CS 225, Spring 2017: Quiz #2 Feedback

QuizID: 15512 NetID: penggu2 Score: 2 / 5 Answer Source: PrairieLearn

1. 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. In the `main` function if we made it `c.thickFrosting = true;`.
C. None of these.
D. In the `bakeCake` function.
E. [Correct Answer] In the `setNumLayers` function.

2. What is the error in the following code?

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

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

void LegoMovie::setEverythingIsAwesome(bool b) { everythingIsAwesome = b; }

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

A. [Correct Answer] The `main` method does not call the `LegoMovie`'s member functions correctly.
B. [Your Answer] The `LegoMovie` class is missing a constructor.
C. The `LegoMovie` member functions are not scoped correctly.
D. None of the other answers is true of this code.
E. The `LegoMovie` class is missing a destructor.

3. Consider the following code:

```
int main() {
    int *q;
    q = new int;
    *q = 6;
    delete q;
    q = NULL;
    // here {{#line}}
    return 0;
}
```

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

What is the value of `q` at line {{@line}}?

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

4. Why do we care about encapsulation?

A. It keeps everything in the same file to prevent files from getting lost or not included.
B. It reduces the amount of code we have to write.
C. It makes code look more impressive.
D. It allows variables to be changed in a way that will cause internal inconsistencies in the data structure.
E. [Correct Answer] [Your Answer] It prevents others from seeing the implementations of our functions, which helps with security and protection of intellectual property.

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

Foo::Foo(string init) { bar = 12; }

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

5. What is the result of compiling and running this code?

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