

1. Info on Demand

- Variables give us power to vary programs creatively.
- Variables store data that our computer uses in flexible ways.
- Variables can quickly create color and motion in our various designs.

3. Types of Variables

- There are different types of variables that a computer may use depending on density of information.
- The variable must be specified in program so the computer can use it.
- The simplest type of variable is called a primitive.
- Primitives hold one single type of info. such as a letter or #
- Primitive variables include:

a. Integer Variables

i. Whole numbers (no fractions, no decimals)

ii. examples: -2, -1, 0, 1, 2

iii. Processing code: `int`

b. Float Variables

i. Variables w/ decimal numbers

ii. examples: 4.3, 7.999, 0.476764

iii. Processing code: `float`

c. Character Variables

i. Variables that hold letters. They are enclosed by quotes

and can be used to create an interactive program.

ii. Examples: 'c', 't', 'a'

iii. Processing Code: `Char`

d. Boolean Variables

i. Variables that hold the value of true or false.

ii. Examples: true, false → only 2 options ☺

iii. Processing Code: `Boolean`

4. Other Variables

• `Byte`: Small numbers between -128 and 127.

• `Short`: A larger number between -2147483648 and 2147483647

• `Long`: A huge number

5. Built-in Variables

• `System` Variables: Several ready to go variables in Processing.

6. Assigning operations to variables.

`CircleX = CircleX + 1` assigned the circle to move.

Exercise 3: Circle grows fast

```
int CircleX = 0;
```

```
int CircleY = 100;
```

```
void setup() {
```

```
  size(200, 200);
```

```
}
```

```
void draw() {
```

```
  background(255);
```

```
stroke (0);  
fill (255, 5, 5);  
ellipse (circleX, circleY, 150, 150);  
circleX = circleX + 1  
}
```

Exercise 5: Testing multiple codes

```
a. float circleX = 0;  
   float circleY = 0;  
   float circleW = 50;  
   float circleH = 100;
```

} Assignment Operators

Tutorial 3 Review

1. Types of Variables

- Integer - A whole number
- Float - Decimal number
- Character (char) - Letter
- Boolean - True or false

2. Built-in Variables

a. These variables turn pink.

ex. mouseX, mouseY

b. Assigned operations

```
{ int circleX = 0;  
  int circleY = 100; }
```

variables } value * Plug in name of variable anywhere

-If you want the circle to move, make it: $circle.x = circle.x + 1$

Moves circle from
left to right ←

That is an
assignment
operation