Solution 5: MadLibs

Step 1: Create a Project
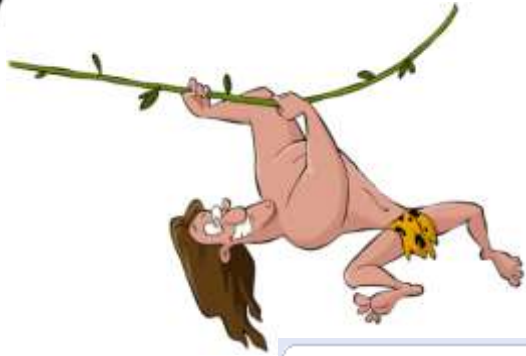
Stubbing the Story

```java
import java.util.List;
import java.util.Map;

public class Story {

    public List<String> getPrompts() {
        return null;
    }

    public String getStory(List<String> fillins) {
        return null;
    }

    public String getStory(Map<String,String> fillins) {
        return null;
    }

}
```
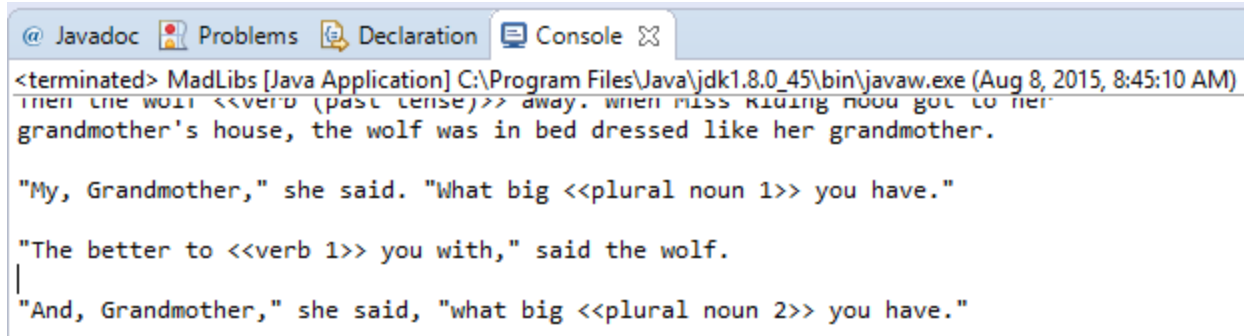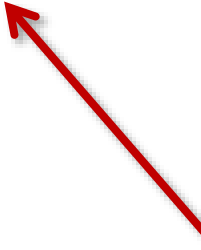
Stubbing the Story

```java
public class Story {

    String story;

    public Story(String filename) throws IOException {

        FileReader fr = new FileReader(filename);
        BufferedReader br = new BufferedReader(fr);
        while(br.ready()) {
            story = story + br.readLine()+"\n";
        }
        br.close();

    }
```

Proper Close

```java
public Story(String filename) throws IOException {

    StringBuffer sb = new StringBuffer();
    try (BufferedReader br = new BufferedReader(new FileReader(filename)))
    {
        while(br.ready()) {
            sb.append(br.readLine());
            sb.append('\n');
        }
        story = sb.toString();
    }

}

                        public String getStory(Map<String,String> fillins) {
                            return story;
                        }
```

Testing

```java
public static void main(String [] args) throws IOException {

    Story story = new Story("LittleRed.txt");

    System.out.println(story.getStory(null));

}
```

```
@ Javadoc  🔴 Problems  📄 Declaration  🖥 Console ⊠
<terminated> MadLibs [Java Application] C:\Program Files\Java\jdk1.8.0_45\bin\javaw.exe (Aug 8, 2015, 8:45:10 AM)
Then the wolf <<verb (past tense)>> away. When Miss Riding Hood got to her
grandmother's house, the wolf was in bed dressed like her grandmother.

"My, Grandmother," she said. "What big <<plural noun 1>> you have."

"The better to <<verb 1>> you with," said the wolf.

"And, Grandmother," she said, "what big <<plural noun 2>> you have."
```

Get Prompts

```java
public List<String> getPrompts() {
    List<String> ret = new ArrayList<String>();
    int pos = 0;
    while(true) {
        int i = story.indexOf("<<",pos);
        if(i<0) return ret;
        int j = story.indexOf(">>",i);
        ret.add(story.substring(i+2,j));
        pos = j+2;
    }
}
```

@ Javadoc 🔲 Problems 🔲 Declaration 🔲 Console ⊠

<terminated> MadLibs [Java Application] C:\Program Files\Java\jdk1.8.0_45\bin\javaw.exe (Aug 8, 2015, 8:50:52 AM)

[color, plural noun, adjective, exclamation, silly word, verb (past tense), plural noun 1, verb 1, plural noun 2, verb 2, plural noun 3]

Substitutions

```java
public String getStory(List<String> fillins) {
    String ret = story;
    List<String> prompts = getPrompts();
    for(int x=0;x<prompts.size();++x) {
        ret = ret.replaceAll("<<"+prompts.get(x)+">>", fillins.get(x));
    }
    return ret;
}
```

```java
Story story = new Story("LittleRed.txt");

List<String> fillins = new ArrayList<String>();
fillins.add("A");fillins.add("B");fillins.add("C");
fillins.add("D");fillins.add("E");fillins.add("F");
fillins.add("G");fillins.add("H");fillins.add("I");
fillins.add("J");fillins.add("K");

System.out.println(story.getStory(fillins));
```

"D!" said the wolf. "Where are you going, little E?"

"I'm going to my grandmother's house," she said.

Then the wolf <<verb (past tense)>> away. When Miss Ri
grandmother's house, the wolf was in bed dressed like H

"My, Grandmother," she said. "What big G you have."

Replace All

```java
private static String replaceAll(String s, String key, String value) {
    while(true) {
        int i = s.indexOf(key);
        if(i<0) return s;
        s = s.substring(0,i)+value+s.substring(i+key.length());
    }
}
```

"D!" said the wolf. "Where are you going, little E?"

"I'm going to my grandmother's house," she said.

Then the wolf F away. When Miss Riding Hood got to he
grandmother's house, the wolf was in bed dressed like

"My, Grandmother," she said. "What big G you have."

Map Substitutions

```java
public String getStory(Map<String,String> fillins) {
    String ret = story;
    for(Entry<String, String> e : fillins.entrySet()) {
        ret = replaceAll(ret, "<<"+e.getKey()+">>", e.getValue());
    }
    return ret;
}



                        Story story = new Story("LittleRed.txt");

                        Map<String,String> fillins = new HashMap<String, String>();
                        fillins.put("color", "BLUE");
                        fillins.put("plural noun", "BBBS");

                        System.out.println(story.getStory(fillins));
```

Prompting the User

```java
Story story = new Story("LittleRed.txt");

Map<String,String> fillins = new HashMap<>();
List<String> prompts = story.getPrompts();

Scanner sc = new Scanner(System.in);

// Could randomize prompt order
for(String prompt : prompts) {
    System.out.print(prompt+": ");
    String fill = sc.nextLine();
    fillins.put(prompt,fill);
}
sc.close();

System.out.println(story.getStory(fillins));
```

@ Javadoc Problems Declaration Console ⌧

```
<terminated> MadLibs [Java Application] C:\Program Files\Java\jdk1.8
plural noun 1: g
verb 1: h
plural noun 2: i
verb 2: j
plural noun 3: k
From the "Best of Mad Libs" by Roger Price and Leonar

LITTLE RED RIDING HOOD

One day, Little a Riding Hood was going through the f
basket of b for her grandmother. Suddenly, she met a
wolf.

"d!" said the wolf. "Where are you going, little e?"
```