

Activity No. 2.1	
Data Types and Arithmetic Operations	
Course Code: CPE007	Program: Computer Engineering
Course Title: Data Structures and Algorithms	Date Performed: August 7, 2025
Section: CPE11S1	Date Submitted: August 7, 2025
Name(s): Nathaniel B. Mendoza	Instructor: Engr. Jimlord M. Quejado

6. Output

Example 1:

```
1 #include<iostream>
2
3 using namespace std;
4
5 int main()
6
7 {
8
9 cout<<"The value of seven is: ";
10
11 cout<<"The value of eight and a half is: ", <<8.5;
12
13 return 0;
14
15 }
```

```
ERROR!
/tmp/qDKteYmtVN/main.cpp: In function 'int main()':
/tmp/qDKteYmtVN/main.cpp:11:45: error: expected primary-expression before '<<' token
11 | cout<<"The value of eight and a half is: ", <<8.5;
    |                                           ^~

=== Code Exited With Errors ===
```

Errors:

- Line 11, number “8.5” outside the quotation mark (“).
- Line 9, no given output of “7”.
- Did not include the amount of decimal places or amount of 0 that were being asked for the final output.

Correct Output:

```
main.cpp
1 #include<iostream>
2
3 using namespace std;
4
5 int main()
6
7 {
8
9 cout<<"The value of seven is: 7.000000"<<endl;
10
11 cout<<"The value of eight and a half is: 8.500000"<<endl;
12
13 return 0;
14
15 }
```

```
The value of seven is: 7.000000
The value of eight and a half is: 8.500000

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

Example 2:

```
main.cpp
1 #include <iostream>
2
3 using namespace std;
4
5 int main()
6
7 {
8
9 cout<<"The value of seven is: "<< 7 0;
10
11 cout<<"The value of eight and a half is: "<<8.5;
12
13 return 0;
14
15 }
```

```
ERROR!
/tmp/D1gwSgowlyP/main.cpp: In function 'int main()':
/tmp/D1gwSgowlyP/main.cpp:9:36: error: expected ';' before numeric constant
9 | cout<<"The value of seven is: "<< 7 0;
  |                                   ^~
  |                                   ;

=== Code Exited With Errors ===
```

Errors:

- Line 9 has the number “7 0” outside the quotation mark (“).
- Line 9 does not have a decimal for “7 0”. Should be 7.0.
- Line 11 as the number “8.5” outside the quotation mark (“).
- Did not include the amount of decimal places or amount of 0 that were being asked for the final output.

Correct Output:

main.cpp	Output
<pre>1 #include<iostream> 2 3 using namespace std; 4 5 int main() 6 { 7 8 9 cout<<"The value of seven is: 7.000000"<<endl; 10 11 cout<<"The value of eight and a half is: 8.500000"<<endl; 12 13 return 0; 14 15 }</pre>	<pre>The value of seven is: 7.000000 The value of eight and a half is: 8.500000 === Code Execution Successful ===</pre>

Example 3:

<pre>1 int main() 2 { 3 4 5 float halfValue = 0.6; 6 7 float piValue = 3.141 592 65; 8 9 cout<<"The value of half is: "<< half Value; 10 11 cout<<"The value of Pi is: "<<pi_Value; 12 13 return 0; 14 15 }</pre>	<pre>ERROR! /tmp/5Q3EQ3c3J5/main.cpp: In function 'int main()': /tmp/5Q3EQ3c3J5/main.cpp:7:23: error: expected ',' or ';' before numeric constant 7 float piValue = 3.141 592 65; ^~~ ERROR! /tmp/5Q3EQ3c3J5/main.cpp:9:1: error: 'cout' was not declared in this scope 9 cout<<"The value of half is: "<< half Value; ^~~~ ERROR! /tmp/5Q3EQ3c3J5/main.cpp:9:34: error: 'half' was not declared in this scope 9 cout<<"The value of half is: "<< half Value; ^~~~ ERROR! /tmp/5Q3EQ3c3J5/main.cpp:11:31: error: 'pi_Value' was not declared in this scope; did you mean 'piValue'? 11 cout<<"The value of Pi is: "<<pi_Value; ^~~~~~ piValue === Code Exited With Errors ===</pre>
---	--

Errors:

- Line does not include `#include <iostream>`
- Line 5 has a halfValue of 0.6 instead of 0.5.
- Line 7 has spaces or gaps between numbers of pie.
- Line 11 has "pi_Value" instead of "piValue"
- Did not include `<iomanip>` to set a precision to round off by setting a number to pie to exactly get "3.141593".
- Line 9 has "half Value" instead of "halfValue"
- Did not use "using namespace std;" and also did not use "std::cout, std::endl;, and etc."

Correct Output:

main.cpp	Output
<pre>1 #include <iostream> 2 #include <iomanip> 3 int main() 4 { 5 float halfValue = 0.5; 6 float piValue = 3.14159265; 7 std::cout<<std::fixed<<std::setprecision(6); 8 std::cout<<"The value of half is: "<<halfValue<<std::endl; 9 std::cout<<"The value of Pi is: "<<piValue<<std::endl; 10 return 0; 11 }</pre>	<pre>The value of half is: 0.500000 The value of Pi is: 3.141593 === Code Execution Successful ===</pre>

Example 4:


```
1 #include <iostream>
2
3 int main()
4 {
5
6
7 int integer1, integer2, sum; /*declaration */
8
9 cout<<"Enter first integer: \n" ; /* prompt */
10
11 cin>>integer1 ; /* read an integer */
12
13 cout<<"Enter second integer: \n" ; /* prompt */
14
15 cin<<integer2; /* read an integer */
16
17 sum = integer1 + integer2; /* assignment of sum */
18
19 cout<<"Sum is : "<<sum; /* print sum */
20
21
22
23 return 0; /* indicate that program ended successfully */
24
25 }
```

```
ERROR!
/tmp/YJNMqvFJtI/main.cpp:13:7: error: extended character " is not valid in an identifier
13 | cout<<"Enter second integer: \n" ; /* prompt */
    |         ^
/tmp/YJNMqvFJtI/main.cpp:13:30: error: stray '\ ' in program
13 | cout<<"Enter second integer: \n" ; /* prompt */
    |                               ^
/tmp/YJNMqvFJtI/main.cpp:13:31: error: extended character " is not valid in an identifier
13 | cout<<"Enter second integer: \n" ; /* prompt */
    |                               ^
/tmp/YJNMqvFJtI/main.cpp:19:7: error: extended character " is not valid in an identifier
19 | cout<<"Sum is : "<<sum; /* print sum */
    |         ^
ERROR!
/tmp/YJNMqvFJtI/main.cpp:19:17: warning: missing terminating " character
19 | cout<<"Sum is : "<<sum; /* print sum */
    |                   ^
/tmp/YJNMqvFJtI/main.cpp:19:17: error: missing terminating " character
19 | cout<<"Sum is : "<<sum; /* print sum */
    |                   ^~~~~~
ERROR!
/tmp/YJNMqvFJtI/main.cpp: In function 'int main()':
/tmp/YJNMqvFJtI/main.cpp:9:1: error: 'cout' was not declared in this scope; did you mean 'std
::cout'?
9 | cout<<"Enter first integer: \n" ; /* prompt */
  | ^~~~
  | std::cout
ERROR!
```

Errors:

- Did not use "using namespace std;" and also did not use "std::cout, std::endl;, and etc."
- Line 9 used double backticks (`) instead of quotation marks.
- Line 13 used double backticks (`) instead of quotation marks.
- Line 15 has "cin<<" instead of "cin>>"

Correct Output:

main.cpp	Run	Output
<pre>1 #include <iostream> 2 3 int main() 4 { 5 6 7 int integer1, integer2, sum; 8 9 std::cout<<"Enter first integer: \n"; 10 11 std::cin>>integer1 ; 12 13 std::cout<<"Enter second integer: \n"; 14 15 std::cin>>integer2; 16 17 sum = integer1 + integer2; 18 19 std::cout<<"Sum is : "<<sum; 20 21 22 23 return 0; 24 25 }</pre>		<pre>Enter first integer: 1 Enter second integer: 2 Sum is : 3 === Code Execution Successful ===</pre>

7. Supplementary Activity

Problem 1:

	main.cpp	Output
1	// Mendoza, Nathaniel Borja CPE11S1	result: 38
2	#include <iostream>	big result: 54872
3	using namespace std;	
4	int main(void)	
5	{	
6	int xValue = 5;	
7	int yValue = 9;	
8	int result;	
9	int bigResult;	
10	xValue += 3; // increment xValue by 3	
11	yValue -= xValue; // decrement yValue by xValue	
12	result = xValue * yValue; // multiply xValue times yValue	
	giving result	
13	result += result; // increment result by result	
14	result -= 1; // decrement result by 1	
15	yValue = result % result; // assign result modulo result to yValue	
16	result += result + xValue; // increment result by result added to xValue	
17	bigResult = result * result * result; // assign result times result times result to bigResult	
18	result += xValue * yValue; // increment result by xValue times yValue	
19	cout << "result: " << result << endl;	
20	cout << "big result: " << bigResult << endl;	
21	return 0;	
22	}	
23		

=== Code Execution Successful ===

Problem 2:

	main.cpp	Output
1	// Mendoza, Nathaniel Borja CPE11S1	After first year: 101.5
2	#include <iostream>	After second year: 103.022
3	using namespace std;	After third year: 104.568
4	int main()	
5	{	
6	float startValue = 100;	
7	float interestRate = 0.015;	
8	float firstYearValue;	
9	float secondYearValue;	
10	float thirdYearValue;	
11	// Value increase by 1.5% Each Year	
12	firstYearValue = startValue + (startValue * interestRate);	
13	secondYearValue = firstYearValue + (firstYearValue * interestRate	
);	
14	thirdYearValue = secondYearValue + (secondYearValue * interestRate	
);	
15		
16	cout << "After first year: " << firstYearValue << endl;	
17	cout << "After second year: " << secondYearValue << endl;	
18	cout << "After third year: " << thirdYearValue << endl;	
19		
20	return 0;	
21	}	
22		

=== Code Execution Successful ===

8. Conclusion

Through the lesson, I was able to learn how to find possible compilation errors on the given examples and finding a way to give the exact what is being asked. Like for this activity, I managed to understand its logic specially for problem number 2 where you have to multiply it by 0.015 or add 1.5% to the given each year which made me complete the task successfully using data types and its arithmetic operations. There is still a huge room for improvement specially learning other operations as I have only utilized using floats and incrementing and decrementing values throughout this activity and specially multiplying x and y values. Additionally, this taught me about finding logical errors and placements of codes such as wrong quotation marks and including new codes to perfectly find the correct output from the input.

9. Assessment Rubric