Video Lesson Worksheet: C++ Structure, Variables and Statements

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1. Every complete statement ends with a semicolon.

2. To use cout statements you must include the iostream file in your program.

3. Every C++ program must have a function named main.

4. Preprocessor directives begin with a #.

5. A group of statements, such as the body of a function, must be enclosed in braces {}.

6. 72, 'A', and "Hello World" are all examples of literals.

7. 978.65 × 1012 would be written in E notation as 9.7865e+14.

8. The character constant 'A' requires 1 byte(s) of memory, whereas the string constant "A" requires - 2 - byte(s).

9. Which of the following are not valid assignment statements?

   A) Valid. total = 9;

   B) Not valid. 72 = amount;

   C) Valid. yourAge = myAge;

10. If the variable letter has been defined as a char variable, which of the following are not valid assignment statements?

   A) Not valid. letter = w;

   B) Valid. letter = 'w';

   C) Not valid. letter = "w";

11. Which of the following are not valid cout statements?

   A) Valid. cout << "Hello" << endl;

   B) Not valid. cout << "Hello" << \n;

   C) Valid, but questionable. cout << Hello;

12. Which of the following are not valid cout statements?

   A) Valid. cout << "Hello world";

   B) Not valid. cout << Hello world;

   C) Valid. cout << "Hello" << " world";

13. Assume x = 4, y = 7, and z = 2. What value will be stored in integer variable result by each of the following statements?

A) 11 result = x + y;

B) 14 result = y * 2;

C) 3 result = y / z;

14. Assume x = 2.5, y = 7.0, and z = 3. What value will be stored in integer variable result by each of the following statements?

A) 9 result = x + y;

B) 14 result = y * 2;

C) 2 result = y / z;

15. Write a C++ statement that defines the double variables temp, weight, and height all in the same statement.

Ans: double temp, weight, height;

16. Write a C++ statement that defines the int variables months, days, and years all in the same statement, with months initialized to 2 and years initialized to 3.

Ans: int months = 2, days, years = 3;

17. Write assignment statements that perform the following operations with int variable i, double variables d1 and d2, and char variable c.

A) Add 2 to d1 and store the result in d2.

Ans: d2 = d1 + 2;

B) Multiply d2 time 4 and store the result in d1.

Ans: d1 = d2 * 4;

C) Store the character 'K' in c.

Ans: c = ‘K’;

D) Store the ASCII code for the character 'K' in i.

Ans: i = ‘K’;

E) Subtract 1 from i and store the result back in i.

Ans: i = 1 - i;

18. Write assignment statements that perform the following operations with int variable i, double variables d1 and d2, and char variable c.

A) Subtract 8.5 from d2 and store the result in d1.

Ans: d1 = d2 - 8.5;

B) Divide d1 by 3.14 and store the result in d2.

Ans: d2 = d1/3.14;

C) Store the ASCII code for the character 'F' in c.

Ans: c = 'F';

D) Add 1 to i and store the new value back in i.

Ans: i = i + 1;

E) Add d1 to the current value of d2 and store the result back in d2 as its new value.

Ans: d2 = d2 + d1;

19. Modify the following program segment so it prints two blank lines between each line of text.

```
cout << "Two mandolins like creatures in the";
cout << "dark";
cout << "Creating the agony of ecstasy.";
cout << "                - George Barker";
```

Ans:

```
cout << "Two mandolins like creatures in the \n\n\n";
cout << "dark\n\n\n";
cout << "Creating the agony of ecstasy.\n\n\n";
cout <<                 - George Barker\n\n\n";
```

20. Rewrite the follow statement to use the newline escape character, instead of an endl, each time subsequent output is to be displayed on a new line.

```
cout << "L" << endl  << "E" << endl  << "A" << endl  << "F" << endl;
```

Ans: cout << << "L\n" << "E\n" << "A\n" << "F\n";

Read the Code

```
#include <iostream>
using namespace std;
int main()
{
    int freeze = 32, boil = 212;
    freeze = 0;
    boil = 100;
    cout << freeze << endl << boil << endl;
    return 0;
}
```

freeze	boil
32	*212*
0	*100*

Output

```
0
100
```

```
#include <iostream>
using namespace std;
int main()
{
    int x = 0, y = 2;
    x = y * 4;
    cout << x << endl << y << endl;
    return 0;
}
```

x	y
0	*2*
8	*2*

Output

```
8
2
```

```
#include <iostream>
using namespace std;
int main()
{
    cout << "I am the incredible";
    cout << "computing\nmachine";
    cout << "\nand I will\namaze\n";
    cout << "you.\n";
    return 0;
}
```

Output

```
I am the incrediblecomputing
machine
and I will
amaze
you.
```

```
#include <iostream>
using namespace std;
int main()
{
      cout << "Be careful!\n";
      cout << "This might/n be a trick ";
      cout << "question.\n";
      return 0;
}
```

Output

```
Be careful!
This might/n be a trick question.
```

```
#include <iostream>
using namespace std;
int main()
{
      int a, x = 23;
      a = x % 2;
      cout << x << endl << a << endl;
      return 0;
}
```

a	x
?	*23*
1	*23*

Output

```
23
1
```

Fix the code

```
1   */ What's wrong with this program? /*
2   #include <iostream>
3   using namespace std;
4
5   int main()      //;
6   {
7         int a, b, c; // Three integers
8         a = 3;
9         b = 4;
10        c = a + b;
11        /*C*/ cout << "The value of c is " << c;
12        return 0;
13  }
```

a	b	c
3	*4*	*7*

Output

```
The value of c is 7
```

Type, Compile, Run and Test

```
*/ What's wrong with this program? /*
#include iostream
using namespace std;

int main();
}
      int a, b, c\\ Three integers
      a = 3
      b = 4
      c = a + b
     Cout < "The value of c is %d" < C;
     return 0;
{
```

Correct Answer

```
*/ What's wrong with this program? /*
#include <iostream>
using namespace std;

int main()
{
      int a, b, c; // Three integers
      a = 3;
      b = 4;
      c = a + b;
     cout << "The value of c is " << c;
     cin.get();
     return 0;
}
```