Keywords and Strings

- Uses of Strings
  - Display messages
  - Input text form users from TextField, TextArea, keyboard
  - Manipulate files
  - Manipulate URLs
- String objects are immutable: they can't be changed. This characteristics provides for efficient memory usage.
- Note – when the string is one character in length, *char* can be used; processing time is less. See following example.
  - char initial = 'M';
  - char marker = '\n';
  - char letter;
  - letter = initial;
  - compare:
    - If (initial == 's')…
- Successive digits values:
  - If ((initial >= '0')&&(initial <= '9'))…
  - If (initial >= 'A')&&(initial <= 'Z'))…

Strings

- Three string classes: String, StringBuffer, and StringBuilder
  - String x,y;
  - String myName = “Tom”;
  - x = “France”;
  - y = x;
  - x = “”;
- Concatenation:
  - int number = 123;
  - G.drawString(“value is “+ number, 100, 100);
- Appending:
  - x = x + “someString”;
- Comparing strings:
  - if (string1.equals(string2))…
  - If (lastName.equalsIgnoreCase(“sMiTh))…
  - n = “ant”.compareTo(“bee”); // n = negative value
  - n = “bee”.compareTo(“ant”); // n = positive value
  - n = “bee”.compareTo(“bee”); // n = 0
  - n = “INSECT”.compareTo(“ant”); // n = negative value

Strings

- Array of strings (note – a regular object is a *char* array):
  - String cities[] = new String[10];
  - cities[1] = “Atlanta”;
- Converting strings to int or float using wrappers
  - int intValue = Integer.parseInt(dataString);
- Characters within strings
  - g.drawString(“A \”tricky\” problem!”, 100, 100);

- StringDemo example
- Amending strings
- string1 = “Florida”.replace(‘i’,’o’); // yields “Floroda”
- string1 = “Version 1.1”;
- result = string1.toLowerCase(); // yields “version 1.1”
- result = string1.toUpperCase(); // yields “VERSION 1.1”
- string1 = “ center “;
- result = string1.trim(); // yields “center”

StringBuffer and StringBuilder

- Since string objects are immutable the content of a string can be manipulated to produce a new string using either the StringBuffer ot StringBuilder classes.
- Content manipulation includes such operations as reversing the character order, replacing characters, appending multiple strings, etc.

  Example:

  ```
  StringBuffer sb = new StringBuffer(“airplane”);
  sb.setChar(4,’h’);
  sb.setChar(5,’o’);  / / yields “airphone”
  ```

- Note: the string ‘sb’ was actually modified at its memory location
- The StringBuilder class is virtually identical to the StringBuffer class, except that it provides better performance; it was introduced in J2SDK v1.5
- Example2:

  ```
  int i = 17;
  double d = 13.22;
  char c = ‘q’;

  StringBuffer str = new StringBuffer(“”);
  str.append(i);
  str.append(d);
  str.append(c);  //str holds 1713.22q
  ```