

Motivating Children in Computer Programming

Presenter: Xin Yi Zhang

About the Presenter

Xin Yi Zhang

- Work: 30+ Year in Software Development, HDSB Trustee
- Education: MSCIS, MBA
- Publication: Java ME (2008), XML (2009), jQuery Mobile (2015)
- Teaching: (Lead) Facilitator for an MSCIS program online section, IT training courses



We will discuss

Why coding is important?

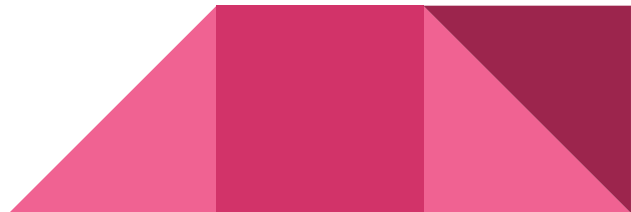
Which programming languages are easier to learn for children?

Is my child too young to start?

Any barriers?

How to start and the Learning Path?

What could be the greatest challenges?



Logical and Structured Thinking Enhancement

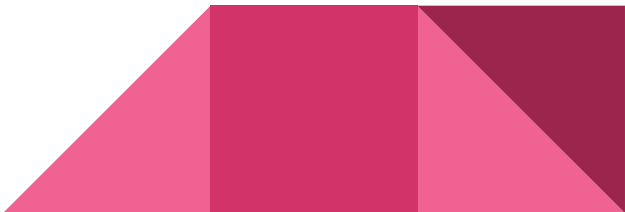
Problem resolving process in the real world

- Multiple factors
- Goals

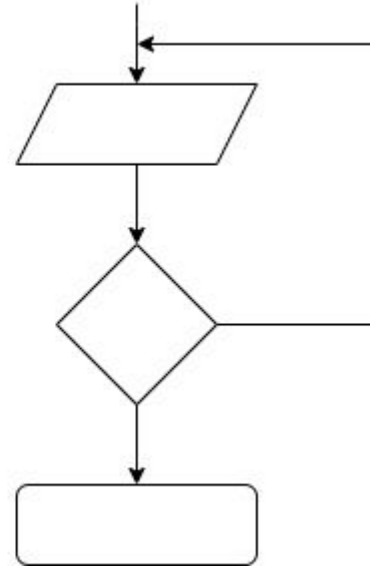
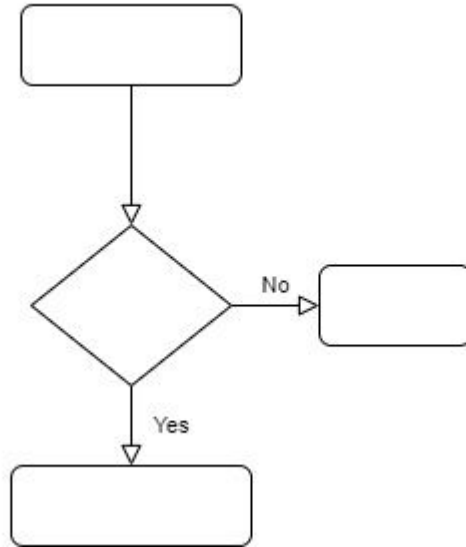
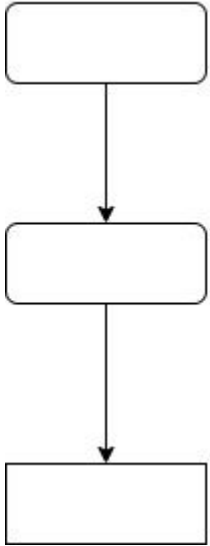
$y = f(x)$

- Input and Output

Basic Structures

- Sequence
 - Selection
 - Loop
- 

Basic Structures



Programming Languages and Related Technologies

Popular

- Scratch
- Java
- Python

Web

- HTML, Javascript, CSS
- Typescript, Node, Angular, React

Mobile

- Android / iOS

Special

- Arduino



Syntax and Theories

Many programming languages adopt syntax similar to C.

- C++, Java, Javascript, Typescript, C#

OOP Theories can be explained later for young learners.



Web

Creating a website without any coding experiences

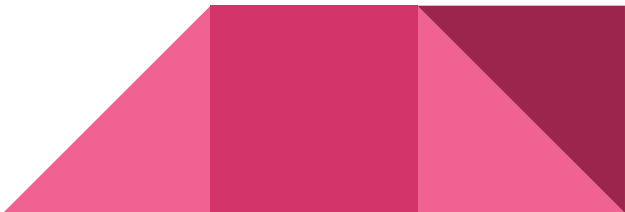
- Google sites

Creating a website from scratch

- Basic coding knowledge required: HTML, Javascript, and CSS

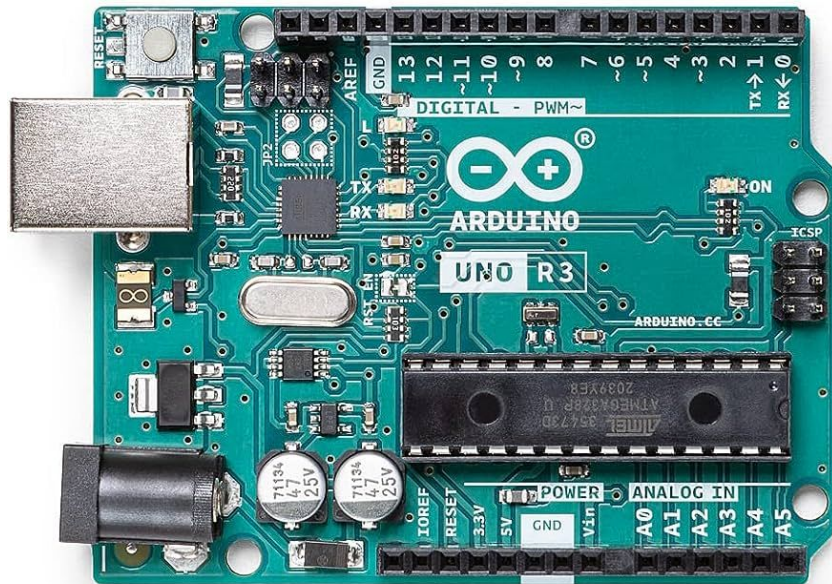
Creating an Advanced Website

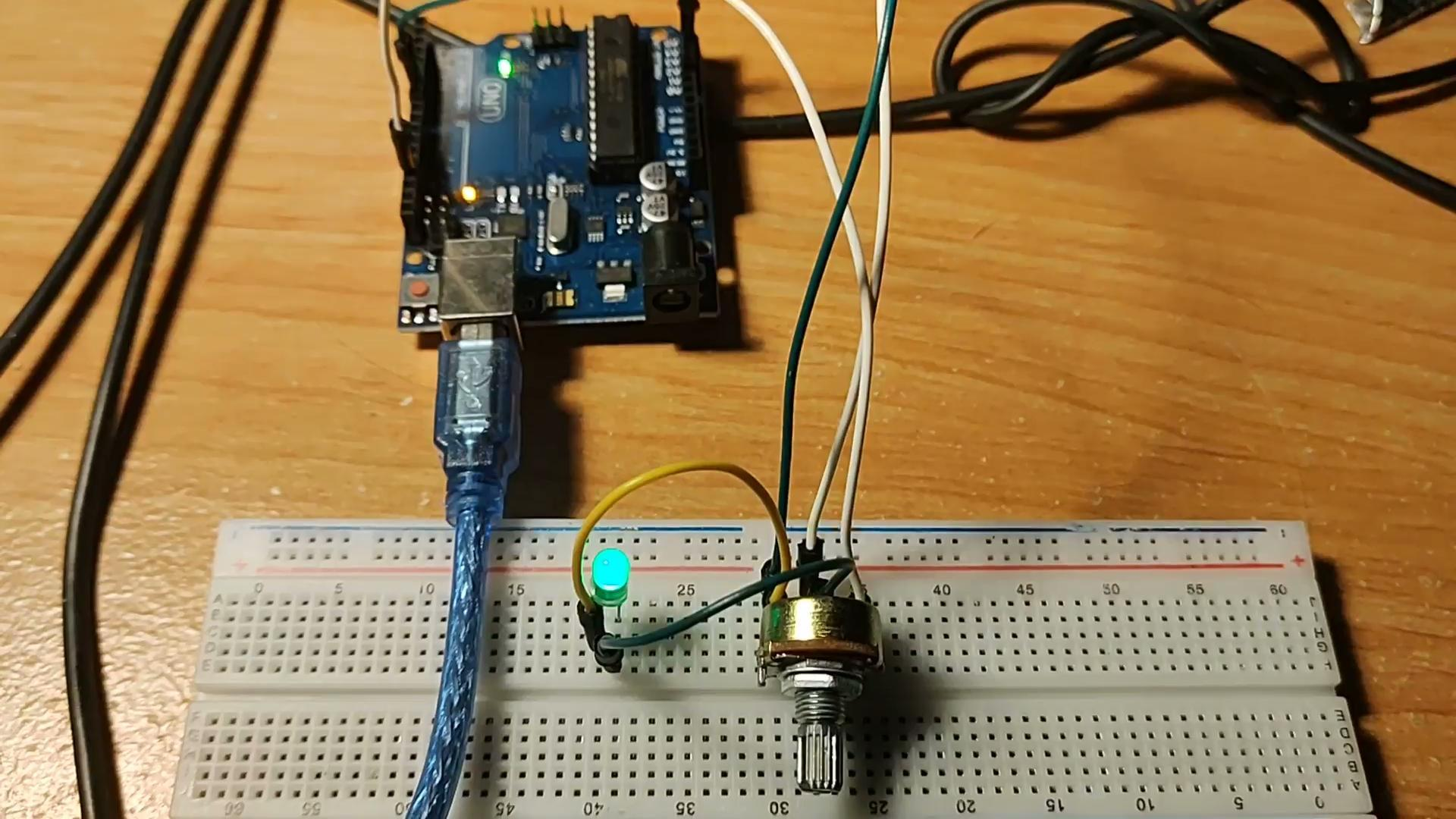
- Web technologies and frameworks
- Server side programming and database skills required.



Arduino

Arduino Uno R3





How to Start?

Each programming language can be used in specific types of applications.

The age of the child is an key aspect

Knowledge of one programming language can be easily transferred to another programming language.



Challenges

Where to get technical support?

- Online tutorial (W3Schools)
- Youtube

Support from parents

- Parents need to learn first to provide support when needed
- Anxiety management



Inspiration


Fun

- Creating a game
- Creating a Website

Achievement

- A public accessible website
- A mobile application in the App Store
- A project in Git that attracts more developers to join
- Certifications

Parents Roles

- Support
 - Encouragement
- 

Achievement Example



Discover

Extensions

Themes

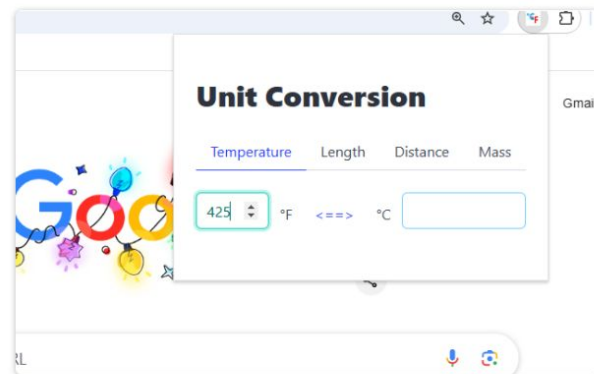
Search extensions and themes

 **Unit Converter**

Remove from Chrome

Extension

Tools



Overview

A convenient unit conversion tool for your Chrome browser.

A Chrome- add-on for convenient access to conversions of commonly used units, such as temperature, length, distance, and mass.