Quiz

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Quiz

- What is wrong with the following class:

```
class XYZ
{
public:
        XYZ ( int x, int y = 0 );
        XYZ ( int combinedValue );

  private:
        int         mValue1;
        int         mValue2;
}
```

Quiz

- What is wrong with the following class:

```
class XYZ
{
public:
        XYZ ( int x = 1, int y );
        XYZ ( int combinedValue, double dValue );

  private:
        int         mValue1;
        int         mValue2;
}
```

Quiz

Assume a class called MyString,

```
class MyString  {
public:
        MyString( const char * str );

        bool   operator==( const MyString & other );
        bool   operator==( const char * other );
};
```

Now, for the statements below, specify if they are valid (compilable), and if yes, which operator will be called?

```
MyString  strA("test1"),  strB("test2");
bool  b1   = strA == strB;

bool  b2   = strA == "Test1";

bool  b3   = "test2" == strB;

bool  b4   = "someStringABC" == "someStringXYZ";
```

Quiz

Which of the following two operators is a little more expensive (in terms of performance) than the other, and why?

```
MyClass & operator ++ ();          // pre increment

MyClass   operator ++ (int);       // post increment
```

Quiz

Which is the operator that can take zero or more arguments?

Quiz

Which of the following statements could be valid within the context of operator overloading of the subscript operator,

i.e., when you see the [] operator below, assume that is the overloaded operator being talked about and that they are applied to an object of a class and **not** to an array:

```
MyClass   object;

MyClass   someOtherObject;

object[ 5 ] = 'A';

object[ "C++" ] = 'J';

someOtherObject[5][1] = 'A';
```

Quiz

Which operator will the compiler default generate for your class if you have not already defined it?

Quiz

As an extension of the above question, which members of a class will the compiler default generate and under what conditions.

Quiz

What would you comment on the non member operator declaration below:

```
double operator – ( double d, int i );
```

Quiz

Give an example of an operator that is a static operator within a class.

Quiz

Why would we need a virtual destructor in a class?

Quiz

What is a virtual constructor?

Quiz

Under what conditions would you need to define your own copy constructor for your class?

Quiz

What are the steps necessary for ensuring a class is a Singleton?

Quiz

What does the following program print?

```
int main( int argc, char ** argv )
{
        char * chPtr = NULL;            int value = 0;

        FuncA( chPtr, ++ value );
        std::cout << chPtr << endl;

        return 0;
}
void FuncA( char * ptr, int number )
{
        if ( number <= 0 )
                ptr = "Condition 1";
        else
                ptr = "Condition 2";
}
```

Quiz

What is wrong with the code?

```
void FuncB( int number )
{
        if (number <= 0)
                return;
        char * ptr = new char[ number ];

        // do some business logic with ptr;

        // Now release the memory
        if (number == 1)
                delete ptr;
        else
                delete [] ptr;
}
```

Quiz

What problem(s) do you see in the code below?
Rewrite the problem line(s) of code after correcting the problem(s).

```
class MyClass
{
public:
        MyClass( int arg1, int arg2 );

private:
        int         mValue;
        int &       mCounter;
};

MyClass::MyClass( int arg1, int arg2 )
{
        mValue = arg1;
        mCounter = arg2;
}
```

Quiz

What problem(s) do you see in the code below?
Rewrite the problem line(s) of code after correcting the problem(s).

```
class MyClass
{
public:
        MyClass( int arg );

private:
        int         mCurrentValue;
        int         mStartingValue;
};

MyClass::MyClass( int arg )
: mStartingValue ( arg ),  mCurrentValue (mStartingValue)
{
}
```

Quiz

What problem(s) do you see in the code below?
Rewrite the problem line(s) of code after correcting the problem(s).

```
class BaseClass  {
public:
                        BaseClass();
        void            DoSomething();
};

class MyClass : private BaseClass  {
public:
                        MyClass( int arg );
private:
        int             mCurrentValue;
};
int main( int argc, char ** argv )   {
        MyClass m1( 10 );

        m1.DoSomething();
        return 0;
}
```

Quiz

What problem(s) do you see in the code below?
Rewrite the problem line(s) of code after correcting the problem(s).

```
MyClass & Foo(int value)
{
        MyClass m1(10);

        ///… some business logic here

        return m1;
}
```

Quiz

What is the difference in the following statements:

```
void Foo( const MyClass * mcPtr );
void Foo( MyClass * const mcPtr );
void Foo( const MyClass * const mcPtr );

void Foo( const MyClass & mcRef );
void Foo( const MyClass & const mcRef );
```