Programming Languages for Children

Why learn to program?

Learning to program has many benefits. The ability to talk to a computer provides a programmer to flourish with creativity.

Programming is an enjoyable task which also aids the development of other skills such as:

* Creativity
* Reasoning
* Logic
* Mathematics
* Reading
* Problem solving
* Appreciate the mechanics regarding how a computers operates.

At times programming can become frustrating and challenging however this is all part of the learning process (2013, Jason briggs).

Python

Python is one of the only programming languages to be named after a TV program, the British comedy series Monty Python.

The syntax of python is very close to the English language, therefore it is easy for beginners to understand and learn the language quickly.

Python is object orientated which promotes programmers to write clean, efficient and reusable code.

There are only a few negatives to using python such as indentation can become an issue and be the cause of most bugs when beginning to learn however once the user understands how indentation is used it is not such an issue.

Another issue with python is that it is an open source language which is also a good trait as there can be many collaborators although this means there is no official funding or “backers” so to speak. Unlike java which is funded by oracle and C# Microsoft’s own language.

<http://www.techrepublic.com/article/python-in-the-enterprise-pros-and-cons/>

C / C++

Developed by AT & T Dennis Ritchie in the early 1970’s (<http://cm.bell-labs.com/who/dmr/chist.html> ,1993)

Being one of the most popular programming languages around C is one of the most common languages used in industry. (<http://www.langpop.com/> , 2013)

Downsides

* Memory management issues
* Harder syntax to get to grips with
* More keywords to learn
* Support not as good in comparison to python
* Strongly typed (which is both a good and bad thing)
* Genrally a heavier language when compared with python etc ..

Software

In order to develop the system in question there will be a few tools that will be needed.

Platforms

Windows it’s what the children are used to .. but I dislike it because?? Microsoft are corporate and all about money?

Ubuntu

Free, open source, brilliant community, great development platform, good security, virtually no viruses.

Software IDE’s

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Visual Studio 2013 – will be used for the main development of code. The reasoning for this is visual studio provides enhanced intelligent syntax highlighting, auto complete, powerful debugging tools ,C# compatibility , graphical user interface design tools and document management systems.

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Eclipse – Eclipse is again another powerful IDE that provides similar features to visual studio however it is best suited for java and android based applications. Furthermore eclipse currently does not provide support for C# or Graphical user interface design for Windows based applications.

Mono Develop – Is a highly functional C# IDE which features cross platform support in addition to syntax highlighting, multiple languages, and many other tools. This tool would be ideal for the development of this project however the only issue with mono is that the Graphical user interface designer does not support windows based interfaces.

<http://monodevelop.com/>

Gedit – Gedit is a simple text based editor that uses syntax highlighting and provides a simple and clean interface to program with. However in comparison to visual studio and mono it simply cannot compete due to the lack of debugging tools and document management. Although gedit can be useful for small tweaks whilst developing.

C#

Provides a rich networking library which is ideal for the scope of the project.

The uses of the system are accustom to using windows, as it is a common operating system used in education. C# provides graphical user interfaces are aesthetically similar to the operating system.

C# has great support for networking and provides an entire API for developing networked based applications.

As C# is highly objected orientated which allows a high level of abstraction, modularization, reusability and efficient code.

C# also manages its own memory and therefore provides a less error prone application.

Conclusion

Based upon this research I can conclude that the main development tool will be Visual studio as its form designer will enable me to create friendly and professional graphical user interfaces with ease not to mention providing customizable colour schemes and layouts.

Additionally another feature which will aid the development of the project is a tool which allows the code and project to be published directly onto the server.

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Furthermore as the operating system of choice for the server is Linux I will also be using mono develop to enable me to develop the server side C# code. This will also be of use when porting client side code to Linux.

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