**ALGORITHM(S)**

1. Create Keyboard
   1. Create a button for each letter on row 1
   2. Create a button for each letter on row 2
   3. Create a button for each letter on row 3
   4. Create a Reset button(refreshes the page)
   5. Put dashes on the screen
2. Choose a word from the word list at random
3. Determine Distance
   1. Find the position of the shark
   2. Find the position of the fish
   3. Calculate the distance between them
   4. Divide that distance by the number of different letters in the chosen word
4. Wait for guesses
   1. When the user clicks a key, do the following:
      1. Determine the letter they chose
      2. Check if that letter is in the word
      3. If it is:
         1. Redisplay the word, and a correct guess message
      4. If it isn’t:
         1. Redisplay the word, and an incorrect message
      5. Move the shark to the left the distance determined
      6. If the user has made a number of guesses equal to the number of letters in the word, make the shark’s mouth open
      7. If the user has guessed all the letters:
         1. Finish the game with the “win” option
      8. Otherwise, if the user has reached the maximum number of guesses:
         1. Finish the game with the “lose” option
      9. Otherwise:
         1. Go back to the beginning of step 4
5. Finish Game
   1. Disable the keyboard
   2. “win” option:
      1. Change the word to green
      2. Display a message depending on the number of guesses it took the user
      3. Flip the shark around
      4. If the number of guesses it took the user is the lowest amount possible, make the shark cry
   3. “lose” option:
      1. Change the word to red
      2. Make the shark’s mouth closed
      3. Move the shark to cover the fish
      4. Display the loss message

**HTML ELEMENTS/IDs**

**Div/InfoBar**

**Div/guesses**

**Div/messages**

**Div/shark**

**Div/left**

**Img/sharkie**

**Img/fishie**

**Div/wordZone**

**p/word**

**div/keyboard**

**VARIABLES/CONSTANTS**

VariableName (data type)

**Words (array)**

**chosenIndex (int)**

**chosenWord (string)**

**word (array)**

**progress (array)**

**guesses (int)**

**prevMessage (int)**

**incorrectMessages (array)**

**correctMessages (array)**

**shark (element)**

**fish (element)**

**sharkPos ( dict)**

**fishPos (dict)**

**count (int)**

**minGuesses (int)**

**maxGuesses (int)**

**distance (float) (constant)**

**keyboard (element)**

**htmlCode (string)**

**row1 (array)**

**row2 (array)**

**row3 (array)**

**index (int)**

**curr (string)**

**key (value)**

**isCorrect (Boolean)**

**element (element)**

**left (element)**

**currLeft (style.width)**

**newLeft (style.width)**

**sharkImg (element)**

**wordField (element)**

**guessesField (element)**

**messagesField (element)**

**chars (string)**

**message (string)**

**keys (array)**

**wordHighlight (element)**

**top (float)**

**left (float)**

**width (float)**

**height (float)**

**x (float)**

**y (float)**

**TEST DATA – 5 complete data sets**

You can place in Excel file if you embed into Word and submit the Excel file

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Word(Random word that is chosen by the program)** | **Input (Key)** | **Process (isCorrect = true/false)** | **Process (gameFinished = true/false)** | **Process (User Won = true/false)** | **Output (Expected Results)** |
| Shorebird | R  S  T  I  X  N  E  O  P  H  D  B | True  True  False  True  False  False  True  True  False  True  True  True | False  False  False  False  False  False  False  False  False  False  False  True | True | ---------  Correct!  ---R---R-  Correct!  S--R---R-  Incorrect.  S--R---R-  Correct!  S--R--IR-  Incorrect.  S--R--iR-  Incorrect.  S--R--iR-  Correct!  S--RE-IR-  Correct!  S-ORE-IR-  Incorrect.  S-ORE-iR-  Correct!  SHORE-iR-  Correct!  SHORE-iRD  Incorrect.  SHORE-IRD  Incorrect.  SHORE-IRD  Correct!  SHOREBIRD  You barely saved the fish. |
| Salty | E  R  S  L  O  A  T  Y | False  False  True  True  False  True  True  True | False  False  False  False  False  False  False  True | True | -----  Incorrect.  -----  Incorrect.  -----  Correct!  S----  Correct!  S-L--  Incorrect.  S-L--  Correct!  SAL—  Correct!  SALT-  Correct!  Salty  Cutting it close, but you got there! |
| Shore | R  Q  W  Z  X  Y  K  J  D  P  T | True  False  False  False  False  False  False  False  False  False  False | False  False  False  False  False  False  False  False  False  False  True | False | -----  Correct!  ---R-  Incorrect.  ---R-  Incorrect.  ---R-  Incorrect.  ---R-  Incorrect.  ---R-  Incorrect.  ---R-  Incorrect.  ---R-  Incorrect.  ---R-  Incorrect.  ---R-  Incorrect.  ---R-  Incorrect.  ---R-  SHORE  The shark got a meal! You lose. |
| Tiller | A  E  R  W  T  O  U  Q  D  G  H  V | False  True  True  False  True  False  False  False  False  False  False  False | False  False  False  False  False  False  False  False  False  False  False  False | False | ------  Incorrect.  ------  Correct!  ----E-  Correct!  ----ER  Incorrect.  ----ER  Correct!  T---ER  Incorrect.  T---ER  Incorrect.  T---ER  Incorrect.  T---ER  Incorrect.  T---ER  Incorrect.  T---ER  Incorrect.  T---ER  Incorrect.  T---ER  TILLER  The shark got a meal! You lose. |
| Beach | A  B  E  C  H | True  True  True  True  True | False  False  False  False  True | True | Correct!  --A--  Correct!  B-A--  Correct!  BEA--  Correct!  BEAC-  Correct!  BEACH  Great Guessing! You Won! |

CODE

Up to a 10-point deduction for uncommented code

Up to a 20-point deduction if applications does not execute