Intro to Programming

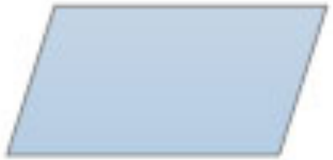
Objectives

— Explain what programming is.
— Create a algorithm.
— Use correct and specific language to describe code.
— Identify Expressions

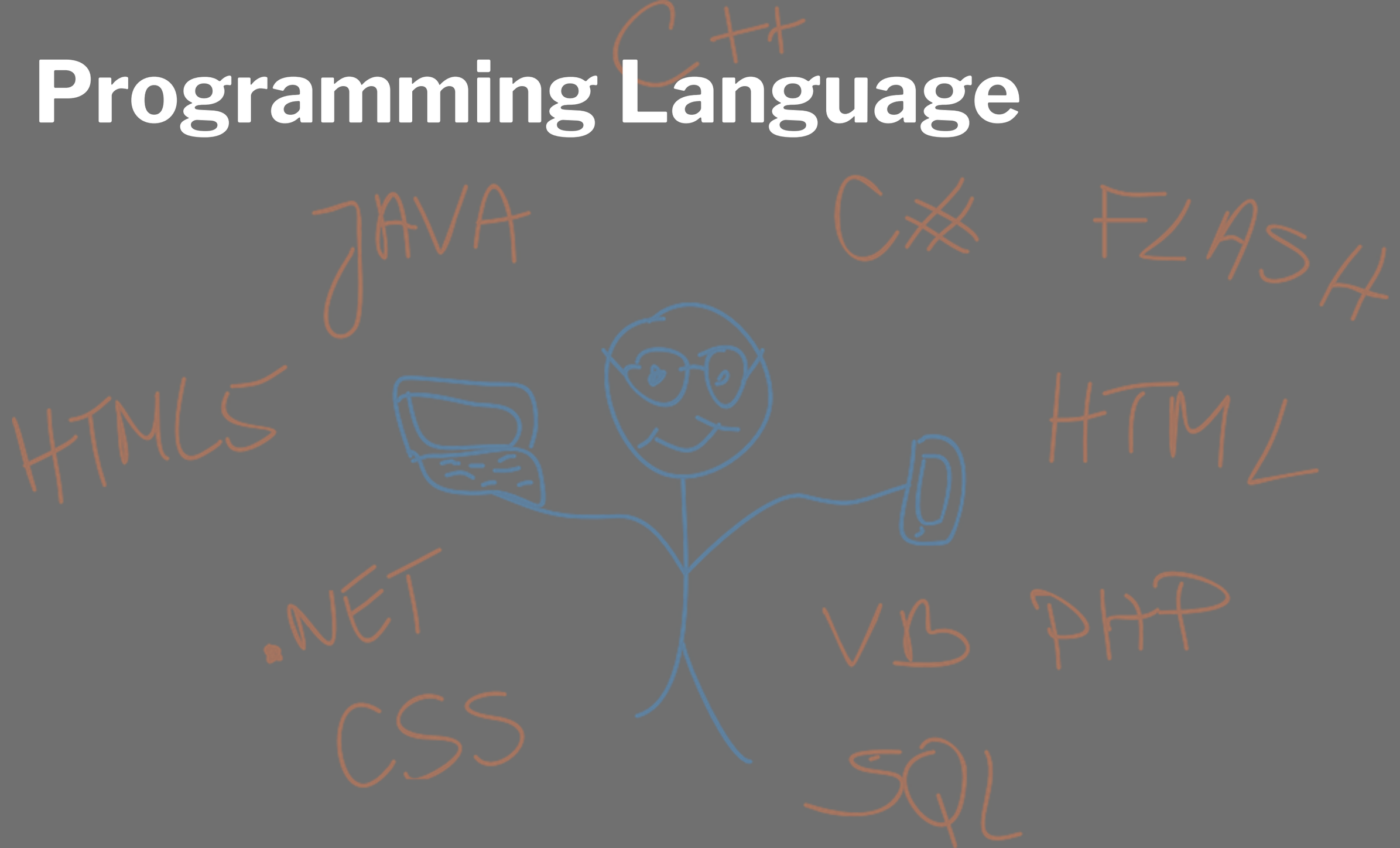
What is programming?

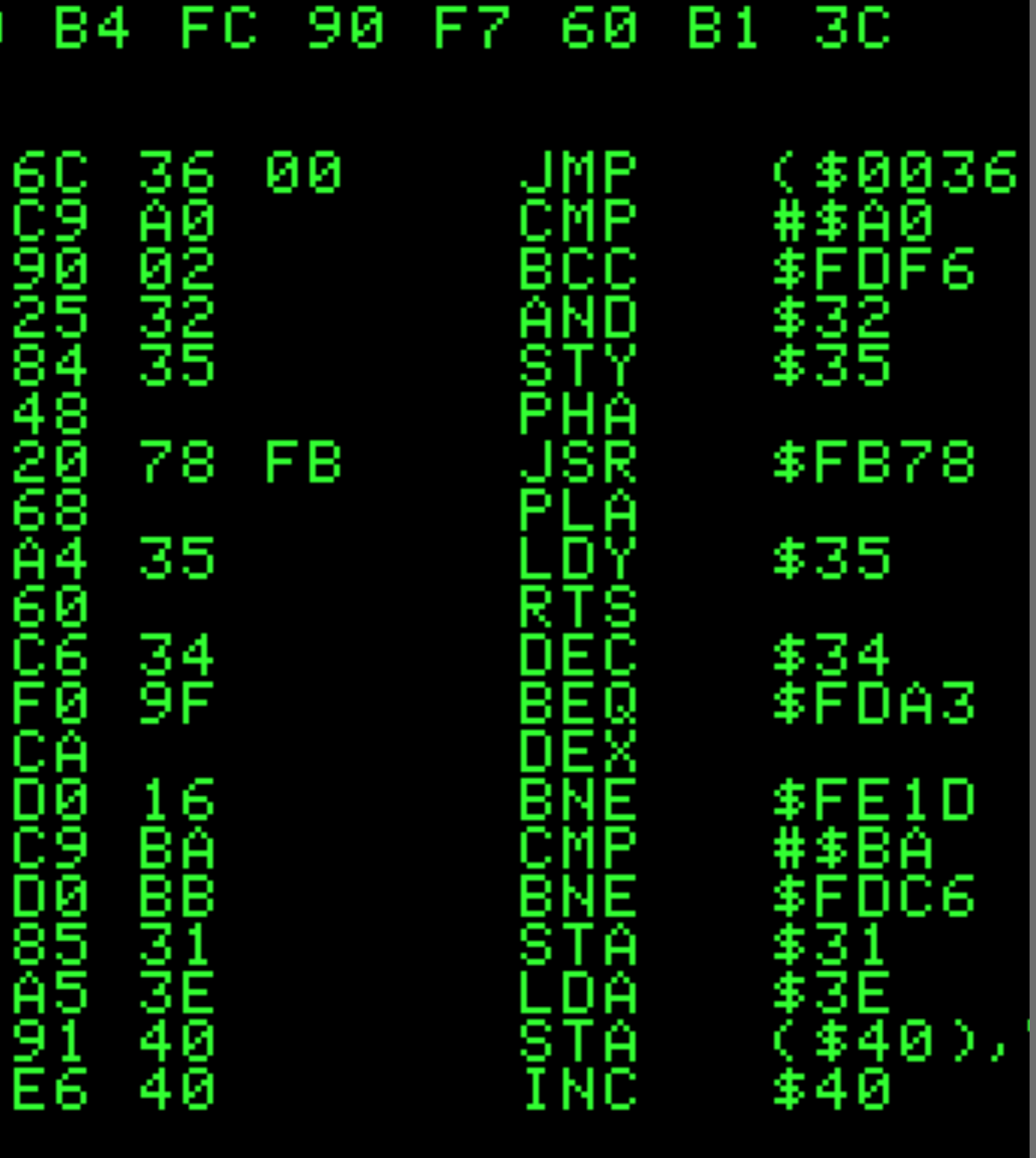
Algorithms


Ice cubes
Light rum
1½oz (45ml)
Simple syrup
1oz (30ml)
Lime segment
Soda water

Symbol	Name	Function
	Start/end	An oval represents a start or end point
	Arrows	A line is a connector that shows relationships between the representative shapes
	Input/Output	A parallelogram represents input or output
	Process	A rectangle represents a process
	Decision	A diamond indicates a decision

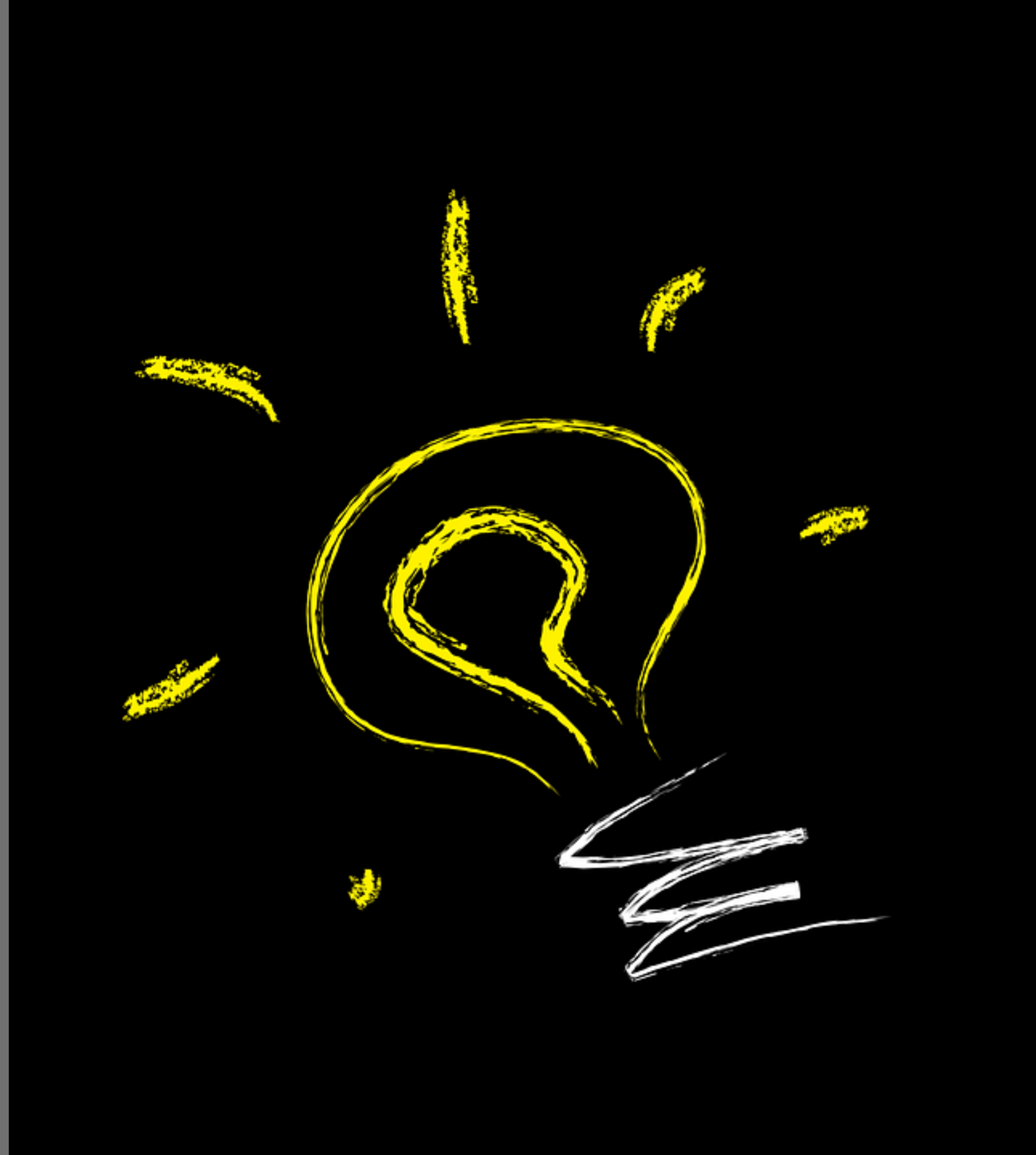
Programming Language

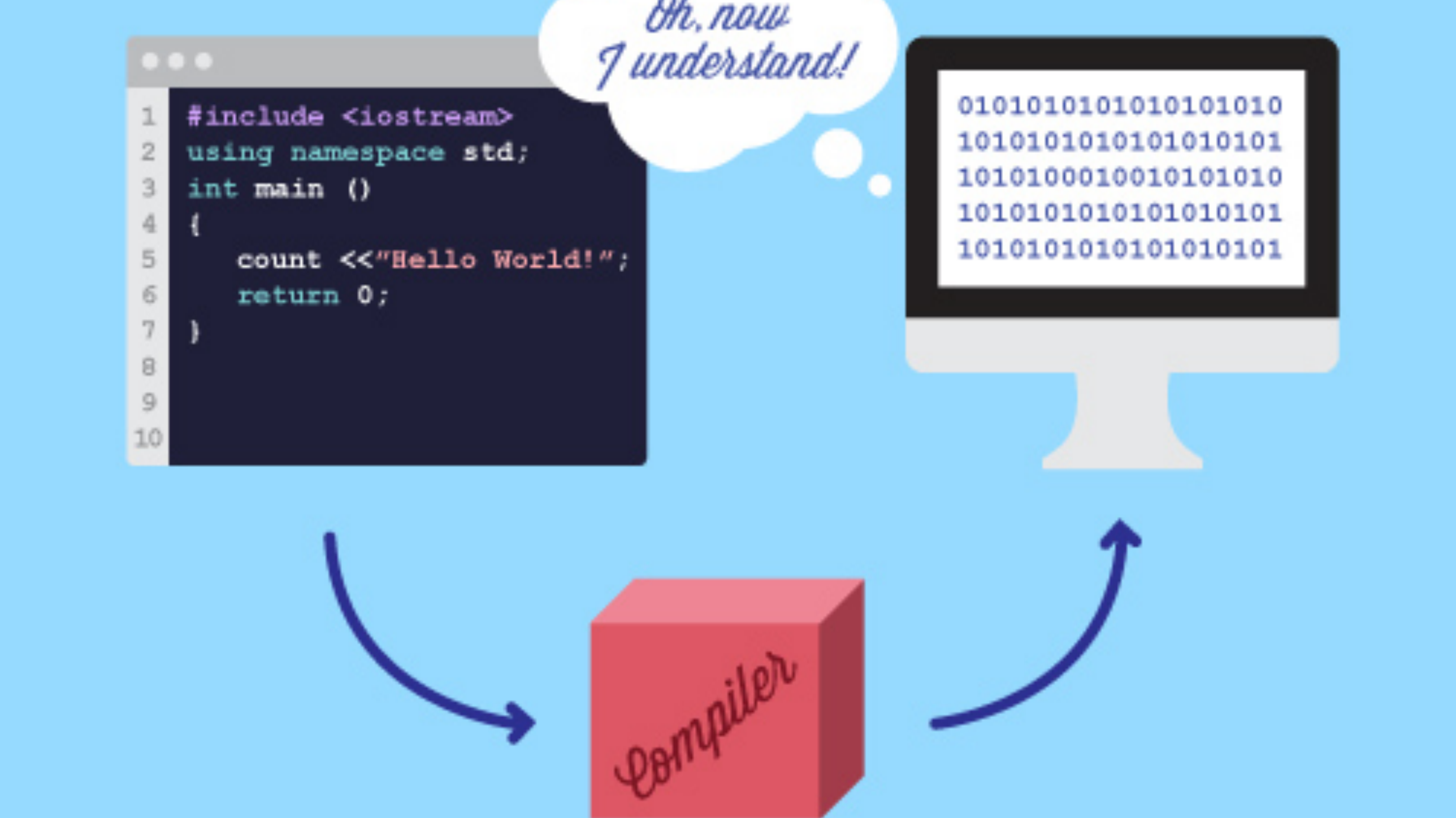


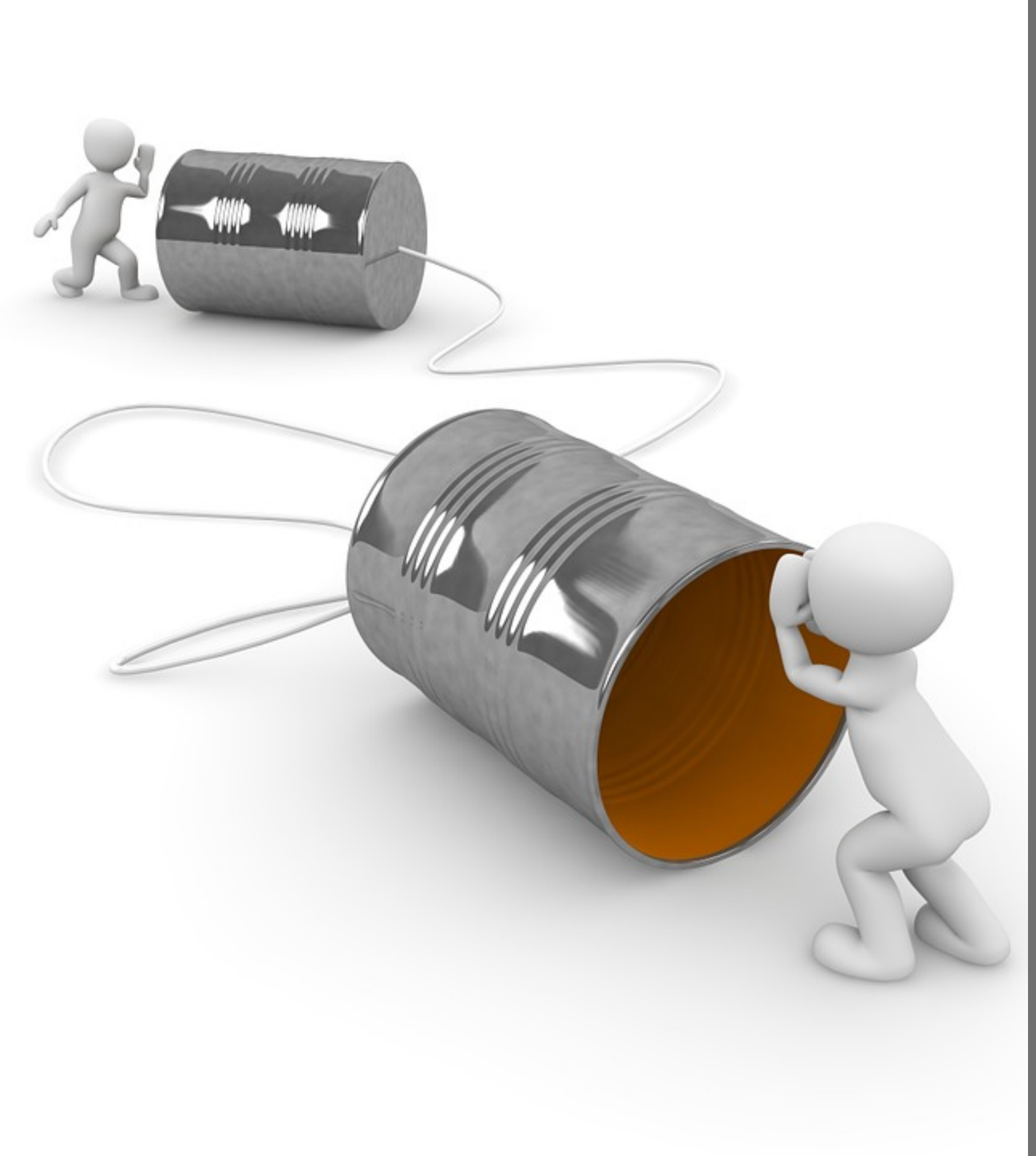


Machine Code

Programming Language




Oh, now I understand!
#include <iostream>
using namespace std;
int main ()
{
count <<"Hello World!";
return 0;
}
01010101010101010101
10101010101010101010
10101000100101010101
10101010101010101010
10101010101010101010
Compiler



Speaking like a developer


WHY?

Declaration

```
var x;
```

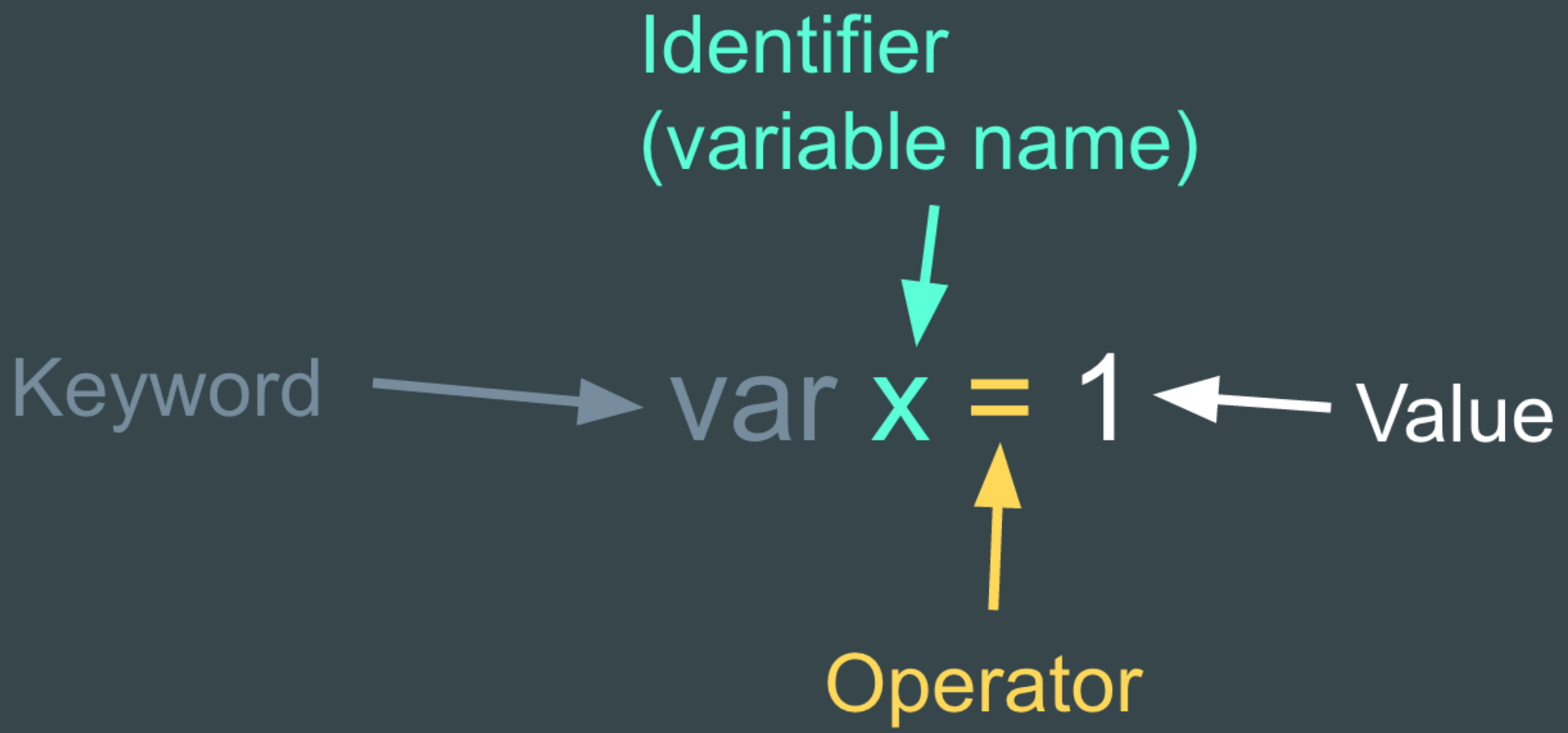
Assignment

```
var x = 1;
```

Declaration/Assignment

The previous example showed them together ... but they can (and are commonly) placed on different lines.

```
var x;
x = 1;
```


Identifier
(variable name)
Keyword
var x = 1
Value
Operator

Identifiers

Used in

— Variable Names.
— Function Names.
— Parameter Names.

Rules

— Must Start with a letter, _ or $.
— The rest may be letters, numbers, _ or $.

Keywords

— Reserved

— if / function / var / while / this (and more)

```
var pi = 3.14
```

Operators

— They act like functions

— Different Syntax

```
var five = 2 + 2
```

Literals

— Literally represents the data.
— Shorthand - extremely common.

```
var greeting = "Hello g[32]";
```

Expressions / Statements

- Expression
  - Something that results in a value.
  - someVar
  - 1 + 1
- Statement
  - A block of code that does something
  - If (x === y) …
  - x = 7;

Statement or Expression

```
var x = 1 + 1
```

Statement or Expression

```
var x = 1 + 1
```

Trick question ... both

Evaluation

The order in which Javascript does things.

```
var a = 5;
var b = 10;

function sum(a,b) {
  return a + b;
}

if (sum(a,b) > 9) {
  console.log('Greater than 9');
} else {
  console.log('Less than 9');
}
```

Source Code to Machine Code. Digital image. Compiling. Skillcrush, n.d. Web. http://skillcrush.com/2012/06/13/compiling/.