Telling a Random Story

High-level Design Concepts

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From Template to Story

- Algorithms and Structures for Program
  - Read words of template, generate story
  - Find replacements for <tags>

```
My name is <name> and my job is to <verb>
<noun>s.  If you have ever seen one, you know
that this job is really <adjective>, because they
are so <adjective>.
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```
My name is Drew
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My name is <name> and my job is to <verb>
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My name is Drew and my job is to ride
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that this job is really <adjective>, because they
are so <adjective>.
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```
My name is Drew and my job is to ride dinosaurs.
If you have ever seen one, you know that this job
is really entertaining
```

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My name is <name> and my job is to <verb>
<noun>s.  If you have ever seen one, you know
that this job is really <adjective>, because they
are so <adjective>.
```

```
My name is Drew and my job is to ride dinosaurs.
If you have ever seen one, you know that this job
is really entertaining, because they are so fluffy.
```

High-Level Steps

1. For each word in the story template
   - A. I checked if the word had <>
     - i. If so, I picked a word in that category
     - ii. and added that word to my story
   - B. Otherwise
     - i. I just added that word to my story

- Apply 7 steps to problem
  - Caution: easy to gloss over natural things

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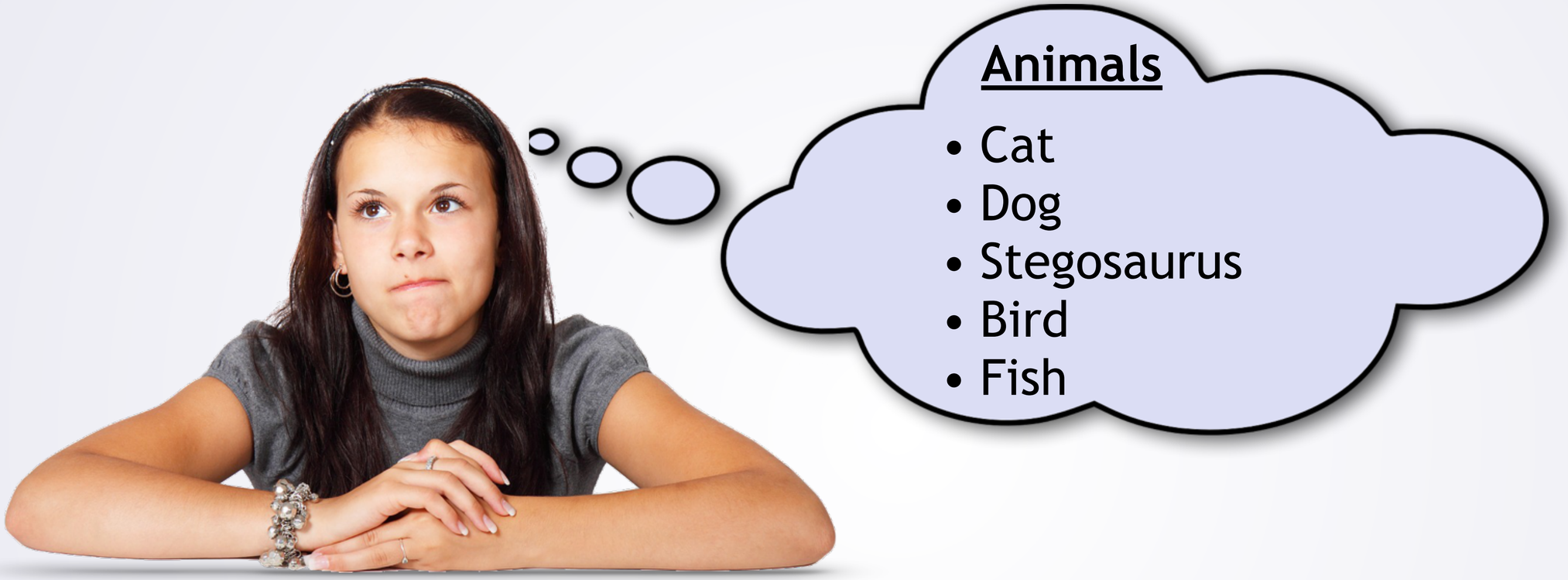
Implicit Step: Making List of Words



- Think of an animal!
  - Humans: natural, list in our heads
  - Computers: need a list of them

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High-Level Steps: First View

0. **Make a list of words for each category**
1. **For each word in the story template**
   - A. **I checked if the word had <>**
     - i. **If so, I picked a word in that category**
     - ii. **added the picked word to my story**
   - B. **Otherwise**
     - i. **I just added that word to my story**

- Explicitly include creating word lists

High-Level Steps: Second View

0. Make a list of words for each category
1. For each word in the story template
   - A. I checked if the word had <>
     - i. If so, I picked a word in that category
     - ii. added the picked word to my story
   - B. Otherwise
     - i. I just added that word to my story

- Where does story template come from?
  - File, website, …
  - Need to read it

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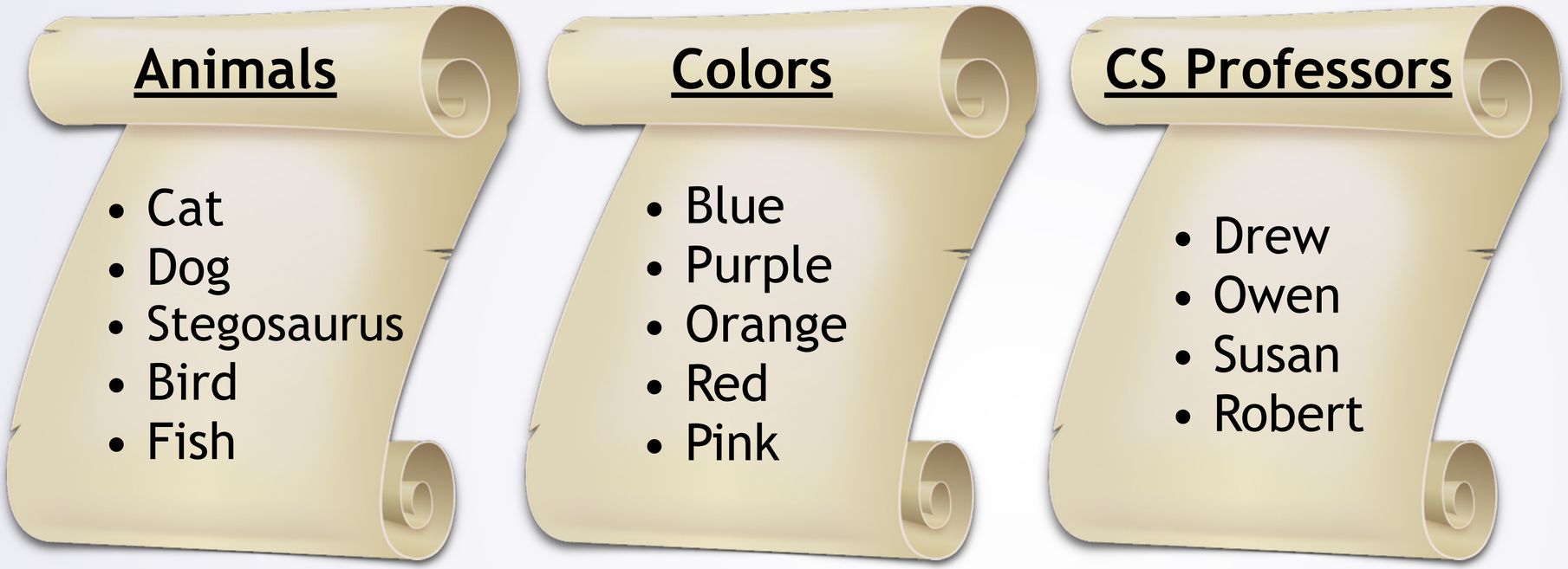
High-Level Steps: Third View

0. Make a list of words for each category
1. For each word in the story template
   - A. I checked if the word had <>
     - i. If so, I picked a word in that category
     - ii. added the picked word to my story
   - B. Otherwise
     - i. I just added that word to my story

- Some of these steps are complex
  - Fine: tell you other methods to write

```
String pickRandomWord(String category)
```

Thinking About Data



- Need to create, choose at random from list
  - How to store?
  - String[]? StorageResource?

Thinking About Data: Types

- StorageResource benefits and drawbacks
  - Don't need to know size, add as needed
  - Must iterate over all elements, random choice?
- String[] array benefits and drawbacks
  - Easy to choose at random, pick an index
  - Must know capacity of array when creating
- New concept: ArrayList