Reacting to the Mouse and Keyboard

The `mousePressed`, `mouseX`, and `mouseY` Variables

```java
draw()
{
  stroke(0, 0, 0);
  fill(255, 50, 50);
  if (mousePressed)
    ellipse(mouseX, mouseY, 50, 50);
}
```

The `mousePressed`, `mouseX`, and `mouseY` Variables

- `mousePressed` is a built-in variable that is always telling you if a mouse button is currently pressed.
- `mouseX` and `mouseY` are built-in variables that are always telling you where the mouse cursor is.

The `keyPressed` and `key` Variables

```java
draw()
{
  if (keyPressed)
  {
    switch (key)
    {
      case 'r':
        fill(255, 50, 50);
        break;
      case 'g':
        fill(50, 255, 50);
        break;
      case 'b':
        fill(50, 50, 255);
        break;
    }
  }
  if (mousePressed)
    ellipse(mouseX, mouseY, 50, 50);
}
```

- `keyPressed` is a built-in variable that is always telling you if a keyboard key has been pressed.
- `key` is a built-in variable that tells you what key has been hit.
- The `switch/case` statements are Processing’s way of checking many values without having a whole slew of if-statements.

The stroke() and fill() calls have been moved to setup()
if ( keyPressed )
{
  if ( key == CODED )
  {
    switch( keyCode )
    {
      case UP: // up-arrow
        ...
        break;
      }
  }
}

What if you want to read the Special Keys?

Values for keyCode can be:

<table>
<thead>
<tr>
<th>Key</th>
</tr>
</thead>
<tbody>
<tr>
<td>UP</td>
</tr>
<tr>
<td>DOWN</td>
</tr>
<tr>
<td>LEFT</td>
</tr>
<tr>
<td>RIGHT</td>
</tr>
<tr>
<td>ESC</td>
</tr>
<tr>
<td>DELETE</td>
</tr>
<tr>
<td>BACKSPACE</td>
</tr>
<tr>
<td>TAB</td>
</tr>
<tr>
<td>RETURN</td>
</tr>
</tbody>
</table>

You can also define your own functions to handle the mouse and keyboard explicitly, but we don’t need these yet

```java
void mousePressed()
{
  if ( Debug )
    println( "mouse button = " + mouseButton );
}

void mouseMoved()
{
  if ( Debug )
    println( "mouse has been moved: " + mouseX + ", " + mouseY );
}

void mouseDragged()
{
  if ( Debug )
    println( "mouse has been dragged: " + mouseX + ", " + mouseY );
}
```