A Primer on Computer Science  
By Nnamdi Michael Okpala

# **A Warm Welcome — A Few Words from the Author**

Nnoo! My name is Nnamdi Michael Okpala. As a problem solver diagnosed with Autism, ADHD, and Asperger’s, I often find conventional problem-solving frameworks overwhelming — especially when multitasking or tackling complex issues.

Modern research shows that many autistic individuals engage in “masking,” which refers to the ability to blend in and act like others during social interactions. Unfortunately, this can lead to false positives or true negatives in diagnoses.

**Why Do Autistic Individuals Mask?**

Autistic individuals mask for various reasons, including but not limited to:

* **Fitting In:**  
  Many autistic people strive to be part of a group while battling the internal urge to stand out. It’s essential for autistics to challenge norms and break out of their comfort zones.
* **Social Pressure from Friends and Family:**  
  Often, friends and family may suggest that certain behaviours are “not normal.” This societal pressure can be overwhelming. Remember, normal is merely an average, and it’s more important to focus on your unique strengths rather than conforming to others’ expectations.
* **Fear of Judgment:**  
  Due to a lack of understanding surrounding autism, many feel compelled to mask their true selves to avoid judgment and mitigate potential hostility. Unfortunately, this strategy rarely proves effective in the long run.

Despite these challenges, autistic individuals possess extraordinary skills and talents, enabling them to learn and adapt quickly. However, through masking, they often hinder their abilities and live in fear of being “discovered.”

To get the most out of this eBook, I encourage you to embrace your authentic self rather than masking. Allow your unique perspectives to shine through. I invite everyone to scrutinize every aspect of my work — leave no stone unturned, and examine every argument I present. By doing so, you’ll grow as an individual and gain valuable insights.

# Why I am writing?

I have decided to write this eBook to give people like me an educated both holistic (objective and subjective) foundation on computer science. From Full Stack Web Development to Cryptography- The science of making and breaking codes. My **objective** is to give you knowledge that allows you to work and contribute in the most effective manner.

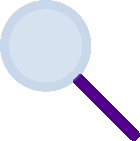
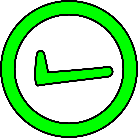
I will use this opportunity to promote all my work that I have released. Regard this, I hope to give you the education, and tools to work seamlessly. My work which is on social media showcases my diverse set of skills over 11 years of programming (aged 12). Please see what is What is Problem Solving as that is what is computer science is all about.

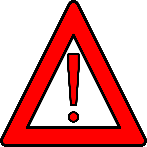
# Disclaimer for ALL Readers

Dear Readers, I am excited to bring you the eBooks – A Primer on Computer Science’. In this eBook, I aim to shed lights on the knowledge given to every computer science in primary, colleges, and university. I also aim to do so in the most effective manner.

As an Autistic Problem Solver diagnosed with ADHD, and Asperger, and a mild learning disability who hopes to bring you on the best content, I have created this **Accessibility Convention.** Kindly review them.

## TLDR – Review the Accessibility Conventions:





# What is Computer Science?

Computer Science is a diverse and involving branch of related fields revolving around and not limited to the theoretical, engineering and application of computers. These fields are the main fields of computer science. Personally, I would define ‘computer science’ as the **nature of computation**.

# What is Problem Solving?

Problem Solving is the processing of mitigating an arising issue that is defined made a problem. Problem Solving is essential in all aspect of the computer science - nature of computation. In game theory, a solution to a problem is a problem for the opposition.

In other words, new algorithm introduced to tackle the problem introduced by oppositions commonly based of strategy and tactics.

A problem statement is the formally definition used by everyone to dictate to everyone especially yourself what the problem is. A rule of thumb when it comes to write a problem statements are the following:  
  
1) Write the Problem down  
- Writing the problem down is half the problem solved, this means that we should define the problem more formally by writing down 5Ws? (who, what, when, why, where). The is what I call the context of the problems.

,  
  
2) Coming Up with a Solution

* A solution can be creative or rigorously defined. This being my understanding, A solution can be on spectrum on rigorously defined through testing, researching etc to creative solving with a variety of use cases.

To solve problems of a greater magnitude, we can create a systematic or methodology approach.

A systematic approach is one which follows a step-by-step approach where everything thing can be done by the user, and does not require the intervention of a third party.  
- Designing a logo for yourself

A methodological approach to solving large problem involves a third party. Example include:  
- Designing a logo for a client

## Conclusion on Problem Solving - To Long didn’t read

To solve any problem, the problem must be formally defined. We can use the template above writing it down according to our situation from the context to a solution.

# The Map of Computer Science

In addition, I have based this eBook The Map of Computer Science. The Map of Computer Science visually outlines the broad field that is computer science.

The Nature of Computation  
Let me explain, Computer are deterministic machine perform a **set** of finite step by step instruction known as an **algorithm**. An algorithm can be deterministic or non-deterministic in nature. All types of algorithms are modelled with functions.

|  |  |
| --- | --- |
| Deterministic Algorithm | Non-Deterministic Algorithm |
| Definition: A deterministic algorithm always yields/returns the same output given the same input. | A non-deterministic function may yields/returns a different output when given the same input. |

# What are Functions?

Mathematically, A function is a **black-box** which takes and **input** perform necessary computation, and yields or returns an output. All programming language allow you to define your own functions.