Announcements

• Project #5 due on Thursday
Corner Cases

What are corner Cases?

What corner cases can you think of for FancyWord?
• Constructor is passed a null reference
• Length of string is 0.

[Let’s test this to see if we find any more bugs... ]
Since arrays are objects, can we make an array containing a list of other Arrays?

Let’s draw the memory diagram for this.

We will call this a “ragged” two-dimensional array.
Code for Ragged 2-D array

```java
int[][] a = new int[3][];
a[0] = new int[4];
a[1] = new int[2];
a[2] = new int[3];
```

How do we access each box?
What does a.length represent?
What expression returns the length of a particular row?
Let’s write the usual loops that iterate over this structure.

Example: RandomRaggedArray.java
Shortcut

If you know the initial values:

```c
int[][] a = { {7, 9, 1}, {0, -1}, {1, 4, 3, 9} };
```
Rectangular 2-D Arrays

Shortcut:

```java
int[][] a = new int[3][4];
[Rows are automatically instantiated.]
```

Example: RectangularArray.java
What about Objects?

Suppose we want a 2-D collection of Cats?

Let’s write the code that creates this.
Java Interfaces

What is a Java Interface?

Example: Tours.Java, TourGuide.java, Tourist.java, etc.