Introduction

This terminology guide is designed to introduce and familiarize Eleven Fifty Academy students to common terms that you will hear in the classroom and throughout your program. As develop your coding skills, you will learn the complexity behind many of these terms. So, this is certainly not an all compassing document, but it is a great start. It is not expected that you would memorize these terms. Feel free to use this as a reference tool throughout your journey into learning coding.

This guide includes terms related to learning Java, JavaScript, and .NET.

NOTE: With the continual growth of technology, you may find that some of our links are unexpectedly outdated or no longer work. We apologize in advance. It is the risk of using web links for easy reference for you. If you discover this or have additions, or want to tell how much you love this guide, email at learning@elevenfifty.org and we will work on getting updated for future students. Thanks for your patience and understandinng.

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General Terms

1's and 0's

(also refer to binary code); a binary code represents text or computer processor instructions using the binary number system's two binary digits, 0 and 1.

Abstraction

Pulling out specific differences to make one solution work for multiple problems. Check this out: http://www.tutorialspoint.com/java/java_abstraction.htm

Algorithm

A list of steps to finish a task; a set of instructions that can be performed with or without a computer (think of the steps of making a peanut butter and jelly sandwich).

AND / OR

AND means "as well as" and is inclusive (such as "I like coke AND pepsi (too)"); OR means either one thing or another, but not both or all. Both known as logical operators.

Binary

A way of representing information using only two options.

Bug

An error in a program that prevents the program from running as expected.

Call (a function)

This is a piece of code that you add to a program to indicate that the program should run the code inside a function at a certain time.

Classes

Describes a particular kind of object; it can contain related methods and data members (variables); must have the same name as the file it is contained in.

Check this out: https://msdn.microsoft.com/en-us/library/0b0thckt.aspx

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Code

One or more commands or algorithm(s) designed to be carried out by a computer.

Command

An instruction for the computer.

Compiled Vs. Uncompiled

Compiled code is code that is translated into a machine-readable language; uncompiled code is when a programmer finishes writing code, but the code won't run on a computer until it is translated.

Want to know more? http://stackoverflow.com/questions/3265357/compiled-vs-interpreted-languages

Computational thinking

Mental processes and strategies that include: decomposition, pattern matching, abstraction, algorithms (decomposing problems into smaller, more manageable problems, finding patterns, etc.).

Computer science

Using the power of computer to solve problems.

Conditionals

Statements that only run under certain conditions or situations.

Control Flow

Sometimes referred to as flow of control, but it is the order function calls, instructions, and statements that are executed or evaluated when a program is running.

Crowdsources

Getting help from a large group of people to finish something faster.

Data

Information (often quantities, characters, or symbols that are inputs or outputs of computer programs).

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Data Structure

A data structure is a particular way of organizing data in a computer so that it can be used efficiently; can implement one or more particular abstract data types (ADT), which specify the operations that can be performed on a data structure and the computational complexity of those operations.

Data Type

A data type, in a programming language, is a set of data with values having predefined characteristics; examples may be integers, floating point unit number, character, string, and pointer.

Debugging

Finding and fixing errors in programs.

Decompose

Break a problem down into smaller pieces.

Define (a function)

To add code inside a function so that the program knows what it is supposed to do when the function is called.

DNS (domain name service)

The service that translates URLs to IP addresses.

DSL/cable

A method of sending information using telephone or television cables.

Embed (nest)

If something is embedded or nested in a program, it means that one piece of programming is contained within another.

Event-handler

A monitor for a specific event or action on a computer. When you write code for an event handler, it will be executed every time that event or action occurs. Many event-handlers respond to human actions, such as mouse clicks.

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Expression

Any legal combination of symbols that represents a value.

For loop

A loop with a predetermined beginning, end, and increment (step interval).

Want to know more? http://www.w3schools.com/js/js_loop_for.asp

Function

A piece of code that you can easily call over and over again; a function definition is a segment of code that includes the steps performed in the function; a function call is the code segment, typically within the main logic of the program, which invokes the function.

Want to know more?
http://www.tutorialspoint.com/computer_programming/computer_programming_functions.htm

If…Then…Else

If…Then…Else is a computer's way of evaluating something and saying that if it has a particular attribute it will do one thing, otherwise it'll do something else.

Want to know more? https://msdn.microsoft.com/en-us/library/752y8abs.aspx

Inheritance

Occurring in object-oriented programming, inheritance enables new objects to take on the properties of existing objects; a class that is used as the basis for inheritance is called a superclass or base class; a class that inherits from a superclass is called a subclass or derived class.

Want to know more?
https://docs.oracle.com/javase/tutorial/java/IandI/subclasses.html

Input

Can be either the device you use to interact with a computer or an instruction in a program to key in words or numbers using one of those devices.

IP address

A number assigned to any item that is connected to the internet.

Want to know more? https://en.wikipedia.org/wiki/IP_address

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Iteration

A repetitive action or command typically created with programming loops.

Want to know more?
http://www.openbookproject.net/thinkcs/archive/java/english/chap06.htm

Language

A programming language is the name given to one of the many ways in which a computer can be given instructions in a program (like Java, .NET, iOS, Python, etc.)

Logic

If someone is using logic, they are explaining something by following a set of rules, even if they don't always realize that. Guessing is not using logic.

Loop/Repeat

The action of doing something over and over again.

Want to know more?
http://www.cs.utexas.edu/users/porter/cs304p/Practice/loops.html

Object-oriented Programming (OOP)

This is a programming paradigm based on the concept of "objects", which may contain data, in the form of fields, often known as attributes; and code, in the form of procedures, often known as methods.

Want to know more? http://www.oracle.com/technetwork/java/oo-140949.html

Operator

An operator tells the computer what to do with inputs values and variables.

Output

Output can be either the device a computer uses to give you information or the actual information itself. Output can come in many forms such as words, images, movement and sound.

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Packets

Small chunks of information that have been carefully formed from larger chunks of information.

Want to know more? http://searchnetworking.techtarget.com/definition/packet

Parameter

An extra piece of information that you pass to the function to customize it for a specific need.

Want to know more? http://techterms.com/definition/parameter

Parallelism

In some computer languages, it is possible to make the computer perform more than one task at the same time.

Print

Print can mean either some output on a screen or on paper through a printer.

Program

An algorithm that has been coded into something that can be run by a machine.

Want to know more? https://en.wikipedia.org/wiki/Computer_program

Pseudocode

Another way to describe program statements; can easily by converted to a specific program language source code and then compiled and converted into the machine code that is required by the computer's central processing unit.

Want to know more? http://www.unf.edu/~broggio/cop2221/2221pseu.htm

Scope

This is the part of a computer program where the binding is valid: where the name can be used to refer to the entity (also refer to algorithm).

Want to know more? https://en.wikipedia.org/wiki/Scope_(computer_science)

Semantic error

Using a correct word in the wrong context.

Want to know more? http://stackoverflow.com/questions/7849684/what-is-semantic-errors-in-c-language-give-some-examples

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Servers

Computers that exist only to provide things to others.

Want to know more? https://en.wikipedia.org/wiki/Server_(computing)

Sequence

In programming, this means the ordered steps in a program.

Simulation

A simulation is an accurate representation of a real life activity; we use simulations when something is either too dangerous or too expensive to do for real.

Want to know more? https://en.wikipedia.org/wiki/Computer_simulation

Syntax

Rules of language.

Want to know more? https://en.wikipedia.org/wiki/Syntax_(programming_languages)

Syntax error

Misuse of the programming language.

Want to know more? https://en.wikipedia.org/wiki/Syntax_error

URL (universal resource locator)

A relatively easy-to-remember address for calling a web page.

Want to know more?
https://docs.oracle.com/javase/tutorial/networking/urls/definition.html

Value

A value is the number or word we give to a variable.

Want to know more?
https://en.wikipedia.org/wiki/Value_(computer_science)

Variable

A placeholder for a piece of information that can change.

Want to know more?
http://www.tutorialspoint.com/computer_programming/computer_programming_variables.htm

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Java Terms

Glossary of General Java Terms:

https://docs.oracle.com/javase/tutorial/information/glossary.html

Assign

To set the data of a variable (involves the equal sign).

Want to know more?
http://stackoverflow.com/questions/3858510/assigning-in-java

Constructor

A special type of instance method that creates a new object; in java, constructors have the same name as their class and have no return value in their declaration.

Want to know more?
http://stackoverflow.com/questions/579445/java-constructors

Declaration

A statement that creates a variable, method, or class identifier and its associated attributes but doesn't necessarily allocate storage for variables or define an implementation for methods; classes are always defined when they are declared.

Want to know more?
http://stackoverflow.com/questions/3652369/java-string-declaration

Definition

Similar to a declaration except that it also reserves storage (for variables) or provide implementations (for methods).

Garbage collection

Programs require memory to run; memory for objects is allocated by the keyword new; when objects are no longer used or your program terminates, java automatically frees the used memory for other uses.

Want to know more?
http://www.javatpoint.com/Garbage-Collection

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Initialize

An assignment that sets the starting value of a variable.

Want to know more?
https://docs.oracle.com/javase/tutorial/java/javaOO/initial.html

Instantiate

To allocate storage for an object in memory (involves the keyword new).

Want to know more?
http://stackoverflow.com/questions/17986220/how-to-instantiate-an-object-in-java

Method

A collection of code found within a class; if the data members of a class are nouns, the methods are the verbs (the action).

Want to know more?
https://docs.oracle.com/javase/tutorial/java/javaOO/methods.html

Object

The principal code building block of java programs; each object in a program consists of both variables (data) and methods (functionality).

Want to know more?
https://docs.oracle.com/javase/tutorial/java/concepts/object.html

Parameter

A variable or object passed into a method.

Want to know more?
http://mathbits.com/MathBits/Java/Methods/PassingMethods.htm

Primitive

A variable defined with a primitive data type: byte, short, int, long, float, double, char, or Boolean

Want to know more?
http://docs.oracle.com/javase/tutorial/java/nutsandbolts/datatypes.html

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Typecast

To demote a variable from a larger capacity data type to a smaller one 2) to re-establish the class of an object; the cast associates itself with the expression to its immediate right.

Want to know more?
https://www.youtube.com/watch?v=qJ5Dc8eLyqA

Use/read

The use of a variable in the right hand side of an assignment statement.

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JavaScript Terms

Comparisons

These evaluate the value of one variable in relation to another variable or a value specified in an expression.

Dot syntax

Used to combine terms, for example the object and property *window.status;,* or the object and method *document.write ("Hello World");*

Events

Associate an object with an action; JavaScript uses commands called event handlers (see general glossary for event-handlers) to program events.

Methods

Actions applied to particular objects, that is, things that they can do.

Objects

Refers to windows, documents, images, tables, forms, buttons or links, etc.; because you can have more than one of an object type, objects should be named.

Operators

Used to handle variables; arithmetic functions are operators

Properties

Object attributes; object properties are defined by using dot syntax: the object's name, a period, and the property name.

Values

Bits of information; some types are number, string, Boolean, null, object, and function.

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.NET Terms

Access Modifiers

Language keywords used to specify the visibility of the methods and member variables declared within a class.

Want to know more?
https://msdn.microsoft.com/en-us/library/ms173121.aspx

Array

A collection of objects of the same type, all of which are referenced by a single identifier and an indexer.

Want to know more?
https://msdn.microsoft.com/en-us/library/9b9dty7d.aspx

Boxing

Conversion of a value type to a reference type object (such as System.Object).

Want to know more?
https://msdn.microsoft.com/en-us/library/yz2be5wk.aspx

Catching

To trap a program exception.

Want to know more?
https://msdn.microsoft.com/en-us/library/aa287580(v=vs.71).aspx

Exception

A signal that is generated when an unplanned or unexpected event occurs.

Want to know more?
https://msdn.microsoft.com/en-us/library/system.exception(v=vs.110).aspx

Exception Handling

The process of trapping an exception and performing some sort of corrective procedure in response.

Want to know more?
https://msdn.microsoft.com/en-us/library/ms173162.aspx

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Fields

Same as member variables.

Want to know more?
https://msdn.microsoft.com/en-us/library/ms173118.aspx

Hash Code

A unique number generated to identify each module in an assembly.

Want to know more?
https://msdn.microsoft.com/en-us/library/system.object.gethashcode%28v=vs.110%29.aspx

Identifiers

The names that programmers choose for namespaces, types, type members, and variables.

Want to know more?
https://msdn.microsoft.com/en-us/library/aa664670(v=vs.71).aspx

Keywords

Names that have been reserved for special use in a programming language.

Want to know more?
https://msdn.microsoft.com/en-us/library/x53a06bb.aspx

Overriding

To supercede an instance field or virtual method in a base class with a new definition of that field or method in the derived class.

Want to know more?
https://msdn.microsoft.com/en-us/library/ebca9ah3.aspx

Stack

An area of program memory used to store local program variables, method parameters, and return values; in .NET, value types are allocated on the stack.

Want to know more?
https://msdn.microsoft.com/en-us/library/system.collections.stack(v=vs.110).aspx

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