

<i>First we write the test</i>	<i>Then we write the production code</i>
<pre>public void testCenterLine(){ Formatter f = new Formatter(); } </pre> <p>does not compile</p>	<pre>class Formatter{ } </pre> <p>compiles and passes</p>
<pre>public void testCenterLine(){ Formatter f = new Formatter(); f.setLineWidth(10); assertEquals(" word ", f.centerLine("word")); } </pre> <p>does not compile</p>	<pre>class Formatter{ public void setLineWidth(int width) { } public String centerLine(String line){ return " "; } } </pre> <p>compiles and fails</p>
	<pre>import java.util.Arrays; public class Formatter { private int width; private char spaces[]; public void setLineWidth(int width) { this.width = width; spaces = new char[width]; Arrays.fill(spaces, ' '); } public String centerLine(String term) { StringBuffer b = new StringBuffer(); int padding = width/2 - term.length(); b.append(spaces, 0, padding); b.append(term); b.append(spaces, 0, padding); return b.toString(); } } </pre> <p>compiles and unexpectedly fails</p>
	<pre>public String centerLine(String term) { StringBuffer b = new StringBuffer(); int padding = (width - term.length()) / 2; b.append(spaces, 0, padding); b.append(term); b.append(spaces, 0, padding); return b.toString(); } </pre> <p>compiles and passes</p>

```
public void testCenterLine() {
    Formatter f = new Formatter();
    f.setLineWidth(10);
    assertEquals(" word ", f.center("word"));
}
public void testOddCenterLine() {
    Formatter f = new Formatter();
    f.setLineWidth(10);
    assertEquals(" hello ", f.center("hello"));
}
```

compiles and fails

```
public String centerLine(String term) {
    int remainder = 0;
    StringBuffer b = new StringBuffer();
    int padding = (width - term.length()) / 2;
    remainder = term.length() % 2;
    b.append(spaces, 0, padding);
    b.append(line);
    b.append(spaces, 0, padding + remainder);
    return b.toString();
}
```

compiles and passes