CS 225, Spring 2017: Quiz #2 Feedback

QuizID: 68992 NetID: thouchi2 Score: 3 / 5 Answer Source: PrairieLearn

1. Why do we care about encapsulation?

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

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

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

4. 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. `0xcafebabe`
B. [Correct Answer] [Your Answer] `NULL`
C. None of these.
D. `0xdeadbeef`
E. `6`

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