

The screenshot shows a C++ IDE with the following components:

- Projects Panel (Left):** Lists several projects including 'CPPTemplate', 'Gaddis\_9Ed\_Chap2\_Prob20\_HowMuchPaint', 'Gaddis\_9thEd\_Chap2\_Prob05\_AverageOfValues' (selected), and others.
- Source Code Editor (Center):** Displays the code for 'averageofvalues.cpp'. The code includes comments, system and user libraries, constants, and a main function that calculates the average of five numbers (28, 32, 37, 24, 33) and displays the result.
- Output Window (Bottom):** Shows the execution results of the program, including the calculated sum (154) and the final average (30.8).

```
1  /*
2   * File: averageofvalues.cpp
3   * Author: Kevin Morris
4   * Created on June 24, 2022, 3:45 PM
5   * Purpose: To get the average of a series of values,
6   * you add the values up then divide the sum by the number of values.
7   * Write a program the stores the following values in five different variables:
8   * 28, 32, 37, 24, and 33.
9   * The Program should first calculate the sum of these five variables
10  * and store the result in a separate variable named sum.
11  * Then, the program should divide the sum variables by 5 to get the average.
12  * Display the average on the screen.
13  */
14  //System Libraries
15  #include <iostream>
16  using namespace std;
17  //User Libraries
18  //Global Constants
19  //Mathematical/Physics/Conversions, Higher dimensioned arrays
20  //Function Prototypes
21  //Execution Begins Here
22  int main(int argc, char** argv) {
23      float thrtyTwo, thrtyTre, thrtySvn, twntyght, twntyfo, Sum, Nbv, Avrg ;
24      // Initialize the Random Number Seed
25      //Declare Variables
26      twntyght=28; //Numerical value of twenty eight.
27      thrtyTwo=32; //Numerical value of thirty two.
28      thrtySvn=37; //Numerical value of thirty seven.
29      twntyfo=24; //Numerical value of twenty four.
30      thrtyTre=33; //Numerical value of thirty three.
31      Nbv=5; //Number of variables.
32      //Initialize Variables
33      Sum= (twntyght)+(thrtyTwo)+(thrtySvn)+(twntyfo)+(thrtyTre);
34      Avrg=(Sum/Nbv);
35      //Map inputs to outputs-> The Process
36      //Display Results
37      cout<<"We have an array of five numbers than include 28, 32, 37, 24, 33."<<endl;
38      cout<<"First, lets add up the array of five variables,"<<endl;
39      cout<<"which gives us a net value of "<<(Sum);
40      cout<<"."<<endl;
```

**Output - Gaddis\_9thEd\_Chap2\_Prob05\_AverageOfValues (Run) X**

```

We have an array of five numbers than include 28, 32, 37, 24, 33.
First, lets add up the array of five variables,
which gives us a net value of 154.
Then, we are going to divide the sum of our variables,
which is 5.
Finally, after the divide we are left with and average of 30.8.
RUN SUCCESSFUL (total time: 721ms)
```

The screenshot shows a C++ IDE with a project explorer on the left, a source code editor in the center, and an output window at the bottom.

**Project Explorer:** The left sidebar shows a project named 'Gaddis\_9thEd\_Chap2\_Prob05\_AverageOfValues'. It contains folders for 'Header Files', 'Resource Files', 'Source Files', 'Test Files', and 'Important Files'. Under 'Source Files', several files are listed, including 'averageofvalues.cpp' which is currently selected.

**Source Code Editor:** The main window displays the source code for 'averageofvalues.cpp'. The code is as follows:

```
1  * 20, 32, 37, 24, and 33.
2
3  * The Program should first calculate the sum of these five variables
4  * and store the result in a separate variable named sum.
5  * Then, the program should divide the sum variables by 5 to get the average.
6  * Display the average on the screen.
7
8  */
9
10 //System Libraries
11 #include <iostream>
12 using namespace std;
13
14 //User Libraries
15
16 //Global Constants
17 //Mathematical/Physics/Conversions, Higher dimensioned arrays
18 //Function Prototypes
19 //Execution Begins Here
20
21 int main(int argc, char**argv) {
22     float thrtyTwo, thrtyTre, thrtySvn, twntyht, twntyfo, Sum, Nbv, Avrg ;
23
24     // Initialize the Random Number Seed
25
26     //Declare Variables
27     twntyht=28; //Numerical value of twenty eight.
28     thrtyTwo=32; //Numerical value of thirty two.
29     thrtySvn=37; //Numerical value of thirty seven.
30     twntyfo=24; //Numerical value of twenty four.
31     thrtyTre=33; //Numerical value of thirty three.
32     Nbv=5; //Number of variables.
33
34     //Initialize Variables
35     Sum= (twntyht)+(thrtyTwo)+(thrtySvn)+(twntyfo)+(thrtyTre);
36     Avrg= (Sum/Nbv);
37
38     //Map inputs to outputs-> The Process
39
40     //Display Results
41     cout<<"We have an array of five numbers than include 28, 32, 37, 24, 33."<<endl;
42     cout<<"First, lets add up the array of five variables,"<<endl;
43     cout<<"which gives us a net value of "<<(Sum);
44     cout<<"."<<endl;
45     cout<<"Then, we are going to divide the sum of our variables,"<<endl;
46     cout<<"which is "<<(Nbv);
47     cout<<"."<<endl;
48     cout<<"Finally, after the divide we are left with and average of "<<(Avrg);
49     cout<<"."<<endl;
50
51     //Exit stage right
52     return 0;
53 }
```

**Output Window:** The bottom window shows the output of the program when run. It displays the same text as the cout statements in the code, with green arrows indicating the flow of execution.

```
Output - Gaddis_9thEd_Chap2_Prob05_AverageOfValues (Run) X
We have an array of five numbers than include 28, 32, 37, 24, 33.
First, lets add up the array of five variables,
which gives us a net value of 154.
Then, we are going to divide the sum of our variables,
which is 5.
Finally, after the divide we are left with and average of 30.8.
RUN SUCCESSFUL (total time: 721ms)
```