

Final Project Proposal Example

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Design Topic

- ✓ Design and implement 1v1 Tank War game.

Input/Output Table

Input	Function	Output	Function
Rst	Reset	7-segment display	time remaining
Keybaord up	1P control up	audio output	speaker logic
Keybaord down	1P control down	LCD	screen output
Keybaord left	1P control left		
Keybaord right	1P control right		
Keybaord enter	1P control shoot		
Keybaord W	2P control up		
Keybaord A	2P control down		
Keybaord S	2P control left		
Keybaord D	2P control right		
Keybaord space	2P control shoot		

Functions of the proposed game

1 The game has the basic functions: (I/O description)

- 1.1 A counter that counts for every game (3 minutes)
- 1.2 Keyboard arrow keys and WASD represent object(tank) moving in the game.
- 1.3 Keyboard can also be used for shooting.
- 1.4 We will use VGA signal to output the game on a LCD display
- 1.5 Reset dip signal on the FPGA board.
- 1.6 Sound outputs: explosive sound, background music, and tank moving sound effects

2 The detailed function of the game.

- 2.1 There are three backgrounds, game start, gaming, and winning background.
- 2.2 First, the game will start at starting background
- 2.3 There are three minutes each round, the one who takes down the opponent the most times in three minute wins. (counter)
- 2.4 There are obstacles in the middle of the map, players can hide behind the blocks, the bullet can't shoot through the blocks.
- 2.5 When the bullet hit the wall, the bullet will disappear.
- 2.6 Each player will have a fortress, the fortress will have five lives, another winning condition is to take down your opponent's fortress. So, you can either shoot more in three minutes or take down the fortress.
- 2.7 Whenever a player dies, the timer will pause, and every player will start next to your own fortress again, then the timer will continue.
- 2.8 After three minutes, the game will determine who wins, or draw.