Project Proposal

# Section 1 Type of project (e.g. database, 2D platform game, investigation, etc.)

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| A board game of Ultimate Tic Tac Toe with AI, and the ability to play in multiplayer and co-op. |

# Section 2 Description (including who is the end-user)

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| * The game will include an AI with different levels of difficulty * A 9 by 9 grid will be shown, each 3 by 3 grid within containing a game of normal tic tac toe. * Once a symbol has been placed on a normal grid, the next user must place their symbol on the normal grid in the corresponding area of the larger grid. * The player who has 3 symbols in a row in any direction on the larger grid wins. * I will make an SQLite database to store the game scores as well as the current state of the game, so the game can be saved. * I will make a tutorial and help button in all the screens so the end user is completely sure on how to play the game. * I will introduce a preview feature and a ‘confirmation click’ for all moves to ensure there are no accidental moves or clicks. * I will use networking to make sure people can play with each other online. * I will make a setting so people can play with each other on the same device in place of the AI. * I will use some kind of algorithm or decision tree to implement the AI. * The end user will be 15-25 year olds, since generally this is the age group that is capable of playing more strategic board games, and are the age group that play games as a hobby. |

# Section 3 Specific programming skills this will demonstrate

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| * AI * Use of networking to allow players to play against other players online * Use of SQL relational databases and complex queries to store and save game data and high scores * An easy to use UI |

# Section 4 Areas of complexity – what makes this A level standard

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| * A complex AI must be created, with different difficulty levels. * The use of networking to link together different devices in order to play the game with others online. * Large SQL tables and complex queries used to store and access game data in an efficient way. * An easy to use UI must be implemented. |

# Section 5 Techniques/skills I will need to research

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| * Research AI and how to create AI that will function very well at different difficulty levels. * Research the end user’s preferences in how the game should be implemented and different to other variations of it. * Research how to create large SQL tables and write multi-table queries * Research how to implement networking and allow different users to play together online. * Research how to develop an easy to use UI. * How to use JSON and other networking libraries to send information over a network. |