Module 01
Processing Recap

Processing is...
...a language
...a library
...an environment

The Processing Language
The rules defining which source code will be considered a “valid program”.

`ellipse( 50, 50, 10, 10 );`
`ellipse( -100, 50, 10, 10 );`
`ellipse( 50, 50, -20, -20 );`

Please draw an ellipse.

Types
Every value in a program has a type.
Every variable in a program has a type.

<table>
<thead>
<tr>
<th>Type</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>int</td>
<td>PImage</td>
</tr>
<tr>
<td>boolean</td>
<td>String</td>
</tr>
<tr>
<td>float</td>
<td>char</td>
</tr>
<tr>
<td>color</td>
<td>Arrays (add []) to any other type name</td>
</tr>
</tbody>
</table>
Declarations
A declaration introduces a new name into a program.

```java
int a;
float b = 6;
String c = "GB" + "DA" + 2015;

float celsiusToFahrenheit( float c )
{
    return 1.8*c + 32.0;
}
```

Expressions
An expression is a fragment of code that yields a definite value

```java
3
"literally"
film_director
map( t, 0, 4, 10, 100 )
x < width/2.0 - PI*getShoeSize() - 1
```

Statements
A statement is a fragment of code that performs an action.

```java
ellipse( 50, 50, 20, 20 );
truth = "beauty";

if( mouseY == 71 ) { ... }
if( mouseX > 19 ) { ... } else { ... }

for( int idx = 0; idx < 10; ++idx ) { ... }
```

Libraries
Processing has an extensive library of built-in functions.

It gives you access to many useful add-on libraries.

(And you can access Java libraries, too.)
Program structure

By convention, Processing expects you to define certain functions that it knows about.

We will always use setup() and draw().