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| Project Design Document | |  | | --- | | *June 7, 2022*  BH | |

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| Project Concept: Mine Your Business | | | |
| 1 **Player Control** |  | You control a   |  | | --- | | *Translucent ground vehicle* | | in this   |  |  | | --- | --- | | *3rd person 3D* | game | |
|  | where   |  | | --- | | *Arrows and spacebar* | | makes the player   |  | | --- | | *Drive/fly and E-jump* | |

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| 2 **Basic**  **Gameplay** |  | During the game,   |  |  | | --- | --- | | *landmines* | appear | | from   |  | | --- | | *The top of the screen* | |
|  | and the goal of the game is to   |  | | --- | | *Combo as many landmines as possible without hitting the ground.* | | |

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| 3 **Sound**  **& Effects** |  | There will be sound effects   |  | | --- | | *Mine explosion, vehicle hitting ground* | | and particle effects   |  | | --- | | *Mine explosion, vehicle exhaust / jump explosion* | |
|  | [*optional*] There will also be   |  | | --- | | *description of any other expected special effects or animation in the project.* | | |

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| 4 **Gameplay**  **Mechanics** |  | As the game progresses,   |  | | --- | | *E-jumps get used up* | | making it   |  | | --- | | *Inevitable that a combo ends.* | |
|  | [*optional*] There will also be   |  | | --- | | *E-jumps are limited. Might be restored by hitting increasingly large combo or score thresholds.* | | |

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| 5 **User**  **Interface** |  | The   |  | | --- | | *score* | | will   |  | | --- | | *increase* | | whenever   |  | | --- | | *A mine is hit* | |
|  | At the start of the game, the title   |  |  | | --- | --- | | *Mine Your Business* | will appear | | | and the game will end when   |  | | --- | | *The vehicle hits the ground and there are also 0 E-jumps remaining.* | |

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| 6 **Other Features** |  | |  | | --- | | *E-jump used automatically if available when vehicle hits ground (ie, they prevent a game over), but can also be triggered manually by pressing spacebar. Landmines explode with random force between a predefined range, causing "randomized" translations and rotations to vehicle through 3D space, but player can control vehicle in the air.* | |

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# Project Timeline

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| Milestone Description | | Due |
| **#1** | |  | | --- | | * *Find / make vehicle, mine, ground, and UI assets, as well as sounds/music that might fit. Change visual design if unable to find something appropriate.* | | |  | | --- | | *June 12* | |
| **#2** | |  | | --- | | * *Unpolished vehicle ground and air control + collision with hardcoded sample mines.* | | |  | | --- | | *June 15* | |
| **#3** | |  | | --- | | * *Settle on values for speed, acceleration, E-jump thrust, and mine explosion thrust. Implement random generation of mines.* | | |  | | --- | | *June 18* | |
| **#4** | |  | | --- | | * *Add UI, sound, etc. and flesh out gameplay loop.* | | |  | | --- | | *June 25* | |
| **#5** | |  | | --- | | * *Gap analysis between design document, in-progress feature list, current product, and desired MVP; implement/drop whatever is missing.* | | |  | | --- | | *June 30* | |
| **Backlog** | |  | | --- | | * Different types of mines that have different explosion thresholds, score values, or other properties. * Altimeter and a vertical vehicle shadow might be nice to help with aiming. Shadow could be done with a translucent quad primitive. | | |  | | --- | | *mm/dd* | |

# Project Sketch

