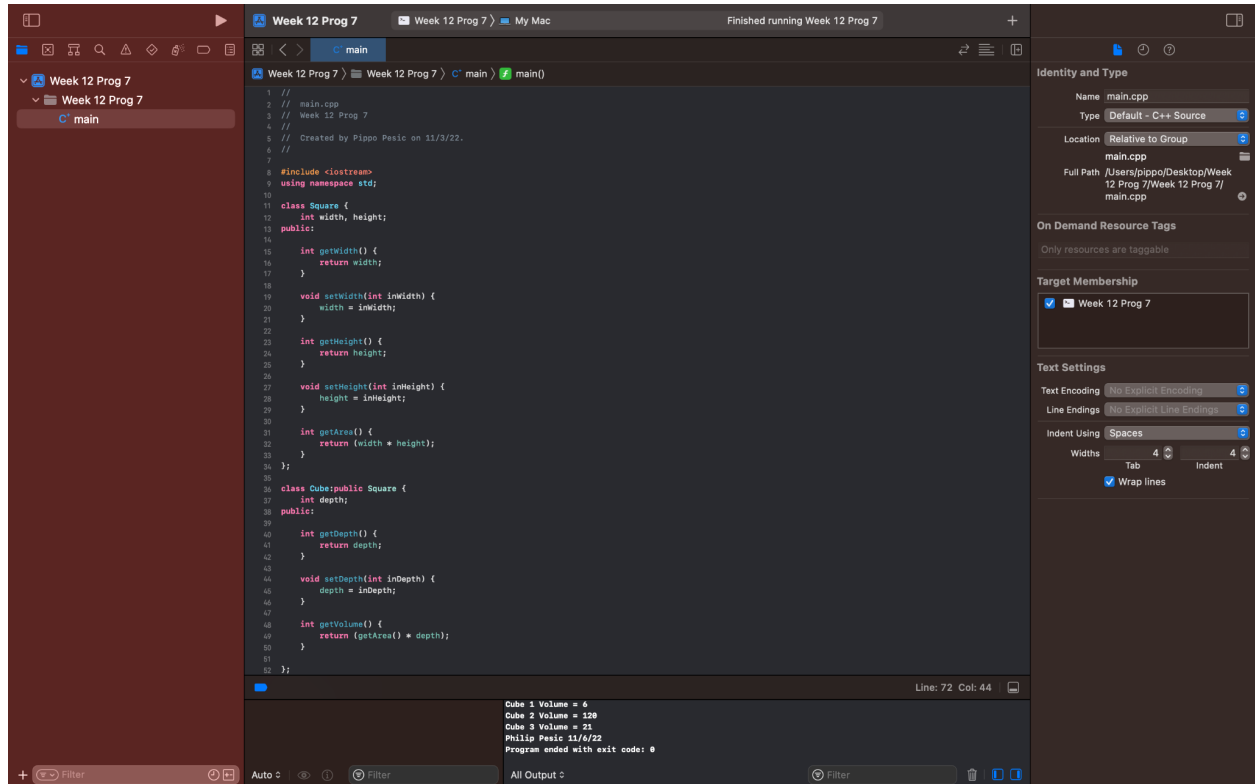
    return 0;
}
```

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```
11 class Square {
12     public:
13     };
14 };
15
16 class Cube:public Square {
17     int depth;
18     public:
19     int getDepth() {
20         return depth;
21     }
22     void setDepth(int inDepth) {
23         depth = inDepth;
24     }
25     int getVolume() {
26         return (getArea() * depth);
27     }
28 };
29
30 int main() {
31     Cube cube1, cube2, cube3;
32     cube1.setWidth(2);
33     cube1.setHeight(1);
34     cube1.setDepth(3);
35     cube2.setWidth(4);
36     cube2.setHeight(6);
37     cube2.setDepth(5);
38     cube3.setWidth(3);
39     cube3.setHeight(1);
40     cube3.setDepth(7);
41
42     cout << "Cube 1 Volume = " << cube1.getVolume() << endl;
43     cout << "Cube 2 Volume = " << cube2.getVolume() << endl;
44     cout << "Cube 3 Volume = " << cube3.getVolume() << endl;
45
46     cout << "Philip Pesic 11/6/22" << endl;
47     return 0;
48 }
```

Output:

```
Cube 1 Volume = 6
Cube 2 Volume = 120
Cube 3 Volume = 21
Philip Pesic 11/6/22
Program ended with exit code: 0
```

I learned: how to use the functions of base classes in the derived class