



Visual Studio Code interface showing a C++ file named `2.cpp` and a terminal window.

2.cpp

```
1 #include <iostream>
2 #include <string>
3 using namespace std;
4 class Animal
5 {
6 private:
7     string type;
8
9 public:
10     Animal() : type("Animal") {}
11     virtual string getType()
12     {
13         return type;
14     }
15 };
16 class Dog : public Animal
17 {
18 private:
19     string type;
20
21 public:
22     Dog() : type("Dog") {}
23     string getType() override
24     {
25         return type;
26     }
27 };
28 class Cat : public Animal
29 {
30 private:
31     string type;
32
33 public:
34     Cat() : type("Cat") {}
35     string getType() override
36     {
37         return type;
38     }
39 }
```

Terminal

```
PS D:\ODDP\ODDP\Week 8> cd "d:\ODDP\ODDP\Week 8\" ; if ($?) { g++ 2.cpp -o 2 } ; if ($?) { .\2 }
Animal: Animal
Animal: Dog
Animal: Cat
PS D:\ODDP\ODDP\Week 8>
```

Taskbar

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Visual Studio Code interface showing a C++ file named 3.cpp. The code defines two classes, ClassA and ClassB, and a function add. The main function calls add with objects of ClassA and ClassB, and the output is displayed in the terminal.

```
1 #include <iostream>
2 using namespace std;
3 class ClassB;
4 class ClassA
5 {
6 public:
7     ClassA() : numA(12) {}
8
9 private:
10     int numA;
11     friend int add(ClassA, ClassB);
12 };
13 class ClassB
14 {
15 public:
16     ClassB() : numB(1) {}
17
18 private:
19     int numB;
20     friend int add(ClassA, ClassB);
21 };
22 int add(ClassA objectA, ClassB objectB)
23 {
24     return (objectA.numA + objectB.numB);
25 }
26 int main()
27 {
28     ClassA objectA;
29     ClassB objectB;
30     cout << "Sum: " << add(objectA, objectB);
31     return 0;
32 }
```

Terminal output:

```
> cd "d:\ODDP\ODDP\Week 8\"; if ($?) { g++ 3.cpp -o 3 }; if ($?) { .\3 }
Sum: 13
PS D:\ODDP\ODDP\Week 8>
```

Visual Studio Code status bar shows: main, 0 errors, 0 warnings, 0 info, 0 hints, 0 messages, 0 errors, 0 warnings, 0 info, 0 hints, 0 messages. The bottom status bar shows: 25°C, Mostly cloudy, 9:51 PM, 11/10/2022.

Visual Studio Code interface showing a C++ program (4.cpp) and its execution output in the terminal.

Code Editor (4.cpp):

```
1 #include <iostream>
2 using namespace std;
3 class Shape
4 {
5 public:
6     virtual void area() = 0;
7 };
8 class Rectangle : public Shape
9 {
10 private:
11     int l;
12     int b;
13 public:
14     Rectangle(int x, int y)
15     {
16         l = x;
17         b = y;
18     }
19     void area()
20     {
21         cout << "Area of rectangle is: " << (l * b) << endl;
22     }
23 };
24
25 class Circle : public Shape
26 {
27 private:
28     int r;
29 public:
30     Circle(int x)
31     {
32         r = x;
33     }
34 }
```

Terminal Output:

```
> cd "d:\oopp\oopp\week 8\" ; if ($?) { g++ 4.cpp -o 4 } ; if ($?) { .\4 }
Area of rectangle is: 200
Area of circle is: 12.568
Area of square is: 16
PS D:\oopp\oopp\week 8>
```

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