

## **Level 0 - Fundamental Knowledge**

The things you need to know before you get started - the basics of coding.

- Loops
  - For loops
  - While loops
  - Do while loops
  - For each loops (super important)
- Ifs
  - In some cases, you can do switch statements as well
- Arrays
  - 1d arrays
  - 2d arrays
- Data types
  - Int
  - String
  - Float
  - Double
  - Char
- Big O Complexity (basics, nothing extreme)

[Big list of Data Structures](#)

[Big list of Algorithms](#)

[Really good free course](#)

**Books:**

[Algorithms \(4th Edition\)](#)

[Introduction To Algorithms \(3rd Edition\)](#)

(Continue on the next page)

Name	Learn It	Practice (Hackerrank)	<a href="#">Algo.is</a> lecture	Completed
Arrays (1D & 2D)	<a href="#">1</a> <a href="#">2</a>	<a href="#">1</a>	2, 3	
Sets & HashMaps / Dicts	<a href="#">1</a> <a href="#">2</a> <a href="#">3</a>	<a href="#">1</a> <a href="#">2</a>	2, 3	
Heaps	<a href="#">1</a> <a href="#">2</a>	<a href="#">1</a>	2, 3	
Linked Lists	<a href="#">1</a> <a href="#">2</a>	<a href="#">1</a>	2, 3	
Stacks & Queues	<a href="#">1</a> <a href="#">2</a> <a href="#">3</a>	<a href="#">1</a>	2, 3, 8, 9	
Adjacency List	<a href="#">1</a> <a href="#">2</a>		8, 9	
Binary Search Trees	<a href="#">1</a> <a href="#">2</a>	<a href="#">1</a>		
Minimum Spanning Trees	<a href="#">1</a> <a href="#">2</a> <a href="#">3</a>	<a href="#">1</a>		
Sorting & Search Algorithms	Entire List: <a href="#">1</a> Way too much resources, just Google it	<a href="#">1</a>	4	
Breadth First Search	<a href="#">1</a> <a href="#">2</a>	<a href="#">1</a> <a href="#">2</a>	8, 9	
Depth First Search	<a href="#">1</a> <a href="#">2</a> <a href="#">3</a>	<a href="#">1</a>	8, 9	