School of Computing

Year 4 Project Proposal Form

SECTION A

Project Title Hopeful – A First Programming Language

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Project Supervisor Name David Sinclair

SECTION B

General Area Covered by the Project
Language Development, Educational

Outline of the Proposed Project
My project, Hopeful - A First Programming Language, will involve the development of a programming language. This language will be aimed at beginning programmers in a university setting. It will have a simple and clean syntax that will allow students to focus on the fundamentals of programming, instead of a complicated syntax.

The idea came from the switch in programming languages taught to Computer Applications in my first year. For the first time, we learned Python instead of Java. Python, looking somewhat similar to pseudocode, seems like a good choice for beginners. As opposed to Java, which can look very complicated to beginners at first. However, Python made it difficult for us to learn new languages like Java, because of its simplicity and dynamic variable typing. It meant that we had to learn more about Java than just its basic syntax. My goal is to make a programming language that will both the simple syntax of Python and more programming features that will beginners to transfer easily to another language after starting with this one.

Programming Language(s)
Java

Programming Tools / Tech Stack
JavaCC, LLVM

Learning Challenges
Creating a Programming Language, Compiler Construction

Hardware/Software Platform
Windows

Special Hardware / Software Requirements
N/A