CS 216

Lecture 7

February 24th, 2014

Administrivia

So where are we…

~20 source files

1 makefile

2 executables

PA1.2 deadline extended: Tuesday at midnight.

PA1 Post-mortem

Why?

CS215: Programming

CS216: Engineering

This means scale.

Things to learn from PA1

Provided code

Reading and modifying code is a *crucial* skill.

Large(ish) project

Automation

Benefits of code reuse

Requirements focused on result, not process.

No singular solution

Visual Studio

vs.

g++

Platform is not important.

New stuff

static methods

A static method can be called without an instantiated object, but has no access to any member variables.

```
// In the header file
class DungeonLevel
{
public:
    static DungeonLevel * generateRandomLevel();

    // Other declarations and such
};
```

```
// In the .cpp file, it's otherwise normal
DungeonLevel * DungeonLevel::generateRandomLevel()
{
    // Implementation goes here
}
```

```
// And then elsewhere with code
int main(int argc, char * argv[])
{
    DungeonLevel * pLevel = DungeonLevel::generateRandomLevel();
}
```

So then, what's the point?

It avoids polluting the global namespace.

Static methods can access private methods and variables from objects of the class.

For example, private constructors.

Testing

The big question:
How do we know
code is correct?

System testing
Unit testing
Regression testing

You've done system testing.

Quite a bit, probably.

Run a program,
see if it works.

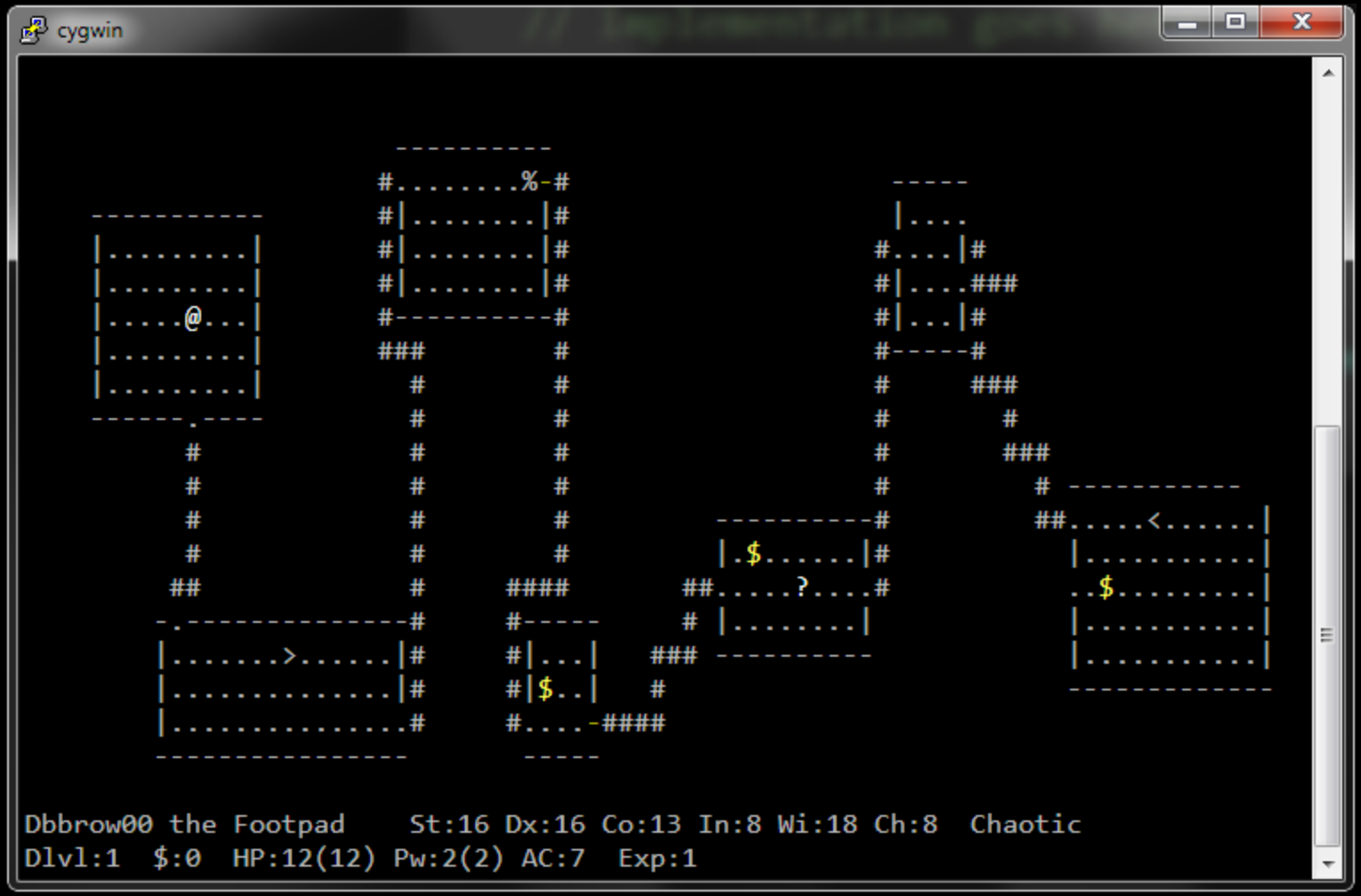
Unit testing is the interesting one.

The idea is to isolate the specific code and test only that code.

This can be done in a few different ways, but mostly it's done by isolating specific classes.

Regression testing is the next step.

PA2


cygwin
Dbbrow00 the Footpad St:16 Dx:16 Co:13 In:8 Wi:18 Ch:8 Chaotic
Dlvl:1 $:0 HP:12(12) Pw:2(2) AC:7 Exp:1

We need to be able to generate dungeon levels.

Each level will be a two dimensional vector of tiles.

And we'll have requirements for what should be in a level.

(e.g., a certain number of room spaces, all rooms connected, and one up stairway and one down stairway)

And then, for the fun part – you will need to write a unit test to verify that the code is correct.