

#	Category	Requirement	Functionality Under Test	Steps and inputs to exercise functionality	Results	Pass/Fail
1	Open Screen	When starting the application, a user may choose to either create a new player or log in. For simplicity in designing the application, you should consider the application to run locally; that is, only players on the same device will be able to share information (e.g., puzzles, tournaments, scores). In addition, you do not need to consider authentication or security requirements; that is, a (unique) username will be sufficient for logging in.	Opening the app takes you to a screen that presents both login and create new player options	Make sure the app is not already running and open the app.	The screen that comes up has a login button and a create user button	PASS
2	Create User	When creating a new player, a user will: Enter the player's first name. Enter the player's last name. Enter the player's desired username. Enter the player's email. Submit the information. Either receive a confirmation that the information is saved and return to the menu or receive an error if the username is already taken on that device and be offered the option to pick a different username.	Test that entering all the required information for a user and submitting will success	Follow Test 1 From the title Screen, Click the Create user button. Add "firstname" to the First Name textbox. Add "lastname" to the Last Name textbox. Add "user" to the Username textbox. Add "email" to the Email textbox. Click the Submit button	The screen switched to the menu screen and a message "New User Created" popped up	PASS
3	Create User	When creating a new player, a user will: Enter the player's first name. Enter the player's last name. Enter the player's desired username. Enter the player's email. Submit the information. Either receive a confirmation that the information is saved and return to the menu or receive an error if the username is already taken on that device and be offered the option to pick a different username.	Test that entering all the required information for a user but with a username that has already been used will result in an error	Follow Test 1 Follow Test 2 Click the logout button on the main menu screen From the title Screen, Click the Create user button. Add "firstname2" to the First Name textbox. Add "lastname2" to the Last Name textbox. Add "user" to the Username textbox. Add "email2" to the Email textbox. Click the Submit button	Error message popped up "Requested username is already used" and marked the Username field with an error marker (!)	PASS
4	Create User	When creating a new player, a user will: Enter the player's first name. Enter the player's last name. Enter the player's desired username. Enter the player's email. Submit the information. Either receive a confirmation that the information is saved and return to the menu or receive an error if the username is already taken on that device and be offered the option to pick a different username.	Test that firstname, lastname, username and email are required to create a username	Follow Test 1 From the title Screen, Click the Create user button. Click the Submit button <Result1> Add "firstname2" to the First Name textbox. Click the Submit button <Result2> Add "lastname2" to the Last Name textbox. Click the Submit button <Result3> Add "user" to the Username textbox. Click the Submit button <Result4> Add "email2" to the Email textbox. Remove test from Username textbox. Click the Submit button <Result5>	1. Error message popped up "All fields required to create new user" and marked all fields with an error marker (!) 2. Error message popped up "All fields required to create new user" and marked all fields but First Name with an error marker (!) 3. Error message popped up "All fields required to create new user" and marked Username and Email fields with an error marker (!) 4. Error message popped up "All fields required to create new user" and marked Email field with an error marker (!) 5. Error message popped up "All fields required to create new user" and marked Username field with an error marker (!)	PASS
5	Login User	After logging in, the application shall allow players to (1) create a puzzle phrase, (2) solve a random puzzle, (3) create a tournament, (4) join or continue a tournament, and (5) view the puzzle statistics.	Test that logging in takes the user to a main menu screen with all the required buttons	Follow Test 2 to create a user with username "a" Close and reopen the app or click logout from main menu Type in the username "a" in the text box on the screen. Click the login button.	Screen transitions to a new screen with buttons for all of the items listed in the requirement	PASS
6	Login User	When starting the application, a user may choose to either create a new player or log in. A (unique) username will be sufficient for logging in.	Test that logging in with an invalid username results in an error	Open the application Type in the username "NotAUserName" in the text box on the screen. Click the login button.	Error message popped up stating that "This username does not exist"	PASS
7	Create Puzzle	To create a puzzle the player will: Enter a phrase. Enter the maximum number of allowed wrong guesses a user can make before losing the game, between 0 and 10. Save and view the returned unique identifier for the puzzle. The puzzle may not be further edited after this point.	Test that entering all the required information for a puzzle and submitting will succeed and unique puzzleID will generate	Follow Test 2 to create a user or Follow Test 5 to login to an existing user Press the "Create a Puzzle" button on the Main Menu Type "Puzzle Phrase 1" in the "Phrase" field Select a number from the "Number of Guesses Allowed" dropdown Press Save	The Puzzle is saved in the database and the identifier is displayed in the UniqueID field. The user is then redirected back to the Main Menu	PASS
8	Create Puzzle	To create a puzzle the player will: Enter a phrase. Enter the maximum number of allowed wrong guesses a user can make before losing the game, between 0 and 10. Save and view the returned unique identifier for the puzzle. The puzzle may not be further edited after this point.	Test that submitting a puzzle without a phrase results in an error	Follow Test 2 to create a user or Follow Test 5 to login to an existing user Press the "Create a Puzzle" button on the Main Menu Press Save without entering in a Phrase	Error message popped up stating "Enter a Puzzle Phrase"	PASS
9	Play Puzzle	When a player starts solving a puzzle, whether selected randomly or added to a tournament, the game will: Display the puzzle phrase, where (1) all non-alphabetic characters (e.g., numbers or punctuation) are shown, and (2) regular letters are replaced by blanks. The game should also display a list of all letters not yet chosen, the total prize, with an initial value of \$0, and the remaining number of allowed wrong guesses, initialized to the maximum number of allowed wrong guesses chosen by the puzzle creator (see above),	Test that when a Player starts playing a puzzle the initial phrase is displayed with non-alphabetic characters revealed and regular letters replaced with underscores in the Puzzle Phrase field	Follow Test 7 to create a puzzle with phrase "abc123" Follow Test 2 to create a different user or Follow Test 5 to login to a existing different user Press the "Solve a Puzzle" button on the Main Menu	Switched to the puzzle play screen. Puzzle Phrase on the screen showed as " _ _123!"	PASS

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10	Play Puzzle	When a player starts solving a puzzle, whether selected randomly or belonging to a tournament, the game will: Display the puzzle phrase, where (1) all non-alphabetic characters (e.g., numbers or punctuation) are shown, and (2) regular letters are replaced by blanks. The game should also display a list of all letters not yet chosen, the total prize, with an initial value of \$0, and the remaining number of allowed wrong guesses, initialized to the maximum number of allowed wrong guesses chosen by the puzzle creator (see above).	Test that when a Player starts playing a puzzle all letters (A-Z) are displayed in the Available Letters section	Follow Test 9	Switched to the puzzle play screen. Available Letters selection showed listed all letters (A-Z)	PASS
11	Play Puzzle	When a player starts solving a puzzle, whether selected randomly or belonging to a tournament, the game will: Display the puzzle phrase, where (1) all non-alphabetic characters (e.g., numbers or punctuation) are shown, and (2) regular letters are replaced by blanks. The game should also display a list of all letters not yet chosen, the total prize, with an initial value of \$0, and the remaining number of allowed wrong guesses, initialized to the maximum number of allowed wrong guesses chosen by the puzzle creator (see above).	Test that when a Player starts playing a puzzle the Total Prize is set to 0	Follow Test 9	Switched to the puzzle play screen. Total Prize section showed as 0.	PASS
12	Play Puzzle	When a player starts solving a puzzle, whether selected randomly or belonging to a tournament, the game will: Display the puzzle phrase, where (1) all non-alphabetic characters (e.g., numbers or punctuation) are shown, and (2) regular letters are replaced by blanks. The game should also display a list of all letters not yet chosen, the total prize, with an initial value of \$0, and the remaining number of allowed wrong guesses, initialized to the maximum number of allowed wrong guesses chosen by the puzzle creator (see above).	Test that when a Player starts playing a puzzle the Wrong Guesses Remaining field is equal to the maximum guesses chosen during puzzle creation	Follow Test 9 and set the Total Number of guesses to 9 when creating the puzzle.	Switched to the puzzle play screen. Wrong Guesses Remaining section showed as 9	PASS
13	Play Puzzle	Allow the player to choose, at every turn, whether to guess a consonant, buy a vowel, or solve the puzzle.	Test that when a Player starts playing a puzzle there are buttons to "Guess a Consonant" "Buy a Vowel" "Solve the Puzzle" "Back to Main Menu"	Follow Test 9	Switched to the puzzle play screen. Screen has buttons labeled "Guess a Consonant" "Buy a Vowel" "Solve the Puzzle" "Back to Main Menu"	PASS
14	Play Puzzle	Guessing a consonant will show the player a randomly chosen prize value that is a multiple of \$100 and is between \$100 and \$1000. If the guess is correct (i.e., the consonant is in the puzzle), all the occurrences of the consonant in the puzzle will be revealed, and the total prize will be increased by the prize value times the number of such occurrences.	Test that when a Player guesses a consonant that exists in the phrase, all instances of the letter in the Puzzle Phrase are revealed	Follow Test 9 using the phrase "abcabc" when creating a puzzle. Enter the letter "b" on the Enter your guess here prompt. Click the Guess a Consonant button.	Puzzle Phrase changed from " _ _ _ _ " to " b _ b _ ". Money was added to the total score.	PASS
15	Play Puzzle	Guessing a consonant will show the player a randomly chosen prize value that is a multiple of \$100 and is between \$100 and \$1000. If the guess is correct (i.e., the consonant is in the puzzle), all the occurrences of the consonant in the puzzle will be revealed, and the total prize will be increased by the prize value times the number of such occurrences.	Test that a random multiple of 100 between 100 and 1000 is displayed in the "Prize" section and changes with each consonant guessed Note: Since this is a random field it is possible for the Prize to be the same between guesses	Follow Test 9 using the phrase "abcabc" when creating a puzzle. <Result1> Enter the letter "x" on the Enter your guess here prompt. Click the Guess a Consonant button. <Result2> Enter the letter "y" on the Enter your guess here prompt. <Result3> Enter the letter "z" on the Enter your guess here prompt. <Result4>	1. Prize value was 200 2. Prize value was 500 3. Prize value was 700 4. Prize value was 100	PASS
16	Play Puzzle	Guessing a consonant will show the player a randomly chosen prize value that is a multiple of \$100 and is between \$100 and \$1000. If the guess is correct (i.e., the consonant is in the puzzle), all the occurrences of the consonant in the puzzle will be revealed, and the total prize will be increased by the prize value times the number of such occurrences.	Test that when a Player guesses a consonant that exists in the phrase, the Total Prize field is increased by the Prize * # of occurrences in the Puzzle Phrase	Follow Test 9 using the phrase "abcabc" when creating a puzzle. Note the value of the Prize section. Enter the letter "b" on the Enter your guess here prompt. Click the Guess a Consonant button.	Noted value was 500. Total Prize changed from 0 to 1000.	PASS
17	Play Puzzle	Buying a vowel will cost \$300 of the player's total prize and will result in revealing all instances of that vowel in the puzzle.	Test that when a Player guesses a vowel the Total Prize is decreased by 300	"Follow Test 9 using the phrase "abcabcabc" when creating a puzzle. Enter the letter "b" on the Enter your guess here prompt. Click the Guess a Consonant button." Note that Total Prize should be more than 300, if not guess "c" too. Enter the letter "a" on the Enter your guess here prompt. Note the current value of Total Prize. Click Buy a Vowel.	Total prize was at 600 after guessing b. Then after clicking Buy a Vowel the total prize dropped to 300.	PASS
18	Play Puzzle	Buying a vowel will cost \$300 of the player's total prize and will result in revealing all instances of that vowel in the puzzle.	Test that when a Player guesses a vowel that exists in the phrase, all instances of the letter in the Puzzle Phrase are revealed	"Follow Test 9 using the phrase "abcabcabc" when creating a puzzle. Enter the letter "b" on the Enter your guess here prompt. Click the Guess a Consonant button." Note that Total Prize should be more than 300, if not guess "c" too. Enter the letter "a" on the Enter your guess here prompt. Click Buy a Vowel.	Puzzle Phrase changed from " _ b _ b _ b _ " to " a b _ a b _ a b _ ". Enter your guess here section was marked with an error mark (!) and error message "You don't have enough money left to buy a vowel" was displayed.	PASS
19	Play Puzzle	Buying a vowel will cost \$300 of the player's total prize and will result in revealing all instances of that vowel in the puzzle.	Test that a Player is not allowed to buy a vowel when their Total Prize is less than 300	"Follow Test 9 using the phrase "abcabcabc" when creating a puzzle. Enter the letter "a" on the Enter your guess here prompt. Click Buy a Vowel.	Enter your guess here section was marked with an error mark (!) and error message "You don't have enough money left to buy a vowel" was displayed.	PASS
20	Play Puzzle	If a vowel or a consonant are guessed incorrectly (i.e., the guessed letter is not present in the puzzle), the remaining number of allowed wrong guesses is decremented. If the number goes below zero, the player gets a prize of \$0 for that puzzle, and the game ends.	Test that when a Player guesses a consonant that doesn't exist in the phrase, the Wrong Guesses Remaining value is decreased by one	Follow Test 9 In the "Enter Your Guesses Here" field, type a consonant from the Letters Available section that is not "b", or "c" Click "Guess a Consonant"	The "Wrong Guesses Remaining" field decreases in value by 1 The consonant disappears from the "Available Letters" list	PASS
21	Play Puzzle	If a vowel or a consonant are guessed incorrectly (i.e., the guessed letter is not present in the puzzle), the remaining number of allowed wrong guesses is decremented. If the number goes below zero, the player gets a prize of \$0 for that puzzle, and the game ends.	Test that when a Player guesses a vowel that doesn't exist in the phrase, the Wrong Guesses Remaining value is decreased by one	Follow Test 9 In the "Enter Your Guesses Here" field, type a vowel that is in the "Available Letters" section that is not "a" Click "Buy a Vowel"	The "Wrong Guesses Remaining" field decreases in value by 1 The vowel disappears from the "Available Letters" list	PASS

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22	Play Puzzle	If a vowel or a consonant are guessed incorrectly (i.e., the guessed letter is not present in the puzzle), the remaining number of allowed wrong guesses is decremented. If the number goes below zero, the player gets a prize of \$0 for that puzzle, and the game ends.	Test that when a Player guesses a letter incorrectly and the number of allowed wrong guesses goes below zero the game ends and they get a total prize of 0	Follow Test 9 In the "Enter Your Guesses Here" field, type a character that is in the "Available Letters section that is not "a", "b", or "c" Click "Buy a Vowel" or "Guess a Consonant" Repeat this process until the "Allowable Wrong Guesses" value drops below zero	The "Total Prize" value changes to 0 A message that says "Sorry! You have lost the game. Returning you back to main menu" appears User is brought back to the main menu	PASS
23	Play Puzzle	If a player selects to solve the puzzle and is successful, he/she will score \$1000 for each letter not yet revealed, and his/her total prize will be recorded and associated to that puzzle and player. Conversely, if a player tries to solve the puzzle and is unsuccessful, he/she gets a prize of \$0 for that puzzle, and the game ends.	Test that when a Player solves the puzzle correctly the game ends and they get a total prize that is equal to the value in the Total Prize field plus 1000 * each unrevealed letter in Puzzle Phrase	Follow Test 5 to login to an existing user On the main menu screen click "Clear Application Data" Follow Test 2 to create a new user On the main menu screen click "Create a Puzzle" In the "Phrase" field type "test" Select a number of allowable guesses and click save On the main menu click "Logout" Follow Test 2 to create a new user On the main menu click "Solve a Puzzle" In the game screen type "t" in the "Enter Your Guesses Here" field then click the "Guess a Consonant" button Once a "t" appears at the beginning and end of the "Puzzle Phrase" field, type the full word "test" into the "Enter Your Guesses Here" field Click "Solve the Puzzle"	When solving the puzzle, type "t" and selecting the "Guess a Consonant" button, two t's appear in the Puzzle Phrase field The "Total Prize" value changes to 1400 (this will vary) After clicking "Solve the Puzzle" a message appears that says "Congratulations! You guessed "test" correctly! You won \$3400. Returning you to main menu." 3400 = Total Prize + 1000*(2 missing letters)	PASS
24	Play Puzzle	If a player selects to solve the puzzle and is successful, he/she will score \$1000 for each letter not yet revealed, and his/her total prize will be recorded and associated to that puzzle and player. Conversely, if a player tries to solve the puzzle and is unsuccessful, he/she gets a prize of \$0 for that puzzle, and the game ends.	Test that when a Player solves the puzzle incorrectly the game ends and they get a total prize of 0	Follow Test 7 to create a puzzle with phrase "abc123" Follow Test 2 to create a different user or Follow Test 5 to login to a existing different user Press the "Solve a Puzzle" button on the Main Menu type "l" into the "Enter Your Guesses Here" field then click "Solve the Puzzle"	A message appears that says "Sorry! You got it incorrect. Returning you to main menu" The Total Prize value changes to \$0 User is brought back to main menu	PASS
25	Play Puzzle	If a player interrupts a puzzle (e.g., by explicitly choosing to exit the game while solving a puzzle), the game must give the player the option to continue. If the player confirms that he/she wants to exit, he/she gets a prize of \$0 for that puzzle, and the game ends.	Test that when a Player presses "Back to Main Menu" they are asked to confirm if they would like to end the game	Follow Test 2 to create a different user or Follow Test 5 to login to a existing different user Press the "Solve a Puzzle" button on the Main Menu Click the "Back to Main Menu" button at the bottom right of the screen	A dialogue box appears that says "This will cause you to forfeit the game" and prompts the user to select either the "Cancel" button or the "Exit to main menu" button	PASS
26	Play Puzzle	If a player interrupts a puzzle (e.g., by explicitly choosing to exit the game while solving a puzzle), the game must give the player the option to continue. If the player confirms that he/she wants to exit, he/she gets a prize of \$0 for that puzzle, and the game ends.	Test that when a Player presses the back button on the Android phone they are asked to confirm if they would like to end the game	Follow Test 2 to create a different user or Follow Test 5 to login to a existing different user Press the "Solve a Puzzle" button on the Main Menu Click the back button at the bottom left of the screen	A dialogue box appears that says "This will cause you to forfeit the game" and prompts the user to select either the "Cancel" button or the "Exit to main menu" button	PASS
27	Play Puzzle	If a player interrupts a puzzle (e.g., by explicitly choosing to exit the game while solving a puzzle), the game must give the player the option to continue. If the player confirms that he/she wants to exit, he/she gets a prize of \$0 for that puzzle, and the game ends.	Test that if a Player decides not to exit and wishes to continue playing the puzzle they are returned to the Puzzle page and can resume playing	Follow Test 2 to create a different user or Follow Test 5 to login to a existing different user Press the "Solve a Puzzle" button on the Main Menu Either click the back button at the bottom left of the screen or Click the "Back to Main Menu" button When the dialogue box appears, click "Cancel"	The game resumes and the user can continue playing	PASS
28	Play Puzzle	If a player interrupts a puzzle (e.g., by explicitly choosing to exit the game while solving a puzzle), the game must give the player the option to continue. If the player confirms that he/she wants to exit, he/she gets a prize of \$0 for that puzzle, and the game ends.	Test that if a Player decides to exit the game on the confirmation screen that the game ends and they get a total prize of 0	Follow Test 2 to create a different user or Follow Test 5 to login to a existing different user Press the "Solve a Puzzle" button on the Main Menu Either click the back button at the bottom left of the screen or Click the "Back to Main Menu" button When the dialogue box appears, click "Exit to main menu"	The Total Prize value changes to \$0 and the user is brought back to the main menu screen	PASS
29	Play Puzzle	Guessing a consonant will show the player a randomly chosen prize value that is a multiple of \$100 and is between \$100 and \$1000. If the guess is correct (i.e., the consonant is in the puzzle), all the occurrences of the consonant in the puzzle will be revealed, and the total prize will be increased by the prize value times the number of such occurrences.	Test that if a Player presses "Guess a Consonant" with an empty guess an error message is displayed	Follow Test 2 to create a different user or Follow Test 5 to login to a existing different user Press the "Solve a Puzzle" button on the Main Menu Leave the "Enter Your Guesses Here" field blank Click the "Guess a Consonant" button	An error message appears near the "Enter Your Guesses Here" field that says "Must be a single character"	PASS
30	Play Puzzle	Guessing a consonant will show the player a randomly chosen prize value that is a multiple of \$100 and is between \$100 and \$1000. If the guess is correct (i.e., the consonant is in the puzzle), all the occurrences of the consonant in the puzzle will be revealed, and the total prize will be increased by the prize value times the number of such occurrences.	Test that if a Player presses "Guess a Consonant" with a vowel that an error message is displayed	Follow Test 2 to create a different user or Follow Test 5 to login to a existing different user Press the "Solve a Puzzle" button on the Main Menu Type the letter "a" into the "Enter Your Guesses Here" field Click the "Guess a Consonant" button	An error message appears near the "Enter Your Guesses Here" field that says "Must be a consonant"	PASS
31	Play Puzzle	Guessing a consonant will show the player a randomly chosen prize value that is a multiple of \$100 and is between \$100 and \$1000. If the guess is correct (i.e., the consonant is in the puzzle), all the occurrences of the consonant in the puzzle will be revealed, and the total prize will be increased by the prize value times the number of such occurrences.	Test that if a Player presses "Guess a Consonant" with more than one character that an error message is displayed	Follow Test 2 to create a different user or Follow Test 5 to login to a existing different user Press the "Solve a Puzzle" button on the Main Menu Type the letters "bc" into the "Enter Your Guesses Here" field Click the "Guess a Consonant" button	An error message appears near the "Enter Your Guesses Here" field that says "Must be a single character"	PASS
32	Play Puzzle	Guessing a consonant will show the player a randomly chosen prize value that is a multiple of \$100 and is between \$100 and \$1000. If the guess is correct (i.e., the consonant is in the puzzle), all the occurrences of the consonant in the puzzle will be revealed, and the total prize will be increased by the prize value times the number of such occurrences.	Test that if a Player presses "Guess a Consonant" with a character that has already been guessed that an error message is displayed	Follow Test 2 to create a different user or Follow Test 5 to login to a existing different user Press the "Solve a Puzzle" button on the Main Menu Type the letter "b" into the "Enter Your Guesses Here" field Click the "Guess a Consonant" button	An error message appears near the "Enter Your Guesses Here" field that says "Letter is not available"	PASS

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33	Play Puzzle	Buying a vowel will cost \$300 of the player's total prize and will result in revealing all instances of that vowel in the puzzle.	Test that if a Player presses "Buy a Vowel" with an empty guess an error message is displayed	Follow Test 2 to create a different user or Follow Test 5 to login to a existing different user Press the "Solve a Puzzle" button on the Main Menu Leave the "Enter Your Guesses Here" field blank Click the "Buy a Vowel" button	An error message appears near the "Enter Your Guesses Here" field that says "Must be a single character"	PASS
34	Play Puzzle	Buying a vowel will cost \$300 of the player's total prize and will result in revealing all instances of that vowel in the puzzle.	Test that if a Player presses "Buy a Vowel" with a consonant that an error message is displayed	Follow Test 2 to create a different user or Follow Test 5 to login to a existing different user Press the "Solve a Puzzle" button on the Main Menu Type the letter "c" in the "Enter Your Guesses Here" field Click the "Buy a Vowel" button	An error message appears near the "Enter Your Guesses Here" field that says "Must be a vowel"	PASS
35	Play Puzzle	Buying a vowel will cost \$300 of the player's total prize and will result in revealing all instances of that vowel in the puzzle.	Test that if a Player presses "Buy a Vowel" with more than one character that an error message is displayed	Follow Test 2 to create a different user or Follow Test 5 to login to a existing different user Press the "Solve a Puzzle" button on the Main Menu Type the letters "ae" in the "Enter Your Guesses Here" field Click the "Buy a Vowel" button	An error message appears near the "Enter Your Guesses Here" field that says "Must be a single character"	PASS
36	Play Puzzle	Buying a vowel will cost \$300 of the player's total prize and will result in revealing all instances of that vowel in the puzzle.	Test that if a Player presses "Buy a Vowel" with a Total Prize value less than \$300, an error is displayed	Follow Test 2 to create a different user or Follow Test 5 to login to a existing different user Press the "Solve a Puzzle" button on the Main Menu Type the letter "u" in the "Enter Your Guesses Here" field Click the "Buy a Vowel" button	An error message appears near the "Enter Your Guesses Here" field that says "You don't have enough money to buy a vowel"	PASS
37	Play Puzzle	When a player selects to solve a random puzzle, the game will not choose puzzles he/she has created or already successfully/unsuccessfully played.	Test that when a Player selects "Solve a Puzzle" from the Main Menu that a random puzzle is selected for them to play that they haven't already played and haven't created	Follow Test 5 to login to a existing different user On the main menu, click "Clear Application Data" Follow Test 2 to create a new user with username "creator" Follow Test 7 to create a puzzle with phrase "creator1" Follow Test 7 to create a puzzle with phrase "creator2" Follow Test 2 to create a different user with username "playor" Follow Test 7 to create a puzzle with the phrase "playor0" Press the "Solve a Puzzle" button on the Main Menu Note the number shown in the the Puzzle Phrase should be 1 or 2. Click the Back to Main Menu button and confirm the exit. Press the "Solve a Puzzle" button on the Main Menu again. Note the number shown in the the Puzzle Phrase should be the other of 1 or 2 that hasn't already been seen. Click the Back to Main Menu button and confirm the exit. Press the "Solve a Puzzle" button on the Main Menu again. Note that message displayed	First puzzle shown was puzzle with 2 in phrase. Second puzzle shown was puzzle with 1 in phrase. The message "There are no more puzzles for the user to solve as shown."	PASS
38	Play Puzzle	When a player selects to solve a random puzzle, the game will not choose puzzles he/she has created or already successfully/unsuccessfully played.	Test that when a Player selects "Solve a Puzzle" if there are no puzzles that they didn't create or haven't already played a message is displayed	Follow Test 5 to login to a existing different user On the main menu, click "Clear Application Data" Follow Test 2 to create a different user with username "playor" Press the "Solve a Puzzle" button on the Main Menu	A message appears that says "There are no puzzles for this user to play"	PASS
39	Play Puzzle	If a player selects to solve the puzzle and is successful, he/she will score \$1000 for each letter not yet revealed, and his/her total prize will be recorded and associated to that puzzle and player. Conversely, if a player tries to solve the puzzle and is unsuccessful, he/she gets a prize of \$0 for that puzzle, and the game ends.	Test that when all letters have been revealed in the Puzzle Phrase that they game is ended and the Player is awarded the value in Total Prize	Follow Test 7 to create a puzzle with phrase "abc123" On the main menu click "Logout" Follow Test 2 to create a different user or Follow Test 5 to login to a existing different user Press the "Solve a Puzzle" button on the Main Menu Type "b" in the Enter Your Guesses Here field Click "Guess a Consonant" Type "c" in the Enter Your Guesses Here field Click "Guess a Consonant" Type "a" in the Enter Your Guesses Here field Click "Buy a Vowel"	A message appears that says "Congratulations! You guessed "abc123" correctly! You won \$XX. Returning you to main menu."	PASS

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40	Play Puzzle	If a player selects to solve the puzzle and is successful, he/she will score \$1000 for each letter not yet revealed, and his/her total prize will be recorded and associated to that puzzle and player. Conversely, if a player tries to solve the puzzle and is unsuccessful, he/she gets a prize of \$0 for that puzzle, and the game ends.	Test that when a game ends all Tournaments that the user has joined, and contains the puzzle just played, have their total prize increased by the amount of the Puzzle's Total Prize	Follow Test 5 to login to a existing different user On the main menu, click "Clear Application Data" Follow Test 2 to create a new user with username "creator" Follow Test 7 to create a puzzle with phrase "creator1" Follow Test 7 to create a puzzle with phrase "creator2" Follow Test 7 to create a puzzle with phrase "creator3" Press the "Create a Tournament" button on the Main Menu Type "creator12" in the "Tournament Name" field Check the boxes next to puzzles 1 and 2. Click Create to create the tournament. Press the "Create a Tournament" button on the Main Menu again Type "creator23" in the "Tournament Name" field Check the boxes next to puzzles 2 and 3. Click Create to create the tournament. Click the Logout button on the Main Menu Follow Test 2 to create a new user with username "player" Click the Join/Continue Tournament Button from the main menu. Click the Join Tournament button from the Tournament menu. Select creator12 as the tournament to join. The puzzle that pops up should be the one ending in "1". Solve the puzzle and note the ending score for the puzzle. Click the Join/Continue Tournament Button from the main menu. Click the Join Tournament button from the Tournament menu. Select creator23 as the tournament to join. The puzzle that pops up should be the one ending in "2". Solve the puzzle and note the ending score for the puzzle. Click the View Statistics button from the main menu. Select My Tournament Stats from the stats menu. Make note that the only Tournament in the stats should be creator12 and that the value should be the total of both the 1 and 2 puzzles.	Value from puzzle ending in 1 was 1000. Value from puzzle ending in 2 was 1000. Stats showed puzzle creator12 with a final value of 2000.	PASS
41	Create Tournament	To create a tournament, a player will: Select 1 to 5 puzzles from a list of puzzles that they have either created or already played. Enter a name for the tournament. Either receive a confirmation that the tournament has been created and return to the menu or receive an error if the tournament name is already taken and be offered the option to pick a different name. At this point, the tournament will be available for others to join.	Test that entering a name and selecting between 1 and 5 Puzzles (inclusive) and submitting will succeed and the user receives a confirmation	Follow Test 2 to create a different user or Follow Test 5 to login to a existing different user Press the "Create a Tournament" button on the Main Menu Type "testing" in the "Tournament Name" field Select between one and 5 puzzles from the populated list by clicking on the checkmarks Click the "Create" button	A message saying "Tournament Created" appears User is brought back to the main menu screen	PASS
42	Create Tournament	To create a tournament, a player will: Select 1 to 5 puzzles from a list of puzzles that they have either created or already played. Enter a name for the tournament. Either receive a confirmation that the tournament has been created and return to the menu or receive an error if the tournament name is already taken and be offered the option to pick a different name. At this point, the tournament will be available for others to join.	Test that if the user tries to submit a tournament with no puzzles selected an error is displayed	Follow Test 2 to create a different user or Follow Test 5 to login to a existing different user Press the "Create a Tournament" button on the Main Menu Type a tournament name in the "Tournament Name" field Don't select any puzzles from the populated list Click the "Create" button	An error message appears in the Tournament Name field that says "No puzzles selected"	PASS
43	Create Tournament	To create a tournament, a player will: Select 1 to 5 puzzles from a list of puzzles that they have either created or already played. Enter a name for the tournament. Either receive a confirmation that the tournament has been created and return to the menu or receive an error if the tournament name is already taken and be offered the option to pick a different name. At this point, the tournament will be available for others to join.	Test that if the user tries to submit a tournament with more than 5 puzzles selected an error is displayed	Follow Test 2 to create a different user or Follow Test 5 to login to a existing different user Press the "Create a Tournament" button on the Main Menu Type "testing" in the "Tournament Name" field Select 6 puzzles from the populated list Click the "Create" button	An error message appears in the Tournament Name field that says "A tournament cannot have more than 5 puzzles"	PASS
44	Create Tournament	To create a tournament, a player will: Select 1 to 5 puzzles from a list of puzzles that they have either created or already played. Enter a name for the tournament. Either receive a confirmation that the tournament has been created and return to the menu or receive an error if the tournament name is already taken and be offered the option to pick a different name. At this point, the tournament will be available for others to join.	Test that if the user tries to submit a tournament with no tournament name an error is displayed	Follow Test 2 to create a different user or Follow Test 5 to login to a existing different user Press the "Create a Tournament" button on the Main Menu Leave the Tournament Name field blank Select between 1 and 5 puzzles from the populated list Click the "Create" button	An error message appears in the Tournament Name field that says "Enter a tournament name"	PASS

#	Category	Requirement	Functionality Under Test	Steps and inputs to exercise functionality	Results	Pass/Fail
45	Create Tournament	To create a tournament, a player will: Select 1 to 5 puzzles from a list of puzzles that they have either created or already played. Enter a name for the tournament. Either receive a confirmation that the tournament has been created and return to the menu or receive an error if the tournament name is already taken and be offered the option to pick a different name. At this point, the tournament will be available for others to join.	Test that the list of Puzzles only contains those that the Player has either played or created	Follow Test 5 to login to a existing different user On the main menu, click "Clear Application Data" Follow Test 2 to create a new user with username "creator" Follow Test 7 to create a puzzle with phrase "creator1", note the puzzle id should be 1 Follow Test 7 to create a puzzle with phrase "creator2", note the puzzle id should be 2 Follow Test 7 to create a puzzle with phrase "creator3", note the puzzle id should be 3 Press the "Create a Tournament" button on the Main Menu Note which puzzle ids show up. Press back button to go back to main menu. Press Logout button. Follow Test 2 to create a new user with username "creator2" Follow Test 7 to create a puzzle with phrase "creator4", note the puzzle id should be 4 Follow Test 7 to create a puzzle with phrase "creator5", note the puzzle id should be 5 Follow Test 7 to create a puzzle with phrase "creator6", note the puzzle id should be 6 Press the "Create a Tournament" button on the Main Menu Note which puzzle ids show up. Press back button to go back to main menu. Select the Solve a Puzzle button from main menu Note the number on the end of the puzzle. Click the Back to Main Menu button and confirm loss of puzzle (played puzzle).	When logged into player "creator" and creating a tournament, only 1, 2, and 3 show up as selectable. When logged into player "creator2" and creating a tournament before playing any games, only 4, 5, and 6 show up as selectable. The puzzle that was played ended in 2. When logged into player "creator2" and creating a tournament after playing a game, 2, 4, 5, and 6 show up as selectable.	PASS
46	Create Tournament	To create a tournament, a player will: Select 1 to 5 puzzles from a list of puzzles that they have either created or already played. Enter a name for the tournament. Either receive a confirmation that the tournament has been created and return to the menu or receive an error if the tournament name is already taken and be offered the option to pick a different name. At this point, the tournament will be available for others to join.	Test that if the Player tries to create a Tournament with a name that already exists an error is displayed	Follow test 42 Follow Test 2 to create a different user or Follow Test 5 to login to a existing different user	An error message appears that says "A tournament already exists with that name"	PASS
47	Play Tournament	To play a tournament, a player can select whether to join a new tournament or continue a tournament he/she has already joined.	Test that when the user selects Join/Continue Tournament from the Main Menu they are given the option to either join a new Tournament or continue one they've already joined	On the main menu screen, click "Join/Continue Tournament"	A new screen with two buttons: "Join Tournament" and "Continue Tournament" appears	PASS
48	Join Tournament	If the player opts for joining a new tournament, the game will show the player a list of tournaments that are currently available for him/her to join (i.e. all tournaments that contain (1) no puzzles created by the player and (2) at least one puzzle not yet played by the player). When the player chooses a tournament in the list, the game will display the first puzzle in the tournament,	Test that when the user selects to Join Tournament they are shown a list of Tournaments that contain no Puzzles they created and at least one Puzzle they haven't yet played	Follow Test 5 to login to a existing different user On the main menu, click "Clear Application Data" Follow Test 2 to create a new user with username "play" Follow Test 7 to create a puzzle with phrase "play1", note the puzzle id should be 1 Click the logout button from the main menu Follow Test 2 to create a new user with username "creator" Click Solve a Puzzle from the main menu Note that the puzzle the comes up should end in 1 and be the play1 puzzle. Solve the second puzzle by solving, playing or quitting. Follow Test 7 to create a puzzle with phrase "creator2", note the puzzle id should be 2 Follow Test 7 to create a puzzle with phrase "creator3", note the puzzle id should be 3 Follow Test 7 to create a puzzle with phrase "creator4", note the puzzle id should be 4 Press the "Create a Tournament" button on the Main Menu Type "play1creator234" in the "Tournament Name" field Check the boxes next to puzzles 1, 2, 3, and 4. Click Create to create the tournament. Press the "Create a Tournament" button on the Main Menu Type "creator234" in the "Tournament Name" field Check the boxes next to puzzles 2, 3, and 4. Click Create to create the tournament. Press the "Create a Tournament" button on the Main Menu Type "creator2" in the "Tournament Name" field Check the boxes next to puzzle 2. Click Create to create the tournament. Press the "Create a Tournament" button on the Main Menu Type "creator3" in the "Tournament Name" field Check the boxes next to puzzle 3. Click Create to create the tournament. Click the logout button from the main menu Login to the "play" user again. Click the Join/Continue Tournament Button from the main menu. Click the Join Tournament button from the Tournament menu. Note which tournaments are available to join. Should be creator234, creator2, and creator3. Select creator234 as the tournament to join. Note the number at the end of the puzzle that pops up should end in 2 and by the creator2 puzzle. Solve the second puzzle by solving, playing or quitting. Click the Join/Continue Tournament Button from the main menu. Click the Join Tournament button from the Tournament menu. Note which tournaments are available to join. Should be just creator3.	When selecting a tournament to join the first time, play1creator234 was not in the list. The other 3 tournaments did show up as expected. When selecting a tournament to join the 2nd time, only creator3 was in the list as expect.	PASS

#	Category	Requirement	Functionality Under Test	Steps and inputs to exercise functionality	Results	Pass/Fail
49	Join Tournament	If the player opts for joining a new tournament, the game will show the player a list of tournaments that are currently available for him/her to join (i.e. all tournaments that contain (1) no puzzles created by the player and (2) at least one puzzle not yet played by the player). When the player chooses a tournament in the list, the game will display the first puzzle in the tournament.	Test that when the user selects a Tournament to join that the user is directed to the Play Puzzle screen with a Puzzle from that Tournament	Follow Test 5 to login to a existing different user On the main menu, click "Clear Application Data" Follow Test 2 to create a new user with username "creator" Follow Test 7 to create a puzzle with phrase "creator1", note the puzzle id should be 1 Follow Test 7 to create a puzzle with phrase "creator2", note the puzzle id should be 2 Follow Test 7 to create a puzzle with phrase "creator3", note the puzzle id should be 3 Press the "Create a Tournament" button on the Main Menu Type "creator123" in the "Tournament Name" field Check the boxes next to puzzles 1, 2, and 3. Click Create to create the tournament. Click the logout button from the main menu Follow Test 2 to create a new user with username "player" Click the Join/Continue Tournament Button from the main menu. Click the Join Tournament button from the Tournament menu. Select creator123 as the tournament to join. The puzzle that pops up should be the one ending in 1, 2 or 3.	Joining tournament "creator123" resulted in showing the puzzle screen with a puzzle ending in 1. Solving the puzzle showed it was creator1,	PASS
50	Continue Tournament	If the player opts for continuing a tournament they have already joined, the game will show the player a list of tournaments they are currently playing that still have puzzles not completed by the player. When the player chooses a tournament in the list, the game will display the first unsolved puzzle in that tournament.	Test that when the user selects to Continue Tournament they are shown a list of Tournaments that they have already joined and have at least one unplayed Puzzle	Follow Test 51. Solve the second puzzle by solving, playing or quitting. Click the Join/Continue Tournament Button from the main menu. Click the Continue Tournament button from the Tournament menu. Note that "creator123" should still be available for selection. Use the back button to get back to the main menu. Select Solve a Puzzle from the main menu. Note that the puzzle should be the only one left, "creator3" Solve the second puzzle by solving, playing or quitting. Click the Join/Continue Tournament Button from the main menu. Click the Continue Tournament button from the Tournament menu. Not that creator123 should not show up anymore since there are no more unplayed puzzles in the tournament	After playing the 2nd puzzle "Creator123" was still in the list of tournaments that could be continued. After playing the puzzle creator3 from the Solve a Puzzle menu, "creator123" no longer showed up in teh continue list.	PASS
51	Continue Tournament	If the player opts for continuing a tournament they have already joined, the game will show the player a list of tournaments they are currently playing that still have puzzles not completed by the player. When the player chooses a tournament in the list, the game will display the first unsolved puzzle in that tournament.	Test that when the user selects a Tournament to continue that the user is directed to the Play Puzzle screen with a Puzzle from that Tournament	Follow Test 49, Solve the first puzzle by solving, playing or quitting. Click the Join/Continue Tournament Button from the main menu. Click the Continue Tournament button from the Tournament menu. Select the "creator123" tournament from the list. Note the number at the end of the puzzle that comes up.	Was able to continue tournament "creator123". The puzzle that came up when continuing ended in 2. This was the 2nd puzzle from the tournament,	PASS
52	Statistics	When a player opts to view the puzzle statistics, the game will show four pieces of information: The list of puzzles completed by that player with, for each puzzle, the prize the player won (including \$0 for puzzles he/she quit or did not successfully solve). The list of tournaments completed by that player with, for each tournament, the prize the player won. The complete list of puzzles with, for each puzzle, (1) the number of players who played it and (2) the top prize won by a player for that puzzle, together with the username of the player. The complete list of tournaments with, for each tournament, (1) the number of players who completed the tournament and (2) the top prize won by a player for that tournament, together with the username of that player.	Test that when the user selects View Statistics from the Main Menu they are given the option to view "My Puzzle Stats", "My Tournament Stats", "Puzzle Stats" or "Tournament Stats"	Follow Test 2 to create a user or Follow Test 5 to login to an existing user On the main menu screen click "View Statistics"	User is navigated to a screen with options to view: - "My Puzzle Stats" - "My Tournament Stats" - "Puzzle Stats" - "Tournament Stats"	PASS
53	Statistics	When a player opts to view the puzzle statistic, the game will show the list of puzzles completed by that player with, for each puzzle, the prize the player won (including \$0 for puzzles he/she quit or did not successfully solve).	Test that when the user selects to view My Puzzle Stats they are shown a list of Puzzles they've completed	Follow Test 5 to login to an existing user On the main menu, click "Clear Application Data" Follow Test 7 to create a puzzle with phrase "abc123" Follow Test 7 to create a puzzle with phrase "test101" Follow Test 2 to create a different user or Follow Test 5 to login to a existing different user Press the "Solve a Puzzle" button on the Main Menu Type "abc123" or "test101" into the "Enter Your Guesses Here" field Click "Solve the Puzzle" On the main menu click "Solve a Puzzle" In the game screen, click "Back to Main Menu" and click "Exit to main menu" in the dialogue box On the main menu, click "View Statistics" Click "My Puzzle Stats"	Only 2 puzzles will populate with the puzzle's corresponding uniqueID and the user's Total Prize value	PASS

#	Category	Requirement	Functionality Under Test	Steps and inputs to exercise functionality	Results	Pass/Fail
54	Statistics	When a player opts to view the puzzle statistics, the game will show the list of puzzles completed by that player with, for each puzzle, the prize the player won (including \$0 for puzzles he/she quit or did not successfully solve),	Test that when the user selects to view My Puzzle Stats each stat shows the completed Puzzle ID and the prize they earned for that Puzzle	Follow Test 5 to login to an existing user On the main menu, click "Clear Application Data" "Follow Test 7 to create a puzzle with phrase "abc123!" "Follow Test 7 to create a puzzle with phrase "test101" Follow Test 2 to create a different user or Follow Test 5 to login to a existing different user Press the "Solve a Puzzle" button on the Main Menu Type "abc123" or "test101" into the "Enter Your Guesses Here" field Click "Solve the Puzzle" On the main menu click "Solve a Puzzle" In the game screen, click "Back to Main Menu" and click "Exit to main menu" in the dialog box On the main menu, click "View Statistics" Click "My Puzzle Stats"	Only 2 puzzles will populate with the puzzle's corresponding uniqueID and the user's Total Prize value One puzzle will have a Total Prize value of \$0	PASS
55	Statistics	When a player opts to view tournament statistics, the game will show the list of tournaments completed by that player with, for each tournament, the prize the player won	Test that when the user selects to view My Tournament Stats they are shown a list of Tournaments they've completed	Follow Test 48, Select creator3 from the list of tournaments. Solve the puzzle by solving, playing or quitting. On the main menu, click "View Statistics" Click "My Tournament Stats" The only tournament in the list should be creator3 with the score. Since creator2 was never joined it isn't in the list and creator234 is not yet complete. Follow Test 55, making note of the total prize for each puzzle solved.	Only tournament creator3 showed up in the list. The prize value was 0 since I quit puzzle 3 before solving.	PASS
56	Statistics	When a player opts to view tournament statistics, the game will show the list of tournaments completed by that player with, for each tournament, the prize the player won	Test that when the user selects to view My Tournament Stats each stat shows the completed Tournament name and the total prize they earned for that Tournament	From the main menu select Join/Continue Tournament, Select creator234 from the list, Solve the puzzle by solving, playing or quitting. Make note of the total prize for this puzzle. On the main menu, click "View Statistics" Click "My Tournament Stats" Both creator234 and creator3 should show up in the list. Prizes should match the sum of the values of the puzzles from each tournament.	Solved puzzle 2 with 0, Solved puzzle 3 with 2500, Solved puzzle 4 with 1000, creator3 had value of 2500 in stats report, creator234 had value of 3500 in stats report,	PASS
57	Statistics	When a player opts to view puzzle statistics, the game will show the complete list of puzzles with, for each puzzle, (1) the number of players who played it and (2) the top prize won by a player for that puzzle, together with the username of that player.	Test that when the user selects to view Puzzle Stats they are shown a list of all Puzzles	Follow Test 56 On the main menu, click "View Statistics" Click "Puzzle Stats" There should be 4 puzzles in the list.	All four puzzles show up in the report.	PASS
58	Statistics	When a player opts to view puzzle statistics, the game will show the complete list of puzzles with, for each puzzle, (1) the number of players who played it and (2) the top prize won by a player for that puzzle, together with the username of that player.	Test that when the user selects to view Puzzle Stats each stat shows the completed Puzzle name, the number of players who played it, the highest prize earned on the Puzzle, and the name of the Player who earned the highest prize	Follow Test 56 On the main menu, click "View Statistics" Click "Puzzle Stats" There should be 4 puzzles in the list.	Solved puzzle 1 with 1300. Solved puzzle 2 with 0, Solved puzzle 3 with 2500, Solved puzzle 4 with 1000, Puzzle 1 has 1 player played play - 1300 as max Puzzle 2 has 1 player played creator - 0 as max Puzzle 3 has 1 player played creator - 2500 as max Puzzle 4 has 1 player played creator - 1000 as max	PASS
59	Statistics	When a player opts to view puzzle statistics, the game will show the complete list of puzzles with, for each puzzle, (1) the number of players who played it and (2) the top prize won by a player for that puzzle, together with the username of that player.	Test that when the user selects to view Puzzle Stats any Puzzle that hasn't been played will display with default values	Follow Test 56 On the main menu, click "View Statistics" Click "Puzzle Stats"	The created Puzzle's uniqueID should appear in the list with the following values: Number of Players: 0 Top Score: Unplayed - \$0	PASS
60	Statistics	When a player opts to view tournament statistics, the game will show the complete list of tournaments with, for each tournament, (1) the number of players who completed the tournament and (2) the top prize won by a player for that tournament, together with the username of that player.	Test that when the user selects to view Tournament Stats they are shown a list of all Tournaments	Follow Test 41 to create a Tournament named "testing" On the main menu, click "View Statistics" Click "Tournament Stats" Follow Test 60 Select testing from the list of tournaments, Solve the puzzle by solving, playing or quitting making note of the prize scored on the puzzle	The only tournament in the list should be "testing"	PASS
61	Statistics	When a player opts to view tournament statistics, the game will show the complete list of tournaments with, for each tournament, (1) the number of players who completed the tournament and (2) the top prize won by a player for that tournament, together with the username of that player.	Test that when the user selects to view Tournament Stats each stat shows the completed Tournament name, the number of Players who played it, the highest total prize earned on the Tournament, and the name of the Player who earned the highest prize	Follow Test 41 to create a Tournament named "testing" On the main menu, click "View Statistics" Click "Tournament Stats" Logout of the app Login with a different user or create a new user Select testing from the list of tournaments, Solve the puzzle by solving, playing or quitting making note of the prize scored on the puzzle On the main menu, click "View Statistics" Click "Tournament Stats"	The Tournament "testing" should appear in the list with the following values: Number of Players: 2 Top Score: <value1> - \$<value2> Where value1 is the username of the Player with the higher score and value2 is the higher prize of the two scores	PASS
62	Statistics	When a player opts to view tournament statistics, the game will show the complete list of tournaments with, for each tournament, (1) the number of players who completed the tournament and (2) the top prize won by a player for that tournament, together with the username of that player.	Test that when the user selects to view Tournament Stats any Tournament that hasn't been played will display with default values	Follow Test 41 to create a Tournament named "testing2" On the main menu, click "View Statistics" Click "Tournament Stats"	The Tournament "testing2" should appear in the list with the following values: Number of Players: 0 Top Score: Unplayed - \$0	PASS