CS 225, Spring 2017: Quiz #2 Feedback

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```
class Foo {
   public:
      Foo();
   private:
      int bar;
};

Foo::Foo() { bar = 0; }

int main() {
    Foo *x = new Foo();
    Foo *y = new Foo(12);
    return 1;
}
```

1. What is the result when this code is compiled and run?

A. The number 1 is printed to the screen.
B. A runtime error, because `bar` is private.
C. [Correct Answer] [Your Answer] A compiler error, because the proper constructor doesn't exist for the assignment to `y`.
D. A runtime error, because the proper constructor doesn't exist for the assignment to `y`.
E. No output
F. A compiler error, because `bar` is private.

2. What is the error in the following code?

```
#include <iostream>
using namespace std;

class LegoMovie{
  public:
    bool getEverythingIsAwesome();
    void setEverythingIsAwesome(bool b);
  private:
    bool everythingIsAwesome;
};

int main() {
    LegoMovie movie;
    movie.setEverythingIsAwesome(true);
    return 0;
}
```

A. The `LegoMovie` class is missing a destructor.
B. The `LegoMovie` class is missing a constructor.
C. [Your Answer] None of the other answers is true of this code.
D. [Correct Answer] There is no implementation for `LegoMovie`'s member functions.
E. The `main` method does not call the `LegoMovie`'s member functions correctly.

3. Suppose you have the following code:

```
class Cake{
  public:
    void setNumLayers(int num);
  private:
    string flavor;
    bool thickFrosting;
};

void Cake::setNumLayers(int num) { // code code code }

void bakeCake() { // code code code }

int main() {
    Cake c;
    return 0;
}
```

Where could the assignment `thickFrosting = true;` occur?

A. [Your Answer] Only in the constructor for the class, if we were to write one.
B. [Correct Answer] In the `setNumLayers` function.
C. In the `bakeCake` function.
D. None of these.
E. In the `main` function if we made it `c.thickFrosting = true;`.

4. What is one way that C++ enforces `encapsulation`?

A. [Correct Answer] [Your Answer] Creating private member variables and public functions to alter the variables in a controlled manner.
B. Compilation is orchestrated via a Makefile.
C. By using pointers, rather than the objects themselves.
D. C++ employs inheritance.
E. By convention, the main function is put in a separate file.

5. Consider the following code:

```
int main() {
    int *q;
    q = new int;
    *q = 6;
    delete q;
    return 0;
}
```

Suppose that variable `q` has memory address `0xdeadbeef` and the memory address of the `new int` is `0xcafebabe`.

What is the value of `q` just before we call `delete` in the code above?

A. [Correct Answer] `0xcafebabe`
B. `0xdeadbeef`
C. [Your Answer] `6`
D. None of these.
E. `0`