



## Utilising web technologies to bridge the transition from Scratch to Python

### Problem Domain

Changes to the UK curriculum makes coding a mandatory learning requirement within schools.

Students are taught both a graphics based language and a text based one between the ages of 11 and 14.

#### Why Scratch?

Children are already familiar with its design and features due to its use within the classroom.

#### Why Python?

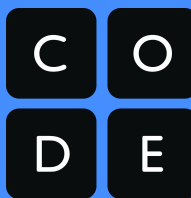
It is feature full and simple enough for a starter language whilst also being popular within industry.

“ I found my first real language hard to grasp however made many complex games using Scratch.

The transition from one to another was not made clear and the concepts I had understood in Scratch did not seem transferable.”

### Existing Products

- Scratch
- One Hour of Code
- Code Club



Both Scratch and One Hour of Code are strictly visual based drag and drop code block styled systems.

These existing products provide short, fun, and themed activities with gradual progression through the stages.



Image Credit: Code Club @ The Media Centre

### Development

#### Platform

A website will be created using the PHP framework Laravel.

#### Theming

Bootstrap will be used as a base for quick templating with additional CSS to increase accessible and audience appeal.

#### Version Control

Both Git and Github will be used to store and track changes within the code whilst the product is being developed.

#### Progress Tracking

Activities and heroics will be listed on a Trello board with each stage having its own list that items can be moved into.

### Key Features

#### Online Lessons

The site will break the down the key concepts into bite sized lessons building up the child's skills over time.

#### Examples and Activities

Code examples and comparisons will be provided to assist with small challenges.

#### Embedded IDE

No external programs will be required to try the activities as the Python IDE and examples will be embedded on the page

#### Keyword Glossary

The definition of common and complex words can be explained through the use of a hyperlink and definition page or via a popup.

#### Progress Systems

Achievements and progress through each lessons and its stages can be displayed live to the user.

#### Completion

Once completed a certification to display this can be printed with the child's name. Links to further resources will also be provided.

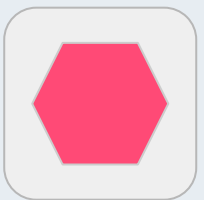


Image Credit: Code Club @ Aotearoa

### Technologies

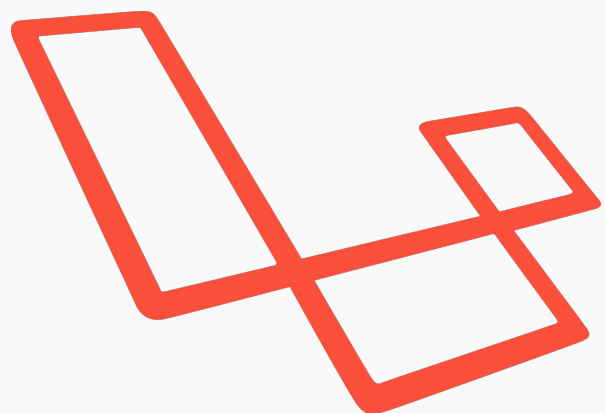


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