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| Project Design Document | |  | | --- | | *17/10/2023*  Erin McCauley | |

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| Project Concept | | | |
| 1 **Player Control** |  | You control a   |  | | --- | | *Superhero* | | in this   |  |  | | --- | --- | | *Third person view* | game | |
|  | where   |  | | --- | | *Keypress and clicking on the screen* | | makes the player   |  | | --- | | *Move side to side and jump* | |

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| 2 **Basic**  **Gameplay** |  | During the game,   |  |  | | --- | --- | | *A question pop-up and obstacles with answers* | appear | | from   |  | | --- | | *In front of the player* | |
|  | and the goal of the game is to   |  | | --- | | *Jump over the obstacle with the correct answer to each question* | | |

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| 3 **Sound**  **& Effects** |  | There will be sound effects   |  | | --- | | *When the player jumps over the correct / wrong answers* | | and particle effects   |  | | --- | | *Appear awarding points if the player jumps over the correct answer to the question* | |
|  | [*optional*] There will also be   |  | | --- | | *Appropriate sound effects when the player gains a power-up. There will be individual sound effects used for gaining bonus points and for gaining a life.* | | |

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| 4 **Gameplay**  **Mechanics** |  | As the game progresses,   |  | | --- | | *Questions become more difficult and time between each question reduces* | | making it   |  | | --- | | *Harder for the player to progress* | |
|  | [*optional*] There will also be   |  | | --- | |  | | |

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| 5 **User**  **Interface** |  | The   |  | | --- | | *Player's score* | | will   |  | | --- | | *increase* | | whenever   |  | | --- | | *The player jumps over the correct block* | |
|  | At the start of the game, the title   |  |  | | --- | --- | | *Thar Barr* | will appear | | | and the game will end when   |  | | --- | | *The player runs out of lives/all questions completed* | |

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| 6 **Other Features** |  | |  | | --- | | *The player will begin with 3 lives which will be displayed on the screen beside a heart graphic. When a player jumps over a block with an incorrect answer to a question, they will lose a life. Once a player loses all of their lives, the game will end.*  *There will also be a power-up where the player can gain lives. This will be in the form of a heart graphic near the obstacles. The player will have to run through the heart graphic in order to gain a life. As the game progresses, the difficulty in gaining this type of power-up will increase for the player, as they will be placed in tricky positions and the speed between obstacles appearing will be increased.*  *The player will begin with 0 points which will be displayed on the screen. When a player jumps over a block with a correct answer to a question, they will gain points. A sound effect will be used when points are gained.*  *A power-up will be available for the player in the form of bonus points. These bonus points will be displayed inside a star graphic. The player will have to run through the star graphic in order to gain the bonus points. As the game progresses, the difficulty in gaining bonus points will increase for the player, as they will be positioned in various positions and the speed between obstacles appearing will be increased.* | |

# MVP Details

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| **Essential Features** | |  | | --- | | * *A question will appear on the screen* * *For each question, 3 blocks with potential answers on them will be displayed to the player* * *The player will be able to move the superhero from left to right and up and down to select the correct block to jump over/ move to position to gain power-ups* * *The player’s score will increase after jumping over the obstacle with the correct answer to the question/ gaining a bonus point power-up* * *The player’s lives will decrease after jumping over the obstacle with the incorrect answer to the question* | |  |
| **B- Level Features** | |  | | --- | | * *When the player answers the first question by moving the superhero the next question and block will appear* * *The player will be able to gain lives by positioning the superhero to run through a heart graphic near the obstacles* * *The player will be able to gain bonus points by positioning the superhero to run through a star graphic near the obstacles* | |  |
| **A- Level Features** | |  | | --- | | * *The player will be able to select a level from the main menu which will determine the initial difficulty of the game* * *The player will be able to select a topic from the main menu (e.g. timetables, shapes etc.) which will determine the question topics during the game* * *The game will display trick power-ups, e.g. different coloured stars/hearts where the player could collect negative points and lose a life instead of gaining points or a life* * *The player will be able to choose a superhero character to use during the game* * *The player will be able to choose a language to use for the game* | |  |

# Project Timeline

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| Milestone | Description | Due |
| **Alpha** | |  | | --- | | * *Title page including instructions will appear on screen* * *Superhero, initial question and answer options will appear on screen* * *The player will be able to move the superhero towards an answer using keypress(arrow keys)* | | |  | | --- | | *31/10* | |
| **Beta** | |  | | --- | | * *Game questions will continue to appear on screen for the player to answer* * *Answer options will appear for the player* * *Difficulty and speed set for questions and answers* * *Power-ups ( bonus points and lives) added* | | |  | | --- | | *28/11* | |
| **Submission** | |  | | --- | | * *All functions in place* | | |  | | --- | | *12/12* | |
| **Backlog** | |  | | --- | | * *Language options added* * *Negative points and losing lives feature added ( different coloured stars and hearts to trick the player)* | | |  | | --- | | *mm/dd* | |

# Project Sketch

