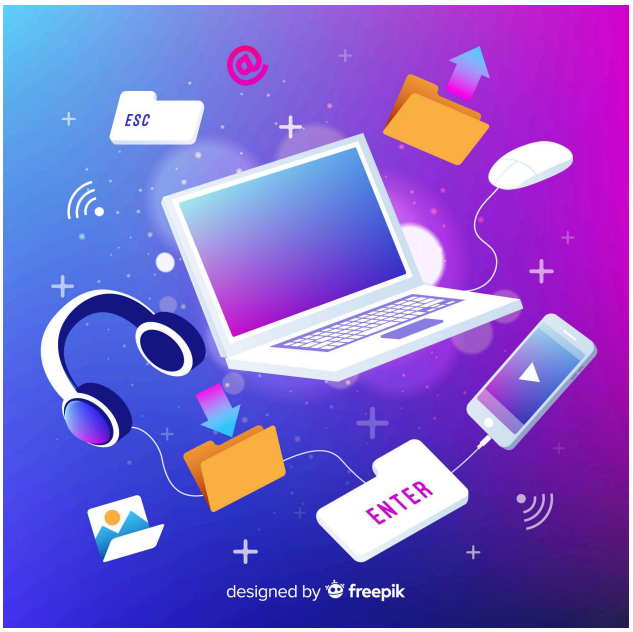
NYP LIT



Learn more about the technology world!

Hi! Are you interested to learn a little more about the technology world? This document here will give you a basic knowledge of coding development, The IT Industry world outside and some insights about our school of IT!

Contents Covered:

Scroll down to read!

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Basic Essential Knowledge of coding development

What is a Low Code Platform?

Imagine a Low-Code Platform is like building with a set of advanced LEGO bricks instead of starting from raw clay. A Low-Code platform is a visual way to build apps (like for your phone or a website) or automate tasks that require very little traditional coding.

How it works:

You use a simple drag-and-drop interface to put together pre-built parts (the "bricks") like buttons, forms, and galleries.

The Benefit

It lets people with little or no coding experience (a student who has no coding experience or a business manager) create useful software much faster than a professional developer writing every line of code from scratch.

The Difference

"Low-Code" is more flexible than "No-Code." It still allows an experienced person to add a small amount of custom code (like a unique LEGO piece) for advanced features that the ready-made bricks can't handle.

Watch this youtube video:
https://youtu.be/FMkOdYoZG7A?si=v-09D2hHDTbWPdP-

Foundational Programming Languages

Do you have an interest to learn programming but unsure where to start?
Don’t worry! Here, we give you the recommended programming languages to learn for beginners!

Read this intro to programming article:
https://www.w3schools.com/programming/index.php

1.Python
It is the **easiest to learn** text-based language, with a simple, readable syntax that lets you practice and understand programming logic! They are usually used in the areas of **AI** (Artificial Intelligence), **Data Science**, and **Web Back-Ends**.

Watch this youtube video:
https://youtube.com/shorts/_3Evgblmfwo?si=XRARIP3KGn9uyIHY

2."The Web Trio" (HTML, CSS, Javascript)
Even though there are apps that can help you build websites quickly (like low-code platforms), it's still super important to learn these three languages. Think of them as the **foundation** for every website:

- **HTML** is the **structure** 🧱 (the skeleton and content, like the text, images, and links).
- **CSS** is the **style** ✨ (the designer, controlling colors, fonts, and layout).
- **JavaScript** is the **action** 🕹️ (the brain that makes things interactive, like buttons that work or games that run).

Read this article: https://v1.scrimba.com/articles/html-css-javascript/
Watch this video:
https://youtube.com/shorts/0EQjoRLe1EU?si=pKwIg7ZFRhf4Ozyi

What Is CSS Programming Language?

CSS stands for Cascading Style Sheets. It's the language used to control the look and design of a website. 🎨

Think of a website like a person:

- HTML is the skeleton and the content (the body structure, the text, the images).
- CSS is the clothes, makeup, and hairstyle (the colors, fonts, layout, and visual presentation).

What does CSS do?

CSS takes the raw structure created by HTML and makes it beautiful and organized. It controls things like:

- Colors: The background color, text color, and link color.
- Fonts: The style, size, and boldness of all text.
- Layout: Where things sit on the page (margins, spacing, multi-column designs).
- Responsiveness: Making sure the website looks good on both a large desktop screen and a small phone screen.

What is CSS Classname?

A CSS class name is a simple, reusable label you use in your HTML to target and style specific elements. 🏷️

Visit this website :
https://www.w3schools.com/css/css_intro.asp

What Are Bugs In Programming? 🐛

In simple terms, a **bug** is an **error, flaw, failure, or fault** in a computer program or system that causes it to produce an incorrect or unexpected result, or to behave in unintended ways.

Think of a computer program as a set of instructions (a recipe). A bug is like a typo or a missing step in that recipe that makes the final meal (the program) turn out wrong.

Common Examples of Bugs You See 👀

1. **A Crash**: When an app suddenly stops running or closes completely (e.g., your game instantly closes during a level).
2. **Wrong Output**: When you tell a calculator to do 2+2 and it gives you 5 instead of 4.
3. **Visual Glitches**: When a button is in the wrong place on a website or a character in a video game floats through a wall.
4. **Security Failures**: Errors that allow unauthorized users to access private data.

Watch this youtube video:
https://youtu.be/bg0VsRSmVwQ?si=padYk7hfP0U6VJ9U

Debugging 🐛:

Now that you have read what is bug in the above section, then you may wonder how do we get rid of bugs? Or how do we solve it? Allow me to introduce you to a proper term called: “Debugging”. Debugging is the process of finding and fixing errors (or "bugs") in a computer program's code so that the software works correctly.

Think of it like being a detective 🕵:

1. Identify the Problem: You first figure out exactly what went wrong or why the program isn't doing what it's supposed to do.
2. Isolate the Bug: You trace the program's steps (sometimes using special tools called debuggers) to pinpoint the exact line or section of code that is causing the error.
3. Fix and Test: You change the faulty code and then run the program again to make sure the original bug is gone and you haven't accidentally created any new problems.

Bugs are a normal part of programming! Debugging is a crucial skill that teaches you problem-solving, persistence, and how to analyze code step-by-step.

Read this article:
https://education.launchcode.org/intro-to-professional-web-dev/chapters/errors-and-debugging/what-is-debugging.html

Practice or try out debugging here:
https://education.launchcode.org/intro-to-professional-web-dev/chapters/errors-and-debugging/exercises.html

Console Log Terminal

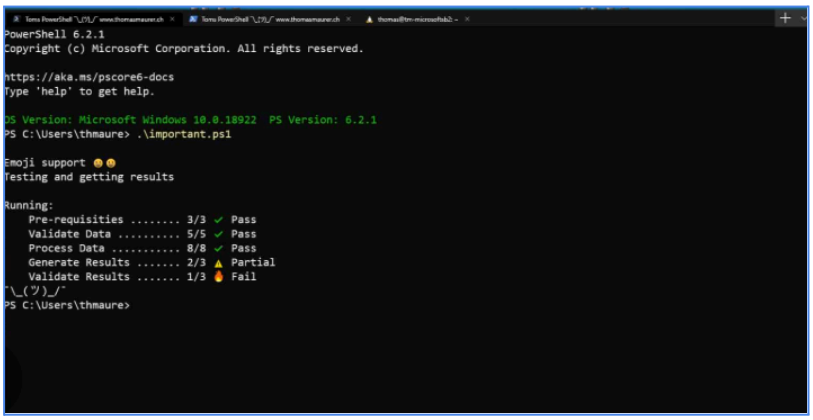
The Console Log Terminal is often used as the core communication screen for developers, split into two roles:

1. **The Terminal** (or Command Line): The Communicator

   Analogy: The text pad where you write instructions for your kitchen assistant.

   Function: You type commands (like run script or open file) to tell the computer system what to do.

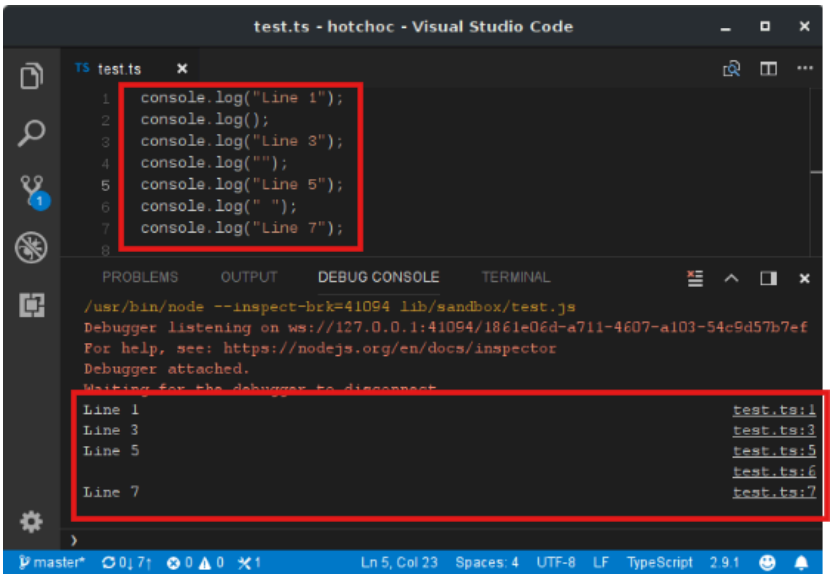
   An Example of how the Terminal looks:



2. **console.log():** The Status Update

Analogy: The assistant whispering updates to you.

Function: This is a coding command you place in your program (the recipe). When the program runs, it prints a message (like "Finished chopping onions!" or "Warning: temperature is too high!") directly to the Terminal window.



In summary, the Terminal is where you send instructions, and the console Log is where the running program sends feedback, updates, and messages

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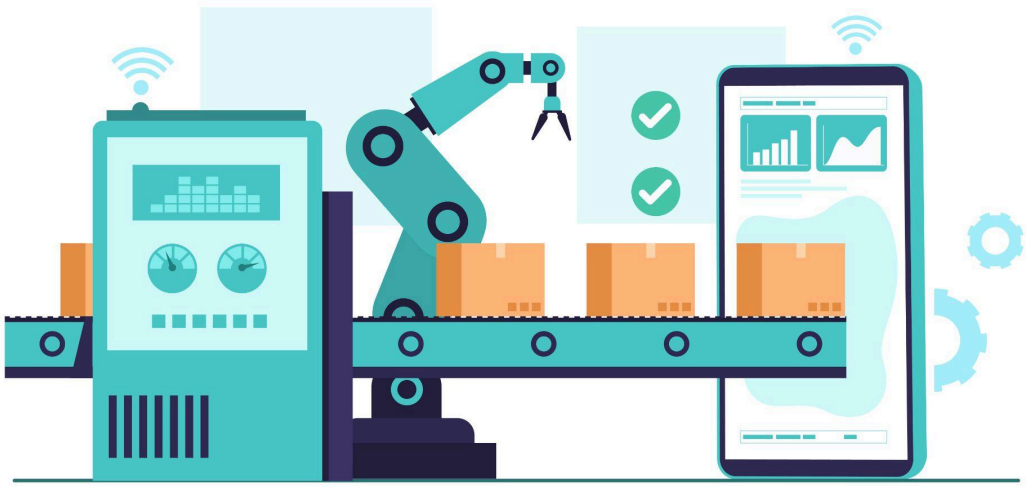
Additional IT Knowledge

Introduction to Automation

Have you heard of Automation? What is Automation?



1.Automation in Real life

Automation in real life means using technology to make tasks happen automatically without human effort each time. It's about setting up systems or machines to do repetitive actions for us faster, more accurately, and more efficiently.

In simple terms:

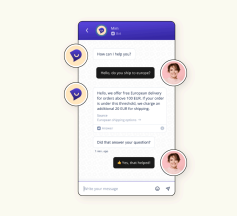
| Automation = "When something happens, make life easier by letting technology do it for you."

Watch this youtube short:

https://youtube.com/shorts/gwftnE_kKqw?si=18N34kg2EtnpiT9i

2 Examples of Automation in real life

Smart Thermostats: Use sensors to check the room temperature (the trigger) and automatically turn the heat or air conditioning on or off (the action) to maintain a perfect setting.



Chatbots (Online Customer Service): Use software to read your question (the trigger) and automatically provide an accurate answer, handling simple tasks so human agents can focus on complex issues.

Additional Advance UI Bakery Feature

2. Automation in UI Bakery

Automation in UI Bakery allows you to perform **a series of actions automatically** when something happens, such as clicking a button or changing an input value or loading a page. It helps make your app more interactive and efficient without needing to manually trigger each step.

In simple terms:
| Automation = "When something happens, make the app do it by itself."

What you can automate in UI Bakery:

1. Show Notifications
2. Save to State
3. Call APIs
4. Show or Hide Components
5. Run JavaScript

Visit the link:
https://docs.uibakery.io/extras/automations

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Check out Nanyang Polytechnic School of IT!

Find out more about our courses !

https://www.nyp.edu.sg/student/study/schools/information-technology

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Nanyang Poly Technic (NYP)

https://www.instagram.com/nanyangpoly?igsh=MTFkdGc4c3V1NHZudg==

NYP Ladies In Tech (LIT)

https://www.instagram.com/nyp_lit?igsh=cHlneGtkNnc4OTJy