Processing Exercise

• Return to your pair from the end of last class
• Pick a computer; download Processing
• If not done with Tutorial 1, complete it. If the concepts don’t make sense, ask for help.
• Complete tutorial 2
  – When complete, raise your hand and demonstrate to course staff

• After finishing, try the following extensions
  – Build a second button; use the buttons to choose between a 4x4 matrix of squares and a 4x4 matrix of circles
  – Now change your buttons so that one increases the number of squares and the other decreases the number of squares
  – Turn each shape in the matrix a different color — either in an ordered progression or randomly
For Loops (revisited)

- **Pseudocode:**
  ```
  for <i> from <MIN> to <MAX> do { ... }
  » Operations to be executed: { ... }
  » Counter: <i>
  » Initial condition: <i> == <MIN>
  » Continuing condition: <i> <= <MAX>
  ```

- **Example: sum of numbers 1 to 10**
  ```
  sum = 0;
  for (i from 1 to 10) do {
    sum = sum + i;
  }
  ```

- **Processing:**
  ```
  sum = 0;
  for (i = 1; i <= 10; i+=1) {
    sum = sum + i;
  }
  ```
Loops (revisited)

• More Loops
  for <ITEM> in <LIST> do { ... }
  while <CONDITION> do { ... }
  do { ... } until <CONDITION>

• Examples
  – for student in class do {print student.name}
  – while (time < 11:15am) do {participate in class}
  – do {assigned reading} until (reading_todo == FALSE)

Assignment 3: Processing

• Implement a program to help a user plan a garden, given
  – Layout shape
  – Plant type
  – Number of plants

• Appropriate collaboration: discuss, but write your own code
Libraries: What are they?

- Sometimes other developers have created a piece of code that you want to use.
- Instead of cutting and pasting code, developers package their code into a library that you can import into your project.

Example:

```java
import javax.swing.JOptionPane;
```

**JOptionPane**

- A specific class that you may want to use is JOptionPane. The code in this library creates a small popup window.
import javax.swing.JOptionPane;
void draw() {
    String textInput = getInput();
    println(textInput);
    System.exit(0);
}
String getInput() {
    return JOptionPane.showInputDialog("Who's the most helpful TA?");
}

import javax.swing.JOptionPane;
void draw() {
    String textInput = getInput();
    int number = parseInt(textInput);
    println(number);
    System.exit(0);
}
String getInput() {
    return JOptionPane.showInputDialog("How many dogs does Emily have?");
}