**Building IT Systems**

**Tools and Technologies**

**Unity** (v2021.3.7f1)

To create our Chess game, we have made the decision to use the game engine Unity (latest version 2021.3.7f1). Unity is a free (for personal or student use), cross-platform engine and has development software available for Windows, MacOS, and Linux. We chose to develop using Unity due to it being relatively beginner-friendly in comparison to other engines, and contains a comprehensive feature-set available for use in developing 2D games. Unity uses C# as its main scripting language, which no one in our team currently has experience with, so we will be required to learn this for the project. Joshua has experience using Unity to create 2 different mobile app projects. The first project was a weather application that pulled data from an API, and the second was an AR birthday card app, which used the camera to display an animation overlaid onto a physical card. Both these apps required creating 2D assets, importing them into Unity and creating a navigable user interface which will be skills transferable to this project. The other team members do not currently have experience working with Unity.

**Figma**

Figma is a browser-based design software for creating user interface prototypes. We will use this to make mock-ups of our interface designs, beginning with low-fidelity wireframes and refining these until we get to our final polished outcome ready for exporting to Unity. As Figma is web-based, there are no software version numbers, which means everyone will automatically be using the same version. Each team member has some experience using Figma to create mobile interface prototypes for User-Centred Design.

**Piskel**

Given our art-style is going to be a retro, 8-bit game we will need to create pixelated game pieces. Piskel is a browser-based pixel art creator that can be used to create the sprite assets for our game, such as the pieces and chess board. It could also be used to create some of the interface elements to create a consistent look. Similarly to Figma, being web based there are no version numbers for this tool.

**Adobe Photoshop (23.3.2)**

If any changes to the sprites need to be made that can’t be done due to limitations of Piskel, Adobe Photoshop can be used to make small adjustments. After creating spites in Piskel, Photoshop can also be used to composite them into a single image or scene, for example to create a background for the chess board.