Announcements

• Review Chapter 6
• Assignment 5 out
• No Reading Quiz for next time
• Today
  – Review strings
  – Inheritance smileybouncer
  – Pixmap
Strings

• A String is a class
• String constant
  – “The NC State Fair starts Friday!”
• All strings are constants! You cannot change them!
• Do not need “new” when creating a String
What can you do with strings?

• Look at API
• int length()
  – Returns length of string
• String substring(int beginIndex)
  – Returns substring from beginIndex to end of string
• String substring(int beginIndex, int endIndex)
  – Returns substring from beginIndex to endIndex -1
Example

String one = “ferriswheel”;
String two = one.substring(5);
String three =
    one.substring(4, 6);

What are two and three?
Finding substrings in strings

- `int indexOf(String str)`
  - Returns first position of `str` in the string
  - First position in a string is 0
- `int indexOf(String str, int fromIndex)`
  - Returns first position of `str` starting at `fromIndex`
Example

String one = “Cotton Candy”;
String two =
    one.substring(indexOf(“Can”),
    indexOf(“Can”)+4);

What is two?
Review Strings

- `String word = “CompSci 6”;`
- `word.length()` – returns length of string
- `word.toCharArray()` – returns string as an array of characters
- `word.charAt(5)` – returns character at position 5
- Loop over characters in a string
  ```java
  for (char ch: word.toCharArray())
  {
      if (ch == ‘a’) cnt++;
  }
  ```
What is an image?

- Lots of pixels
- Each pixel represents a color

One color RGB (45, 10, 67)
Classwork today - Images

• Read in an image.
• Modify `transformColor` method
  – Given a Color, create and return a new Color
  – See API for Color class
  – “Magically” transformation is applied to all pixels in the image
  – Image is transformed to new image
  – Darken darkens the image
Example: Change red color a little

```java
public Color transformColor (Color current)
{
    int red = current.getRed();
    int blue = current.getBlue();
    int green = current.getGreen();
    return new Color(red + 50, green, blue);
}
```

CAREFUL! This could cause an error!