**Test Plan**

*In your /doc folder, upload a test plan that outlines how to user-test your game, title the document: test-plan.docx. For example, what keys to press or what mouse actions are necessary. The TAs will use this short document to test and mark your game.*

**Startup and Main Menu Tests**

1: Logo Animation

* Precondition:
  + Game is launched after building and running ./amoebash
* Test Steps:

1. Start game
2. Observe initial animation

* Expected Result:
  + Logo/text slides in from the left and settles at the center
  + During animation, all buttons are inactive and clicks are ignored

2: Shop Button Functionality

* Precondition:
  + Main menu active and logo animation completed
* Test Steps:

1. Click button located at top left of screen
2. Verify that in shop menu (black background, “shop” text)
3. Click same button on top left to go back to main menu

* Expected Result:
  + First click of button should display shop screen
  + Second click should hide shop screen, display main menu again

3: Info Button Functionality

* Precondition:
  + Main menu active and logo animation completed
* Test Steps:

1. Click button located at bottom left of screen
2. Verify that in info menu (black background, “info” text)
3. Click same button on bottom left to go back to main menu

* Expected Result:
  + First click of button should display info screen
  + Second click should hide info screen, display main menu again

4: Start Button and Game Start Animation

* Precondition:
  + Main menu active and logo animation completed
* Test Steps:

1. Click start button located at center of screen underneath logo
2. Observe animation
3. Load into game screen

* Expected Result:
  + Animation should play showing nucleus moving from left to right into a nose
  + Note the variants of the animation, where the nose changes color / texture / added accessories / etc.
  + After animation, should transition to game mode

**In-Game Functionality**

1: Character Orientation and Dash Movement

* Precondition:
  + Gameplay has started after logo and intro cutscene
* Test Steps:

1. Move mouse around the game window
2. Verify that main character always rotates to point towards mouse cursor
3. Click in any direction on game canvas

* Expected Result:
  + After clicking, character should dash towards mouse direction, accelerating and then decelerating, and coming to a stop
  + Dash sound should play when clicked

2: Grid, Camera, Minimap Behavior

* Precondition:
  + Gameplay has started after logo and intro cutscene
* Test Steps:

1. Click around the screen to make nucleus move around on map
2. Observe the lazy camera follow, and also parallax movement of background
3. Move nucleus towards edges of map, and notice bounds of map

* Expected Result:
  + Static minimap of map should always display the current tile character is on with a blue square
  + When reaching the map edges, the bounds should be visible as a different texture, and character can't move past them (collides into them and stops)

3: Enemy Interaction

* Precondition:
  + Gameplay has started after logo and intro cutscene
* Test Steps:

1. Explore map and find enemies in map
2. Observe enemies movement pattern from a distance, and notice tracking once you get close to enemy
3. Dash into enemy sprite

* Expected Result:
  + When at a distance from enemy, will move in a left and right motion
  + When in proximity to enemy, enemy will move towards character
  + When dashing into an enemy, the enemy is killed and a corresponding sound effect is played

4. Wall Interaction

* Precondition
  + Gameplay has started after logo and intro cutscene
* Test Steps
  + Dash in one direction until you see a wall
  + Dash into the wall
* Expected Result
  + Player should not be able to enter the wall area
  + Player’s original speed is conserved in the direction not blocked by wall
    - Eg - If the wall is horizontal, the player won’t be able to move upwards into it, but depending on dash angle, the horizontal component of their speed is preserved

**Keyboard Controls**

1: Pause Functionality (Spacebar)

* Precondition:
  + Game mode active
* Test Steps:

1. Press spacebar while in game
2. Attempt in game action such as dashing

* Expected Result:
  + Game pauses, and “PAUSE” text is overlaid over current game state in center of screen
  + Everything is stationary including player, enemies, background, etc.
  + Only possible actions are unpausing with spacebar, or restarting game (see next test)

2: Restart Functionality (R key)

* Precondition:
  + In any game state
* Test Steps:

1. Press “R” key

* Expected Result:
  + Game restarts, you are taken back to the main menu
  + On restart, the logo animation wont play, as logo should already be placed in the center

3: Game Over Functionality (O key)

* Precondition:
  + Game mode active
* Test Steps:

1. Press “O” key
2. Try any character action, try and clicks / key presses (except R key)
3. Press left mouse click or “R” key to restart game

* Expected Result:
  + After pressing “O,” game over screen is displayed with a black background and message centered
  + No actions should be possible, as character should not be displayed at all
  + Only possible action is pressing left mouse click or “R” key after which game should return to main menu