Compsci 6
Programming Design and Analysis

September 22, 2009
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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
  for (char ch: word.toCharArray())
  {
      if (ch == ‘a’) cnt++;
  }
What is an image?

- Lots of pixels
- Each pixel represents a color

![Image illustration]

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!