Cross Platform Development – Project Research Workbook

This workbook will help you focus your research for your project.  
Once you have answered these questions, use this information in your Technical Design Document.

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| Briefly describe the cross-platform application, game or simulation you are researching.  (This is your initial idea to focus your research. The application described in your design documents or your final build may end up being different from this description) |
| **Find yourself in a world fueled by magic and the will to explore. Journey through various levels solving challenging puzzles, with increasing difficulty, by guiding wisps to the light.** |

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| List the software you will use to create your project.  Include any third-party plug-ins, APIs or libraries, if known. |
| **Unity**  **Visual Studio**  **GitHub**  **Photoshop**  **ProGrids** |
| With reference to the above list, what legislative frameworks or organisational standards govern the use of this software (including any third-party plug-ins, APIs or libraries).  For example, include any End User Licence Agreements (EULAs), terms of service, copyright notices, licencing information, developer guidelines, coding standards, or similar.  (Information in the AIE Student Handbook may also be relevant in relation to the use of software on campus machines.)  Include URL links where relevant. |
| **Unity:**   * **Terms of service:** [**https://unity3d.com/legal/terms-of-service**](https://unity3d.com/legal/terms-of-service) * **Copyright Policy:** [**https://unity3d.com/legal/copyright-policy**](https://unity3d.com/legal/copyright-policy)   **Visual Studio:**   * **EULA:** [**https://visualstudio.microsoft.com/license-terms/**](https://visualstudio.microsoft.com/license-terms/)   **GitHub:**   * **Terms of service:** [**https://docs.github.com/en/github/site-policy/github-terms-of-service**](https://docs.github.com/en/github/site-policy/github-terms-of-service)   **Photoshop:**   * **Terms of service:** [**https://www.adobe.com/au/legal/terms.html**](https://www.adobe.com/au/legal/terms.html) * **EULA:** [**https://www.adobe.com/products/eula/tools/captivate.html**](https://www.adobe.com/products/eula/tools/captivate.html)   **ProGrids:**   * **License:** [**https://unity3d.com/legal/licenses/Unity\_Companion\_License**](https://unity3d.com/legal/licenses/Unity_Companion_License) |

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| List the cross-platform installers and installation methods you will use, or the specific binary formats that are required to deploy the game.  This list should include all platforms you plan to deploy your game or application to.  (Your game or application must be deployed to at least two different web browsers, and at least two different digital devices – one of which may be PC) |
| **Manual: Via the Unity Engine Build Settings.**   * **Open the project in untiy** * **Select File->BuildSettings** * **Switch to the desired build platform (windows, android, or webgl)** * **Select Build** * **You will be prompted to select an output directory** * **Once the build has finished open your chosed folder to find your build**   **Automated: build\_all.bat will run build and pc and webgl version of the project, Doing this will not build for android**   * **Double click on build\_all.bat** * **The process will take some time, leave the console window open** * **The following files will be produced:** * **PC Build: builds/pc/YourGame.exe** * **WebGL Build: builds/web/index.html**   **PC: Executable (.EXE)**  **Android: Android Package (.APK)**  **Web:** **Hypertext Markup Language (.HTML)** |

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| What IDE will you use?  Identify your reasons behind this choice (ignoring the pre-configured environment on the campus computers). |
| **Visual Studio: Able to utilize a plug-in for unity development and debug support, I’ve also got the most experience with this IDE then any others.** |

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| Identify the cross-platform libraries, plug-ins, or APIs you will use.  Mention any restrictions or limitations that exist with these libraries on each target platform.  For example, some parts of the .NET class libraries implicitly depend on threads, but some platforms (WebGL) do not support threads. |
| **UnityEngine Post Processing**   * **Post Processing isd limited to the Universal Render-Pipeline as Webgl cannot support the HDRP**   **UnityEngine Audio**   * **Webgl doesn’t support threading, and limits how much audio can be playing at once**   **System.Threading**   * **cannot be used in Webgl** |

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| What issues exist, or do you expect might exist when developing for the target platforms you have identified? |
| * **Click to move input, mouse position may not be the same as the touch position on mobile.** * **Limiting audio to the most basics for web support** * **Performance management for multiple devices** |

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| List any areas in your game where pre-written scripting packages could aid in development.  For at least one of these items, identify a package from the Unity Asset Store (or another source) that may be suitable. |
| **Nav Mesh:** [**https://docs.unity3d.com/Manual/nav-BuildingNavMesh.html**](https://docs.unity3d.com/Manual/nav-BuildingNavMesh.html)  **A\* pathfinding:** [**https://arongranberg.com/astar/download**](https://arongranberg.com/astar/download)  **Brackeys Audio Manager tutorial:** [**https://www.youtube.com/watch?v=6OT43pvUyfY**](https://www.youtube.com/watch?v=6OT43pvUyfY)  **Unity URP:** [**https://docs.unity3d.com/Packages/com.unity.render-pipelines.universal@13.0/manual/index.html**](https://docs.unity3d.com/Packages/com.unity.render-pipelines.universal@13.0/manual/index.html)  **URP Vertical Fog:** [**https://assetstore.unity.com/packages/tools/urp-vertical-fog-175935#reviews**](https://assetstore.unity.com/packages/tools/urp-vertical-fog-175935#reviews)  **Ultimate Animated Character Pack:** [**https://quaternius.com/packs/ultimatedanimatedcharacter.html**](https://quaternius.com/packs/ultimatedanimatedcharacter.html) |

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| List the pre-written scripting packages or plug-ins you will use during development.  (Include a URL for each package or plugin) |
| **Nav Mesh:** [**https://docs.unity3d.com/Manual/nav-BuildingNavMesh.html**](https://docs.unity3d.com/Manual/nav-BuildingNavMesh.html)  **Brackeys Audio Manager tutorial:** [**https://www.youtube.com/watch?v=6OT43pvUyfY**](https://www.youtube.com/watch?v=6OT43pvUyfY)  **Unity URP:** [**https://docs.unity3d.com/Packages/com.unity.render-pipelines.universal@13.0/manual/index.html**](https://docs.unity3d.com/Packages/com.unity.render-pipelines.universal@13.0/manual/index.html)  **URP Vertical Fog:** [**https://assetstore.unity.com/packages/tools/urp-vertical-fog-175935#reviews**](https://assetstore.unity.com/packages/tools/urp-vertical-fog-175935#reviews)  **Ultimate Animated Character Pack:** [**https://quaternius.com/packs/ultimatedanimatedcharacter.html**](https://quaternius.com/packs/ultimatedanimatedcharacter.html) |

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| List the game engine and any additional development tools you will use. |
| **Unity**  **Visual Studio**  **Photoshop**  **GitHub** |