School of Computing  
CA326 Year 3 Project Proposal Form

**SECTION A**

Project Title \_\_\_\_\_\_\_\_micro:bit learner\_\_\_\_\_\_\_\_

Student 1 Name \_\_\_\_\_\_James Farrelly\_\_\_\_\_\_\_\_\_\_ ID Number \_17396736\_

Student 2 Name \_\_\_\_\_\_Emily Whyte\_\_\_\_\_\_\_\_\_\_\_\_ ID Number \_17405094\_

Staff Member Consulted \_\_\_\_\_\_\_Monica Ward\_\_\_\_\_\_\_\_\_\_

**Project Description** (1-2 pages):

***micro:bit learner*** is a mobile application to be used by primary school students to boost their programming skills. The micro:bit is a small programmable computer which is used to promote coding to children by making it more hands-on and fun.

micro:bit learner will have activities to develop and strengthen the abilities of students that are using micro:bits in school. The activities are for students to complete while they are learning JavaScript or Python in school (or at home if they have their own micro:bit). The activities will be various interactive quizzes that are based on either JavaScript or Python. This will include picking the odd one out, filling in the blanks, matching code with output/results and finding errors in code.

We believe debugging is a vital skill to teach future developers as early as possible. micro:bit learner will focus on this by introducing students to the various error codes that can be encountered when they write their own command-line programs. To build their understanding of these error codes, they will be told the plain English meaning of them and be able to test themselves on this knowledge in a matching game.

The interface of micro:bit learner will be fun and friendly to young students. The app will be simple to use, particularly for those who are familiar with apps such as Duolingo.

When students get an answer wrong, they will be informed of this and receive an explanation of the correct answer. When a quiz has ended, students will have the chance to repeat the questions they answered incorrectly the first time. When a student does an activity, they will receive a score at the end which will indicate which topics they need to improve on based on the questions they answered incorrectly.

**Division of work**

James:

* Create Python questions for quizzes and activities.
* Develop mix & match, fill in the blank and odd one out activity templates and mechanics.
* Develop timed activities.

Emily:

* Create JavaScript questions for quizzes and activities.
* Develop matching code with output/results and error translation activity templates and mechanics.
* Develop point-tracking for activities.

Together:

* Develop interface for use across the whole app.
* Develop the standard application to host all activities.

**Programming language(s)**

* Kotlin
* Python
* JavaScript

**Programming tool(s)**

* Android Studio

**Learning Challenges**

* Mobile app development
* Android Studio
* Kotlin
* JavaScript

**Hardware / software platform**

* Android

**Special hardware / software requirements**

None