Our Testing Plan:

Our testing plan covers various aspects of the game, ensuring that each feature functions correctly and meets the expected behavior. We've structured our test cases well, with clear descriptions, input values, expected outputs, and actual outputs for comparison. Each test case also includes pass/fail criteria and comments to provide additional context or insights.

In the Assembling, Grilling, and Prepping Functionality section, we thoroughly tested the basic gameplay, scoring mechanism, winning and losing conditions, user interface elements, gameplay flow, and difficulty levels. These tests ensure that each feature works as intended and provides a smooth and engaging experience for players.

In the Main Menu / Database Functionality section, we verified user creation, login functionality, leaderboard display, account persistence between sessions, and progress saving features. These tests ensure that players can create accounts, log in securely, view leaderboards, and continue their progress seamlessly across sessions.

Finally, in the Shop Functionality and Jukebox Functionality sections, we tested the purchase, equipping, and changing of items in the shop, as well as the functionality of the jukebox feature. These tests ensure that players can customize their experience by purchasing items and selecting vinyl for their enjoyment.

Overall, our testing plan demonstrates a comprehensive approach to ensuring the quality and functionality of our game across various features and components. We cover essential aspects such as gameplay mechanics, user interface, scoring systems, and persistence of user data, providing a robust foundation for delivering an engaging and enjoyable gaming experience.

Assembling Functionality:

| Test # | Description | Input Values | Expected Output | Actual Output | P/F Criteria | Comments |
|--|---|---|--|--|----------------------|----------|
| 1.1: Basic Gameplay Test | Verify basic gameplay functionalit y and movement of sprites. | 1. Left & right arrow keys for bun catcher movement 2. Preset, coded speed for falling ingredients | 1. Ingredients fall down properly 2. User can move the bottom bun catcher left and right 3. User can stack ingredients on the bun catcher 4. Ingredients stack on top of each other correctly | 1. Ingredients fall down properly 2. User can move the bottom bun catcher left and right 3. User can stack ingredients on the bun catcher 4. Ingredients stack on top of each other correctly [Observational] | Actual = Expected | Pass |
| 1.2: Scoring / Points Calculation Test Cases | Verify scoring mechanism based on ingredient / stack alignment. | Scenario 1: Ingredients are poorly aligned vertically Scenario 2: Ingredients are aligned well vertically | Scenario 1: 1. Poor message feedback ("Okay, Not good, Very Bad)" are output on screen 2. <50 points awarded for each ingredient that is not stacked well Scenario 2: 1. Good message feedback ("Good, Very Good, Excellent") are output on screen 2. >=50 points awarded for each ingredient that is stacked well | Scenario 1: 1. Poor message feedback ("Okay, Not good, Very Bad)" are output on screen 2. <50 points awarded for each ingredient that is not stacked well Scenario 2: 1. Good message feedback ("Good, Very Good, Excellent") are output on screen 2. >=50 points awarded for each ingredient that is stacked well | Actual = Expected | Pass |
| 1.3: Winning Condition | Verify the winning condition for the round. | User stacks 10 ingredients + top bun successfully without letting an ingredient fall | 1. Round ends. 2. Background switches to a plain background. 3. The amount of points gained during the duration of the completed round | 1. Round ends. 2. Background switches to a plain background. 3. The amount of points gained during the duration of the completed round | Actual = Expected | Pass |

| | | | is displayed on the screen. | is displayed on the screen. | | |
|--------------------------------|--|---|---|---|----------------------|------|
| 1.4: Losing Condition | Verify for the losing condition for the round. | User lets an ingredient fall before stacking all of the necessary ingredients. | 1. Round ends. 2. Background switches to a plain background. 3. No additional points are awarded. 4. The amount of points gained during the duration of the completed round is displayed on the screen. | 1. Round ends. 2. Background switches to a plain background. 3. No additional points are awarded. 4. The amount of points gained during the duration of the completed round is displayed on the screen. | Actual = Expected | Pass |
| 1.5: User Interface Test | Verify the correctness and visibility of UI elements. | Initial Game Page: 1. Font size: 30 2. Font color: black 3. Text alignment: top right 4. Kitchen counter background End Round Page: 1. Font size: 50 2. Font color: black 3. Text alignment: center 4. Kitchen counter background | Initial Game Page: 1. Message popups are displayed in the top right with 30 font size and black font color. 2. Background is a simple kitchen counter 3. Messages include "Very bad!, Not good. Okay, Good, Very Good, Great Job, Excellent" End Round Page: 1. "Points Gained: " is displayed in the center of the screen in 50 font size and black font color, along with the number of points gained 2. Background is a simple kitchen counter | Initial Game Page: 1. Message popups are displayed in the top right with 30 font size and black font color. 2. Background is a simple kitchen counter 3. Messages include "Very bad!, Not good. Okay, Good, Very Good, Great Job, Excellent" End Round Page: 1. "Points Gained: " is displayed in the center of the screen in 50 font size and black font color, along with the number of points gained 2. Background is a simple kitchen counter | Actual = Expected | Pass |

| 1.6 Gameplay Flow Test | Verify the overall flow of the round. | 1. Initial Game Page Scene (where the user stacks the ingredients) 2. End round scene | 1. Smooth transition between game stages (initial & end round) 2. No bugs or glitches in the gameplay flow | 1. Smooth transition between game stages (initial & end round) 2. No bugs or glitches in the gameplay flow | Actual = Expected | Pass |
|------------------------------|---|---|---|---|----------------------|------|
| 1.7 Difficulty Levels Test | Verify the functionalit y and differences between the three levels. | Easy Level: 1. Slow falling speed 2. Ingredients fall close together 3. Only ingredient is the patty Medium Level: 1. Medium falling speed 2. Ingredients fall slightly further apart Hard Level: 1. Fast falling speed 2. Ingredients fall very part apart 3. Patty, cheese, lettuce, and tomatoes are ingredients | Easy level: 1. Ingredients fall slowly and close together, making it easier for the user to catch and stack them. 2. Only the patty is included as an ingredient. Medium level: 1. Ingredients fall at a moderate speed and slightly further apart, providing a moderate challenge for the user. 2. Patty and cheese are included as ingredients. Hard level: 1. Ingredients fall rapidly and very far apart, posing a significant challenge for the user. 2. Patty, cheese, lettuce, and tomatoes are included as ingredients. | Easy level: 1. Ingredients fall slowly and close together, making it easier for the user to catch and stack them. 2. Only the patty is included as an ingredient. Medium level: 1. Ingredients fall at a moderate speed and slightly further apart, providing a moderate challenge for the user. 2. Patty and cheese are included as ingredients. Hard level: 1. Ingredients fall rapidly and very far apart, posing a significant challenge for the user. 2. Patty, cheese, lettuce, and tomatoes are included as ingredients. | Actual = Expected | Pass |

Grilling Functionality:

| Test # | Description | Input Values | Expected Output | Actual Output | P/F Criteria | Comments |
|--|---|---|---|---|----------------------|----------|
| 2.1: Basic Gameplay Test | Verify basic gameplay functionality and movement of sprites. | 1. Click and drag for movement of burger patties 2. Spacebar to flip burger | 1. Burgers cook/switch between stages at a constant rate, in sync with the onscreen timer 2. Pressing space correctly flips the burger to its inactive side, and switches the current timer to that of the new active side 3. Placing burger on a grill spot correctly starts cooking it 4. Placing a burger on the finish plate correctly removes it and grants points based on its status | 1. Burgers cook/switch between stages at a constant rate, in sync with the onscreen timer 2. Pressing space correctly flips the burger to its inactive side, and switches the current timer to that of the new active side 3. Placing burger on a grill spot correctly starts cooking it 4. Placing a burger on the finish plate correctly removes it and grants points based on its status | Actual = Expected | Pass |
| 2.2: Scoring / Points Calculation Test Cases | Verify scoring mechanism based on cooking level/number of burgers cooked | For each burger, score is determined by the deviation from the "best" stage of cooking (denoted by a moderate brown color and the timer arrow's position in the "green" area) for | 1. For each burger, a score based on how close the cooked burger is to the middle stage of cooking, as well as the level (1, 2, or 3) - 0-100 for level 1, 0-150 for level 2, and 0-200 for level 3. 2. At the end, a count of how many burgers were made, along with points, | 1. For each burger, a score based on how close the cooked burger is to the middle stage of cooking, as well as the level (1, 2, or 3) - 0-100 for level 1, 0-150 for level 2, and 0-200 for level 3. 2. At the end, a count of how many burgers were made, along with points, | Actual = Expected | Pass |

| | | each side | is saved. | is saved. | | |
|--------------------------------|---|--|--|--|----------------------|------|
| 2.3: End Condition | Verify the end condition for the round. | Round automatically ends, regardless of success/failu re, at a set time. 60 seconds for level 1, 40 for level 2, 20 for level 3. | 1. After the time (displayed on screen) reaches 0, the stage ends | 1. After the time (displayed on screen) reaches 0, the stage ends | Actual = Expected | Pass |
| 2.4: User Interface Test | Verify the correctness and visibility of UI elements. | Dragging a burger reveals a faint green circle on any eligible placement area. Text is visible denoting the time remaining in the stage, as well as the current score and number of burgers cooked. Timers for each side's cooking stage show when a burger is on the grill. | 1. Dragging a burger clearly shows the eligible areas for its placement. 2. Finishing a burger by placing it on the end plate increments the score and number of burgers clearly. 3. The time remaining in the stage is clearly visible. 4. The timers for cooking display correctly and are synced properly to the burger's cooking stages. | 1. Dragging a burger clearly shows the eligible areas for its placement. 2. Finishing a burger by placing it on the end plate increments the score and number of burgers clearly. 3. The time remaining in the stage is clearly visible. 4. The timers for cooking display correctly and are synced properly to the burger's cooking stages. | Actual = Expected | Pass |
| 2.5 Gameplay Flow Test | Verify the overall flow of the round. | Once a burger is burnt or finished, a new one is immediately ready to be cooked. User can drag a | 1. Burgers spawn immediately after the previous one is deleted. 2. Animations play quickly and do not detract from gameplay | 1. Burgers spawn immediately after the previous one is deleted. 2. Animations play quickly and do not detract from gameplay | Actual = Expected | Pass |

| | | burger at any time while cooking, pausing the timer. | time | time | | |
|----------------------------------|--|--|---|---|----------------------|------|
| 2.6 Difficulty Levels Test | Verify the functionality and differences between the three levels. | Stage timer, cook time, and scoring is different based on the level. An input level of 1 is the easiest, with 3 being the hardest. | 1. Time for the stage is different based on level (60 seconds for level 1, 40 seconds for level 3) 2. Burgers cook faster based on level (10 seconds for level 1, 7.5 seconds for level 2, 5 seconds for level 3) 3. Maximum score is higher based on level (100 for level 1, 150 for level 2, 200 for level 3) | 1. Time for the stage is different based on level (60 seconds for level 1, 40 seconds for level 3) 2. Burgers cook faster based on level (10 seconds for level 1, 7.5 seconds for level 2, 5 seconds for level 3) 3. Maximum score is higher based on level (100 for level 1, 150 for level 2, 200 for level 3) | Actual = Expected | Pass |

Prepping Functionality:

| Test # | Description | Input Values | Expected Output | Actual Output | P/F Criteria | Comments |
|--------------------------------|---|---|---|---|----------------------|----------|
| 3.1: Basic Gameplay Test | Verify basic gameplay functionality and movement of sprites. | Click within the displayed vegetable sprite and click outside of the displayed vegetable sprite. | Knife moves back and forth across the screen. Vegetable sprite changes upon successful clicks according to sequence but not on unsuccessful clicks. | Knife moves back and forth across the screen. Vegetable sprite changes upon successful clicks according to sequence but not on unsuccessful clicks. | Actual = Expected | Pass |
| 3.2: Scoring / Points | Verify scoring mechanism | 1. Close Click | Higher score awarded when closer to center | Higher score awarded when closer to center | Actual = Expected | Pass |

| Calculation Test Cases | based on ingredient / stack alignment. | 2. Far Click | 2. Lower score awarded when further from center 3. Overall score increases and popup shows up | 2. Lower score awarded when further from center 3. Overall score increases and popup shows up | | |
|--------------------------------|---|--|---|--|----------------------|------|
| 3.3: Winning Condition | Verify the winning condition for the round. | User cuts both the tomato and lettuce (2 cuts each) | Scene changes to cooking scene | Scene changes to cooking scene | Actual = Expected | Pass |
| 3.4: Losing Condition | Verify for the losing condition for the round. | Never click a vegetable | Nothing ever cuts so it will stay on the screen infinitely. | Nothing ever cuts so it will stay on the screen infinitely. | Actual = Expected | Pass |
| 3.5: User Interface Test | Verify the correctness and visibility of UI elements. | N/A | Knife sprite displayed, vegetable sprite displayed, background displayed, cutting board displayed, and score label displayed. | Knife sprite displayed, vegetable sprite displayed, background displayed, cutting board displayed, and score label displayed. | Actual = Expected | Pass |
| 3.6 Gameplay Flow Test | Verify the overall flow of the round. | 1. Game start - no input on this scene yet. 2. User finishes cutting tomato 3. User finishes cutting lettuce | 1. Knife is moving and score is at 0 2. Score is properly updated with first 2 cuts, both cuts have been displayed and now the lettuce is loaded 3. Score is properly updated with first 2 cuts, both cuts have been displayed and scene changed to | 1. Knife is moving and score is at 0 2. Score is properly updated with first 2 cuts, both cuts have been displayed and now the lettuce is loaded 3. Score is properly updated with first 2 cuts, both cuts have been displayed and scene | Actual = Expected | Pass |

| | | | cooking scene | changed to cooking scene | | |
|----------------------------------|--|-------------------------|--|--|----------------------|------|
| 3.7 Difficulty Levels Test | Verify the functionality and differences between the three levels. | Level 1 Level 2 Level 3 | Level 1: knife is slowest Level 2: knife is medium speed Level 3: knife is fastest | Level 1: knife is slowest Level 2: knife is medium speed Level 3: knife is fastest | Actual = Expected | Pass |

Main Menu / Database Functionality:

| Test # | Description | Input Values | Expected Output | Actual Output | P/F Criteria | Comments |
|-------------------------------|--|------------------------------|---|---|----------------------|----------|
| 4.1: User Creation Test | Verify that new users can create new accounts. | New username from user | 1. User account is successfull y created & stored in database 2. User is logging in automatica lly after account creation | 1. User account is successfull y created & stored in database 2. User is logging in automatica lly after account creation | Actual = Expected | Pass |
| 4.2: User Login Test | Verify that users can log in with existing accounts | Existing username from user | 1. User is successfull y logged in if entered username match the one stored in the database (they are directed back to the main menu) 2. Login is unsuccessful if their username does not | 1. User is successfull y logged in if entered username match the one stored in the database (they are directed back to the main menu) 2. Login is unsuccessful if their username does not | Actual = Expected | Pass |

| | | | exist in the | exist in the | | |
|---|---|---|---|---|-----------------------|---|
| | | | database | database | | |
| 4.3: Leaderboa rd Display Test | Verify the functionalit y of the leaderboar d feature | Point values and usernames from the database | The top 5 players with the highest points are displayed on the leaderboar d | The top 5 players with the highest points are displayed on the leaderboar d | Actual != Expected | *we were not able to implement this feature successfull y on time, it was a low priority task. It was able to be displayed but not in a very user friendly way* |
| 4.4 Account Persistenc e Test | Verify that user accounts persist between sessions. | User account | User's login and points are preserved even after closing and reopening the application or visiting the website again | User's login and points are preserved even after closing and reopening the application or visiting the website again | Actual = Expected | Pass |
| 4.5: Progress Saving Test | Verify that user progress is saved and users can continue onto the next level. | 1. User completes a level 2. User exists the game 3. User returns to the game | 1. After completing a level, the user's progress is saved 2. When they return, they are automatica lly taken to the next level they | 1. After completing a level, the user's progress is saved 2. When they return, they are automatica lly taken to the next level they | Actual = Expected | Pass |

| | have not completed 3. If the user finished all levels, they are taken back to level 3 to replay. | have not completed 3. If the user finished all levels, they are taken back to level 3 to replay. | | |
|--|--|--|--|--|
|--|--|--|--|--|

Shop Functionality (Feature 1):

| Test # | Description | Input Values | Expected Output | Actual Output | P/F Criteria | Comments |
|---|---|---|--|--|----------------------|----------|
| 5.1: Purchase Item Test | Verify that users can purchase items from the shop. | User points, selected item to purchase (utensil or plate), selected color | 1. User's points are deducted by 600 points 2. User is able to equip that item. 3. The item's appearanc e in the levels reflects the color (purple, blue, green) and type of item (utensil or plate) selected by the user. | 1. User's points are deducted by 600 points 2. User is able to equip that item. 3. The item's appearanc e in the levels reflects the color (purple, blue, green) and type of item (utensil or plate) selected by the user. | Actual = Expected | Pass |
| 5.2: Change Equipped Item Test | Verify that users can change the equipped item. | User's inventory (in the shop), Selected item to | 1. Users can change the equipped item from the shop | 1. Users can change the equipped item from the shop | Actual = Expected | Pass |

| | equip | 2. The newly equipped item is used in the levels that they play. | 2. The newly equipped item is used in the levels that they play. | | |
|--|-------|--|--|--|--|
|--|-------|--|--|--|--|

Jukebox Functionality (Feature 2):

| Test # | Description | Input Values | Expected Output | Actual Output | P/F Criteria | Comments |
|---|---|---|--|--|----------------------|----------|
| 6.1: Purchase Vinyl Test | Verify that users can purchase vinyl from the shop. | User points, selected vinyl to purchase | 1. User's points are deducted by 1000 points after purchasing a vinyl. 2. The purchased vinyl is added to the user's selection and provided as an option to be played. | 1. User's points are deducted by 1000 points after purchasing a vinyl. 2. The purchased vinyl is added to the user's selection and provided as an option to be played. | Actual = Expected | Pass |
| 6.2: Jukebox Functionali ty Test | Verify the functionalit y of the jukebox. | User purchases a vinyl | 1. Users with at least one vinyl can play music from the jukebox. 2. Music is played from the user's selected vinyl. | 1. Users with at least one vinyl can play music from the jukebox. 2. Music is played from the user's selected vinyl. | Actual = Expected | Pass |
| 6.3: Changing Vinyl Test | Verify that users can change the | User's vinyl collection, | 1. Users with more than one | 1. Users with more than one | Actual = Expected | Pass |

| | vinyl being played. | selected vinyl to play | vinyl can choose which vinyl to play by visiting the Jukebox and clicking on a vinyl. 2. The jukebox plays music from the user's selected vinyl. | vinyl can choose which vinyl to play by visiting the Jukebox and clicking on a vinyl. 2. The jukebox plays music from the user's selected vinyl. | | |
|--|------------------------|------------------------------|---|---|--|--|
|--|------------------------|------------------------------|---|---|--|--|