**Grade 11 Computer Science ISP**

Overall expectations being assessed in this independent study project:

• A1. demonstrate the ability to use different data types, including one-dimensional arrays, in computer programs;

• A2. demonstrate the ability to use control structures and simple algorithms in computer programs;

• A3. demonstrate the ability to use subprograms within computer programs;

• A4. use proper code maintenance techniques when creating computer programs.

• B1. use a variety of problem-solving strategies to solve different types of problems independently…;

• B2. design software solutions to meet a variety of challenges;

• B4. apply a software development life-cycle model to a software development project;

In all phases of this ISP, you will be guided by an exemplar produced by Mr. Gordon.

The emphasis in this ISP is on understanding and applying the process of software development. The greatest success has historically come to students who plan their deliverables according to a manageable schedule and stick to their plan.

**Scope**

Aim to create a modest application that solves a problem you care about. If you solve the problem well, it is highly likely that others will find your application useful as well. Challenge yourself with something new, but avoid overreaching.

**Due dates**

The proposal is due on Tuesday, February 28, 2017, at the start of class.

The first checkpoint (prototype) is due on Wednesday, March 8, 2017.

The second checkpoint (second prototype) is due on Tuesday, April 4, 2017.

The final submission (completed product) is due on Monday, April 10, 2017.

Note that you will be granted significant opportunities to work in class, but that there is, like any Grade 11 university preparation course, an expectation that work be completed outside of class time as well.

**Proposal**

Modify this document and add your responses to the following prompts below.

**What problem will your application solve?**

*Write a paragraph to describe the utility of your application. This applies equally for games. When would someone use your application? Why would they use your application?*

My application would solve the problem of boredom on a subway. It is a game called pipes. The goal of the game is to connect all the dots without overlapping them. The advantage to this is that it gives you practice while the user is able to pass time. The game rules will be simple – you connect the dots on a grid and proceed to the next level.

**What is your inspiration for this project?**

*Have you seen another application that you wish to improve on? Has someone asked you to create this?*

My inspiration for this project is the extreme boredom I experience on the subway. As well as noticing how inactive my brain is if I’m just listening to music or playing a useless game. This game would allow the user to work out their brain while evading boredom.

**What is your prior experience in this area?**

*Have you written an application like this before? Have you made use of any required APIs (for example, SpriteKit) before?*

I have moderate experience in creating games. However, I have little experience with *SpriteKit.*

**What are skills do you hope to acquire by completing this project?**

*For example, you might be writing a networked application for the first time. Or, you may be writing an application that requires a particularly well designed user interface. Describe what you expect to learn by writing this application.*

I hope to acquire the skill to use Sprite Kit well as well as getting used to the way swift deals with visuals in applications. I hope to learn how to make good, clean UI’s as well as nice visuals.

**Rate the personal difficulty level of this project.**

This will be a moderate difficulty for me, because it is slightly ambitious, but not out of my league.

**Identify what you think your biggest challenge for successfully completing this ISP will be.**

I think the biggest challenge will be the graphics because I don’t have a lot of experience with swift or sprite kit – I started both this year.

**Make storyboards to indicate the user interface and/or functionality of your application.**

*In the section below, sketch out a plan for your application. This is where you will spend the majority of your time in completing the ISP proposal. Think through what you hope to create and as needed, adjust your responses to the questions above.*



