Course content

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Transition to processing

Processing = software and language for learning to code with art

Integer division

/ = quotient

% = remainder

Examples

11/3 = 3

5%3 = 2

Primitive Operations

Processing programs = expressions + statements

- Contains built in expressions
- Mathematical expressions
    - +
    - -
    - *
    - /

Values = grouped into types (3, -35, 4.5)

Types = set of values that work the same (int, float, char, boolean)

Int = whole numbers (1, -5, 0)

Float = numbers with decimals (2.4, -44, 0.0, 2.0, -4.0)

Char = single characters (a, @, $, ^)

Boolean = logical statements (true, false)

Algorithms

Algorithms = steps to complete a specific task

- Purpose
- Inputs
- Effects
- Outputs

Examples

Add two numbers

- Purpose = get sum of 2 numbers
- Inputs = 2 numbers
- Effects = none
- Outputs = a number

Mowing the lawn

- Purpose = shorten the grass
- Input = area to mow
- Effects = shorter grass
- Outputs = hay

Purpose = name

Inputs = informed

Effects = changer

Outputs = producer

Variables

Variables = store information and can be changed

Statements = sections of code that does something

-   Draw on the screen

Expression = sections of code that has a value

-   int x = 5 (x = expression contains value 5)
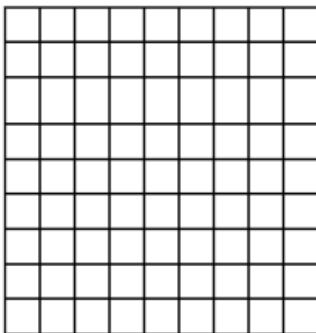
Values = expressions

Variables = expressions

Declarations = statements (int x)

Assignments = statements (x = 4)

Memory banks = grid of boxes

Boxes = slots in memory and holds a value

Program with no variables = empty holes

Program with values of 1 and 15 = 2 slots

```
15
1
```

Sometimes located at other memory slots

```
     15


1
```

Creating memory slots

1. Name a slot (int x)
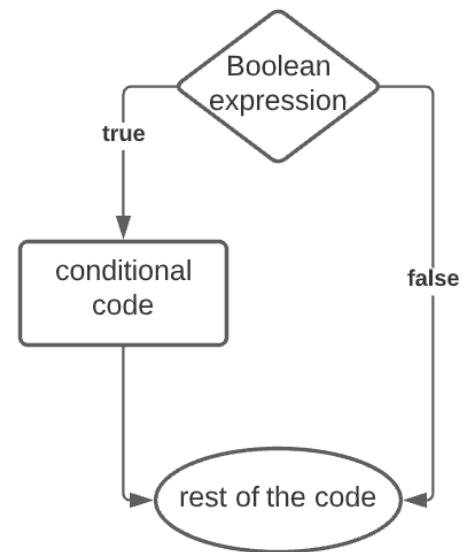2. Fill it (x = 5)

```
5
```
X

Conditions

Conditional = statements

Boolean = expression (true, false)

Conditions = based on boolean expressions

if condition

- If expression = true then runs conditional code
- If expression = false then runs rest of the code

if-else condition

- If expression = true then runs the if statements
- If expression = false then runs the else statements
- Rest of the code runs afterwards