**Test Plan**

| # | Tasks | Player/Game Actions | Expected Outcomes |
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| [1] | Game AI | Enemy pathfinding | Enemies use A\* algorithm to chase player when player is in their line of sight; otherwise stay still. |
| [2] | Animation | Loop through player states  - idle (no input)  - moving (using any movement keys)  - attacking (clicking in any direction)  - death (get HP bar down to 0) | Player has different animation loops for idling, attacking, and moving.  Player also has a still sprite in its death state. |
| HP bar increase and decrease | HP bar decreases when player is damaged |
| [4] | Assets | Objects are rendered as the player moves around the map | Map (listed as a constant in world\_system.hpp) can be corresponded to walls (0) and enemy spawn points (3, 4, 5).  Any point on the map out of bounds should be rendered with wall sprite.  Player and enemies also have corresponding sprites. |
| [5] | Mesh-based collision | Walk over sticky ground object. Toggle “P’ to see the bounding boxes. | Mesh-based object on the ground slows the player down when walking over it. Player should only be slowed down when the player’s bounding box collides with the ground object’s mesh (not bounding box). |
| [6] | Help | Press “T” for tutorial | A list of instructions is displayed on screen and can be turned off by pressing “T” again. |
| [7] | FPS counter | Toggle “F” key to turn FPS counter on/off | Text appears next to player showing current frames per second |
| [8] | Creative Component | Local illumination model - always on screen when game is unpaused | Entire screen space is lit using a Phong lighting model with the light source in the same position as the camera (center of the screen). |
| Light flickering effect plays every 2000ms | Lights flicker softly for ~400ms |
| [9] | Game Logic | 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 space key | Player does dash move in the direction of the player’s current movement. Cooldown works properly where the player cannot do another dash movement for a short time afterwards. |
| Left mouse click | Player attacks in the direction of the mouse pointer. If the enemy is in that direction and close enough to the player, the enemy will take damage. After losing all of its health, the enemy will be destroyed. |