



An investigation into the use of educational software to teach programming in the FE sector

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This project is going to look at the skills shortage in the UK computing sector and look at all different sources to find out why there is a skills shortage and then see what could be done about it.

To try and design and develop an effective application existing computing educational tools were looked at to get a good idea about what is out there already. This was so it they could be assessed for their feature to see what was good and what could be improved.

Platform, language and IDE were also looked at to see which one were to best by looking at the disadvantages and advantages of each and then comparing them to see which ones would be best for timescale and complexity of the project.

Aim

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The main aim of the project is to give the user a understanding of the language that they are learning about in the application which they can then use to learn more by themselves by looking at other applications or codes examples to learn how they work and then implement those techniques and functions in applications of their own.

Objectives

- Teach how to add code to an event such as a button press
- Teach the user about IF/Then/Else statements
- Teach the user how to store variables and then manipulate those variables to do
- Calculations
- Teach the user about inputs/outputs and validation
- Have other small features like multiple choice quizzes or fill in the blanks exercises

Chosen options -
Platform used - Desktop
Language - Visual Basic .NET
IDE - Visual Studio

Platform

Better preformance than the other options
Reliable and stable platform
The application does not need internet connectivity

Language and IDE

- Portability on Windows machines
- Good set of Base classes that are easy to implement
- Good developer knowledge of Visual Basic
- Easy to use GUI creation tools

British Government have made a new ICT course with more focus on Computing to help combat the skills shortage in the UK

12.6 million adults in the UK do not have any digital skills and this lack of skills is estimated to be costing the country £63 billion a year in lost potential GDP

35% of ICT teachers do not have an applicable IT qualification

Tools already used

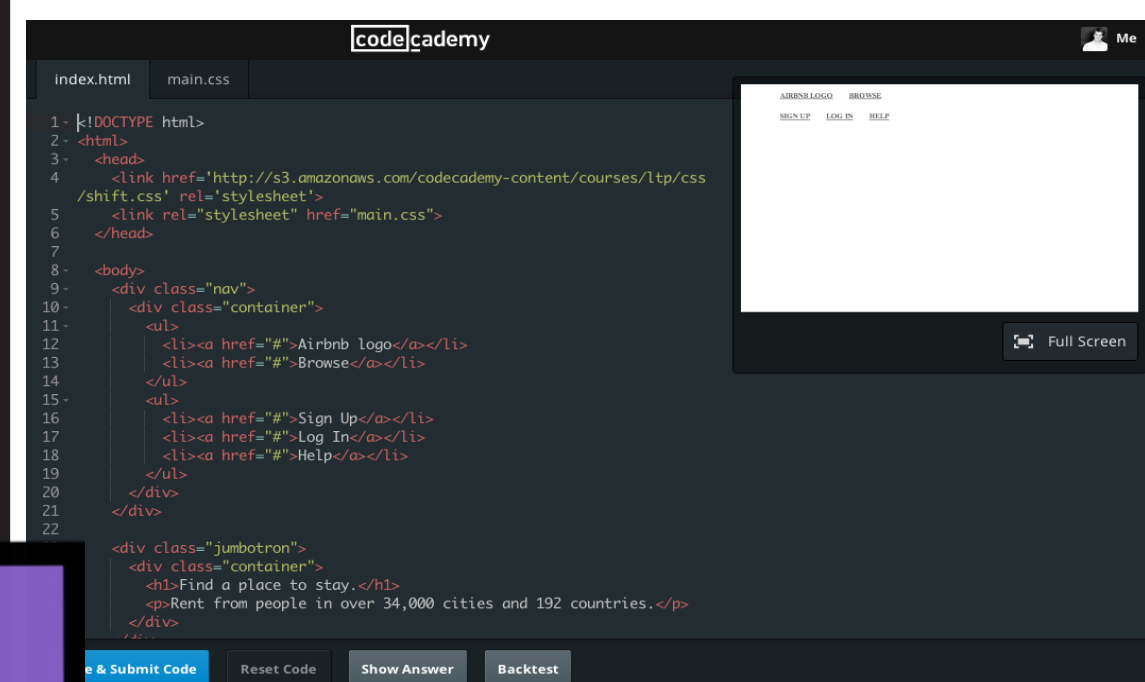
CodeAcademy
Scratch
Sololearn

Potential Platforms

Desktop
Mobile
Web

Potential Languages

Java
VB.NET



What is the application?

The application is an educational tool that uses questions, demonstration and multiple choice quizzes to teach people the basics of the language Visual Basic. All of the objectives of the application have been achieved and implemented correctly and effectively.

Testing done

All of the functions in the application were tested to see if they would give the appropriate feedback that the user would be looking for. The validation on the question allows for multiple right answers which reflects the nature of Visual Basic itself when you are coding with it.

```
Select Case txtAnswer.Text  
Case "lblResult.text =houseLength * houseWidth" : IsCorrectBottom = True  
Case "lblResult.text= houseLength * houseWidth" : IsCorrectBottom = True  
Case "lblResult.text=houseLength * houseWidth" : IsCorrectBottom = True  
Case "lblResult.text = houseLength * houseWidth" : IsCorrectBottom = True  
Case "lblResult.text = houseLength *houseWidth" : IsCorrectBottom = True  
Case "lblResult.text = houseLength * houseWidth" : IsCorrectBottom = True  
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Case "lblResult.text=houseLength *houseWidth" : IsCorrectBottom = True  
Case "lblResult.text=houseLength *houseWidth" : IsCorrectBottom = True  
End Select
```

