Jake White

# Functional Requirements

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| ID | Category | Requirement Title | Requirement Type | Requirement Description |
| 1.0 | Ammunition | Shoot Bullet | Functional | The tank must be able to fire ammunition of a bullet in the direction the tank is facing |
| 1.1 | Ammunition | Bullet Speed | Functional | Depending on the tank chosen the bullet speed must be increased or decreased based on the tank type |
| 2.0 | Terrain | Modify Style Background | Functional | The background or terrain must be changed to the selected background such as a grass field  The system must have the ability to change the background that the battle is taking place |
| 3.0 | Effects | Play Sound | Functional | The system must be able to play a sound when the user chooses to fire a bullet by pressing the fire key |
| 4.0 | Enemies | Enemy Tanks | Functional | Enemy tanks are spawned around the border of the map and are shooting in the direction that they are facing. |
| 5.0 | Timer/Win/Loss conditions | Timer/Win/Loss conditions | Functional | Add a timer that counts down, the goal of the game is to shoot and destroy the enemy tanks before time runs out. If the time runs out before all tanks are destroyed a message will pop up saying you lost. If you destroy the tanks before the timer runs out it will display you win. If a bullet hits your tank the loss message will pop up. |

# Testing Plan

1. Shooting

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| Item | Test Scenario | Expected Results |
| 1.0 – Space Bar | After launching the program – press the space bar to execute the shooting command for the tank | A bullet should be fired from the tank in the direction that the tank is facing  If another tank is hit, the opposing tank should be destroyed  Upon firing a sound should be played when the space bar is pressed  Depending on the tank that is used the bullet should go faster or slower based on the tank type |
| 1.1 – Ammunition Speed | Press the space bar to fire a bullet | Upon pressing the fire key the bullet speed should be faster or slower based on the tank type |
| 1.2 – Negative Test Key | Press any key on the keyboard except the space bar | Nothing should happen, and no bullet is fired  No sound should be played upon pressing any other key |

1. Style Background

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| Item | Test Scenario | Expected Results |
| 2.1 – Change Terrain | After launching the program – from the menu the user should be able to change the background terrain to a grass field environment | When selecting the terrain change the background should be displayed that was selected  The tank positions should not change and no sound should be played |
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1. Sound Effects

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| Item | Test Scenario | Expected Results |
| 3.1 – Play Sound | The fire button plays a sound | When the play sound key is pressed a sound should be played from the speakers  The sound should be played each time the space bar key is pressed by the user |
| 3.2 – Negative Test | Pressing any other key besides the space bar | When any other key is pressed by the user it should not play any sound |

1. Enemy Testing

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| Item | Test Scenario | Expected Results |
| 4.1 – Enemy tanks spawned and are shooting | Enemy tanks are spawned around border of map and shooting toward direction they are facing. | All tanks spawn correctly and are shooting. |

1. Timer Testing/Game win/loss conditions

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| Item | Test Scenario | Expected Results |
| 5.1 – Timer runs out or you get shot | If timer runs out without destroying all tanks a pop up says you lose and it exits the program. If you get hit by a bullet you lose. If you destroy all tanks before timer ends you win. | If shot the game ends. If timer runs out and enemies are still alive you lose. If you destroy all tanks before timer runs out you win. |