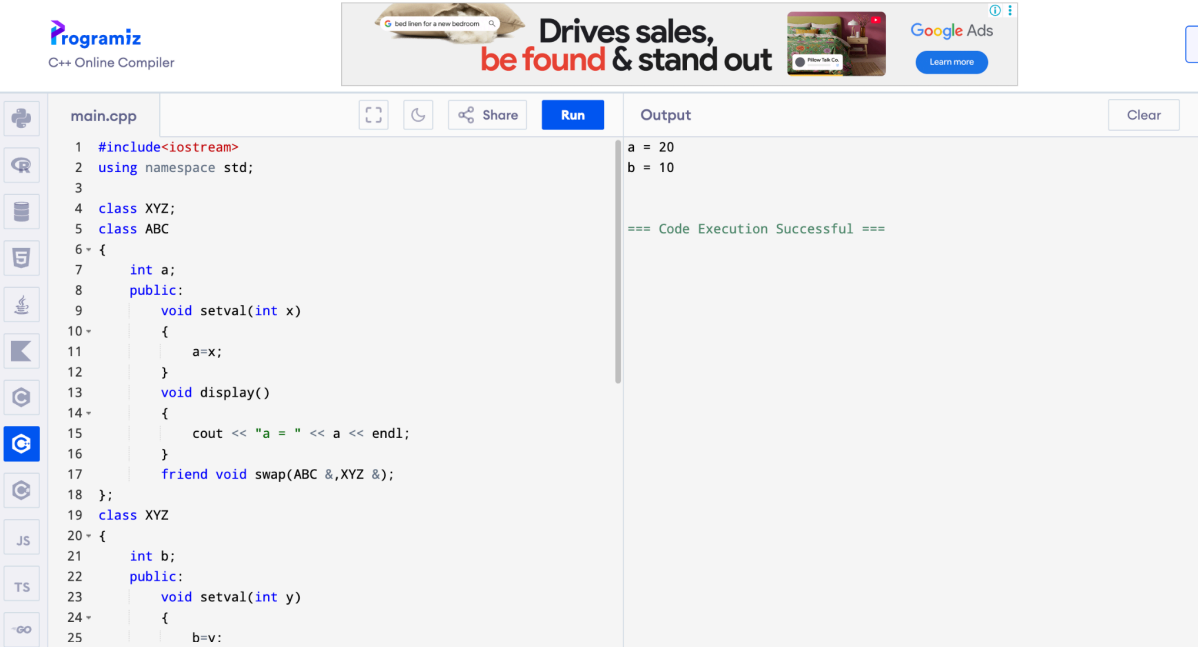


DAY 5 C++ PROGRAMS

1) Swapping of Two Numbers using Friend Function



The screenshot shows the Programiz C++ Online Compiler interface. The code in `main.cpp` defines two classes, `XYZ` and `ABC`, each with a `setval` method and a `display` method. A friend function `swap` is declared for both classes. The `main` function sets `a = 20` and `b = 10`, then calls `swap(ABC &, XYZ &)` and displays the values.

```
1 #include<iostream>
2 using namespace std;
3
4 class XYZ;
5 class ABC
6 {
7     int a;
8     public:
9     void setval(int x)
10    {
11        a=x;
12    }
13    void display()
14    {
15        cout << "a = " << a << endl;
16    }
17    friend void swap(ABC &,XYZ &);
18 };
19 class XYZ
20 {
21     int b;
22     public:
23     void setval(int y)
24     {
25         b=y;
```

Output:

```
a = 20
b = 10

=== Code Execution Successful ===
```

2) Greatest Of Two Numbers Using Friend Function



The screenshot shows the Programiz C++ Online Compiler interface. The code in `main.cpp` defines two classes, `XYZ` and `ABC`, each with a `setval` method and a `display` method. A friend function `max` is declared for both classes. The `main` function sets `a = 20` and `b = 10`, then calls `max(ABC &, XYZ &)` and displays the values.

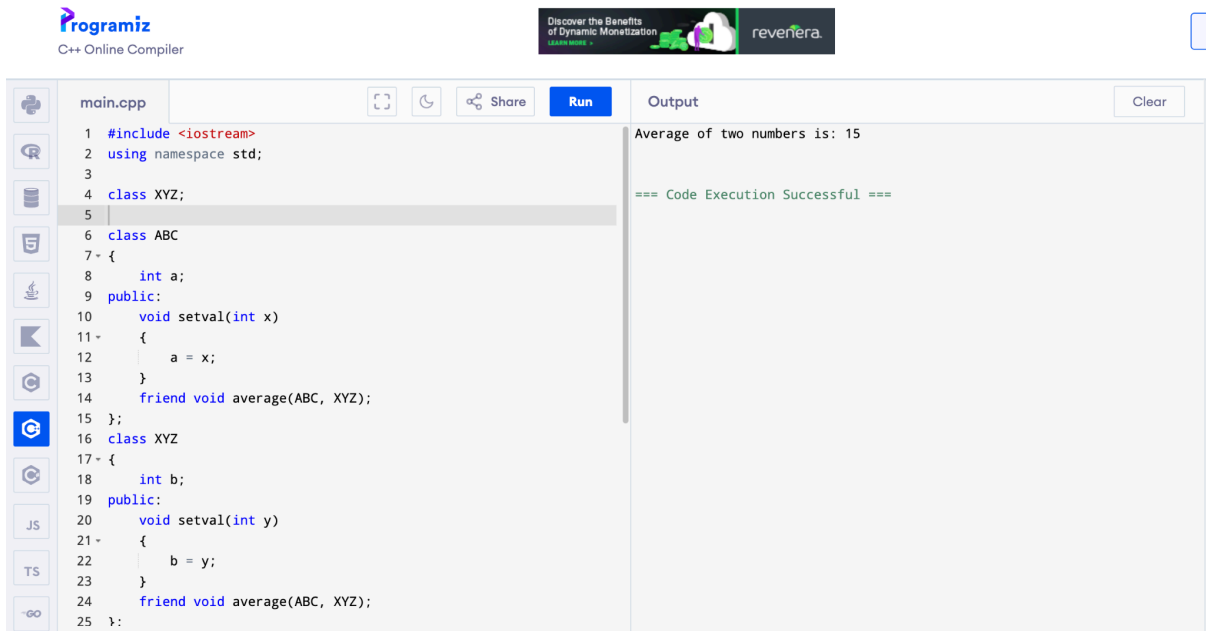
```
1 #include<iostream>
2 using namespace std;
3
4 class XYZ;
5 class ABC
6 {
7     int a;
8     public:
9     void setval(int x)
10    {
11        a=x;
12    }
13    void display()
14    {
15        cout << "a = " << a << endl;
16    }
17    friend void max(ABC &,XYZ &);
18 };
19 class XYZ
20 {
21     int b;
22     public:
23     void setval(int y)
24     {
25         b=y;
```

Output:

```
The Greater is b:20

=== Code Execution Successful ===
```

3) Average of two numbers using Friend Function

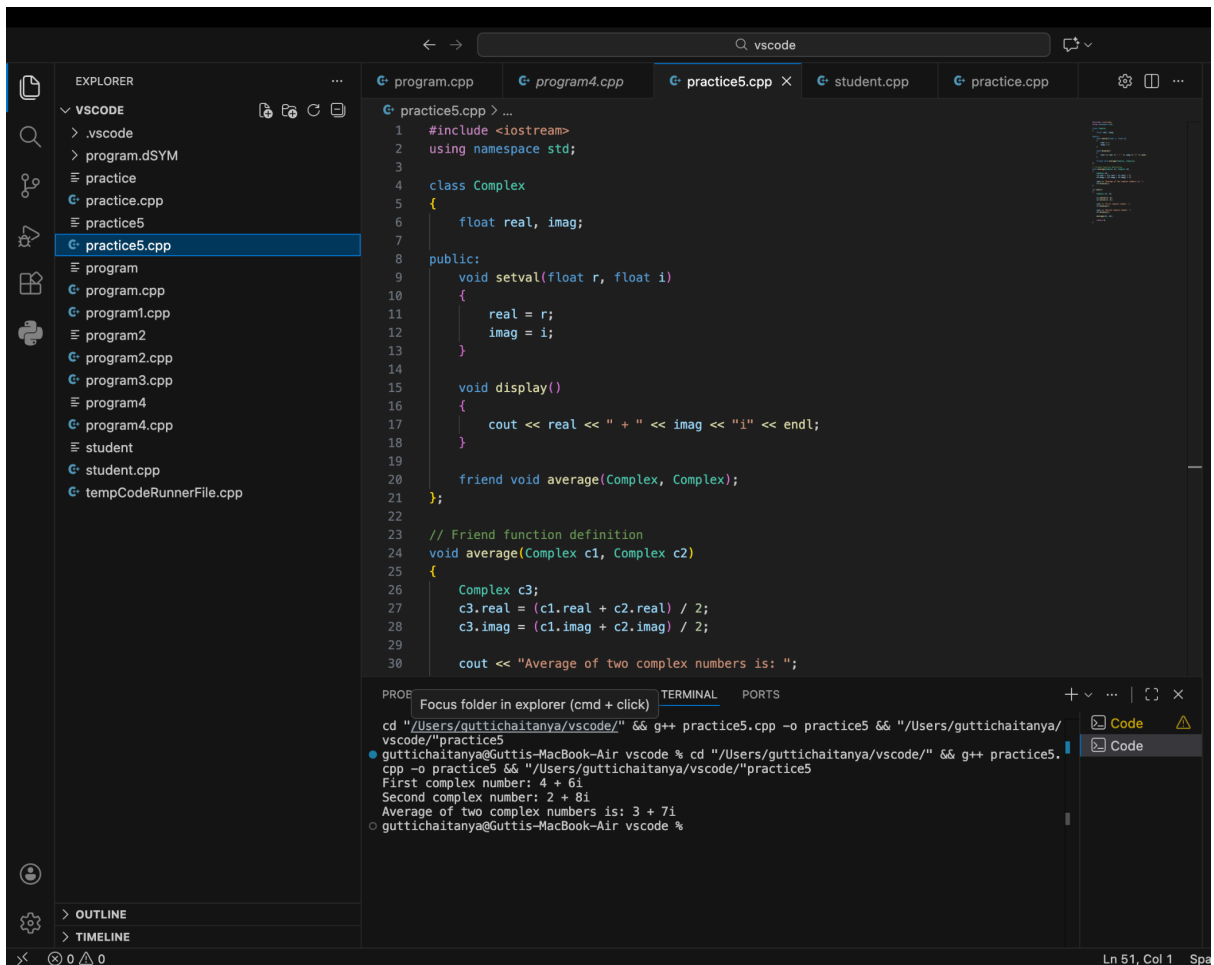


The screenshot shows the Programiz C++ Online Compiler interface. The code in `main.cpp` defines two classes, `ABC` and `XYZ`, each with a `setval` method. A friend function `average` is declared for both classes. The output shows the average of two numbers is 15.

```
1 #include <iostream>
2 using namespace std;
3
4 class XYZ;
5
6 class ABC
7 {
8     int a;
9 public:
10     void setval(int x)
11     {
12         a = x;
13     }
14     friend void average(ABC, XYZ);
15 };
16 class XYZ
17 {
18     int b;
19 public:
20     void setval(int y)
21     {
22         b = y;
23     }
24     friend void average(ABC, XYZ);
25 };
```

Output: Average of two numbers is: 15
=== Code Execution Successful ===

4) Complex Number using Friend Function



The screenshot shows the VS Code editor with a C++ project. The code in `practice5.cpp` defines a `Complex` class with `real` and `imag` attributes, and a friend function `average` that calculates the average of two complex numbers. The terminal output shows the execution of the program.

```
1 #include <iostream>
2 using namespace std;
3
4 class Complex
5 {
6     float real, imag;
7
8 public:
9     void setval(float r, float i)
10    {
11        real = r;
12        imag = i;
13    }
14
15    void display()
16    {
17        cout << real << " + " << imag << "i" << endl;
18    }
19
20    friend void average(Complex, Complex);
21 };
22
23 // Friend function definition
24 void average(Complex c1, Complex c2)
25 {
26     Complex c3;
27     c3.real = (c1.real + c2.real) / 2;
28     c3.imag = (c1.imag + c2.imag) / 2;
29
30     cout << "Average of two complex numbers is: ";
```

Terminal Output:

```
cd "/Users/guttichaitanya/vscode/" && g++ practice5.cpp -o practice5 && "/Users/guttichaitanya/vscode/"practice5
guttichaitanya@Guttis-MacBook-Air vscode % cd "/Users/guttichaitanya/vscode/" && g++ practice5.cpp -o practice5 && "/Users/guttichaitanya/vscode/"practice5
First complex number: 4 + 6i
Second complex number: 2 + 8i
Average of two complex numbers is: 3 + 7i
guttichaitanya@Guttis-MacBook-Air vscode %
```