**Test Plan**

| # | Tasks | Player/Game Actions | Expected Outcomes |
| --- | --- | --- | --- |
| [1] | Textured geometry | Player, enemy, projectile, wall, and furniture entities | Sprites for these entities are properly rendered at the correct time and in the correct order. |
| [2] | Basic 2D transformations | Player movement | Translation of player entity to demonstrate player’s movement |
| Enemy movement | Enemies move towards player by translation based on angle of movement |
| Update Health/HP bar | Green part of the HP bar is scaled to correct size to represent the amount of HP the player has. |
| [3] | Key-frame/state interpolation | Player dash action | Smooth interpolation between initial and final position of player entity during dash movement |
| [4] | Keyboard/mouse control | Use up/down/left/right or WASD keys to move player | Pressing the up key moves the player up on the screen. Player stops moving when the up/’W’ key is released. Etc. |
| Press escape key | Pauses Game |
| Press ‘R’ key | Resets game to original state |
| Press ‘X’ key | Player does dash move to the right |
| [5] | Random/coded action | Enemy spawn | Throughout the running of the games various enemy types will spawn at random locations on the screen |
| [6] | Well-defined game-space boundaries | Game takes place on a level completely surrounded by walls providing the game-space boundaries | Player cannot move through the walls to escape the boundaries of the level. |
| [7] | Simple collision detection & resolution (e.g. between square sprites) | Player/enemy collide with solid object (wall or furniture) | Player/object cannot move through solid object (stops moving in direction of solid object) |
| Projectile (current sprite is a bubble) collide with solid object | The projectile will be destroyed |
| Enemy collides with player | Player’s hp decreases by the damage amount of the colliding enemy. Player experiences short period of invulnerability where player cannot take more damage (currently set to 1 second) |
| Projectile collides with player | The projectile will be destroyed and the player will lose hp by the projectile’s damage amount. |
|  | Creative Component | Damage + HP bar | Player takes damage based on the enemy/projectile it comes into contact with. If the player’s hp reaches zero, the screen fades to black and the game restarts. |
| Simple rendering effects | Fragment shader is used to change the colour of the player sprite to red when the player takes damage and becomes invulnerable. |
| Camera follow | The camera follows the player as they move around. |