Wordle

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What is Wordle?

Examples

W is in the word and in the correct spot.

I is in the word but in the wrong spot.

U is not in the word in any spot.

Model

Game

Attributes:

Size, player(),

board(),
word_to_guess

Methods:

get_all_words_of_size

pick_word_to_guess

check_win check_loss

is_valid_guess

get_guess_graded

play_again

Player

Attributes:

lives_start

lives_left

Methods:

life_lost

Get_lives_left

reset_lives

Board

Class Attributes:

Empty_Slot

Attributes:

Size player

board

Methods:

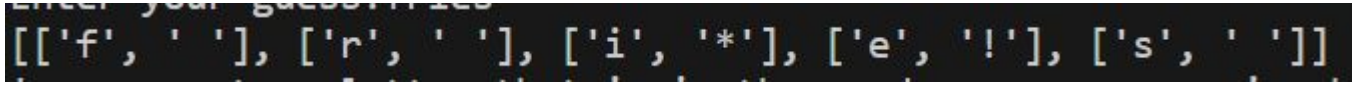
Update_board

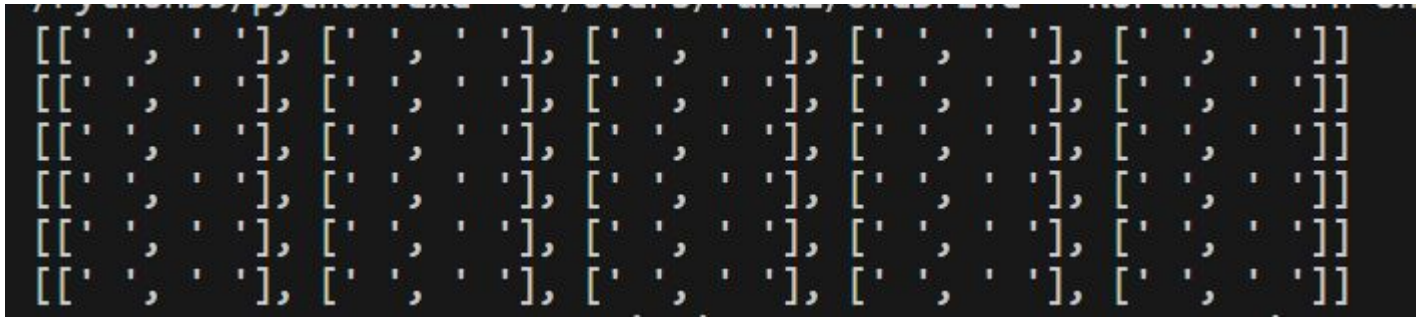
Clear_board

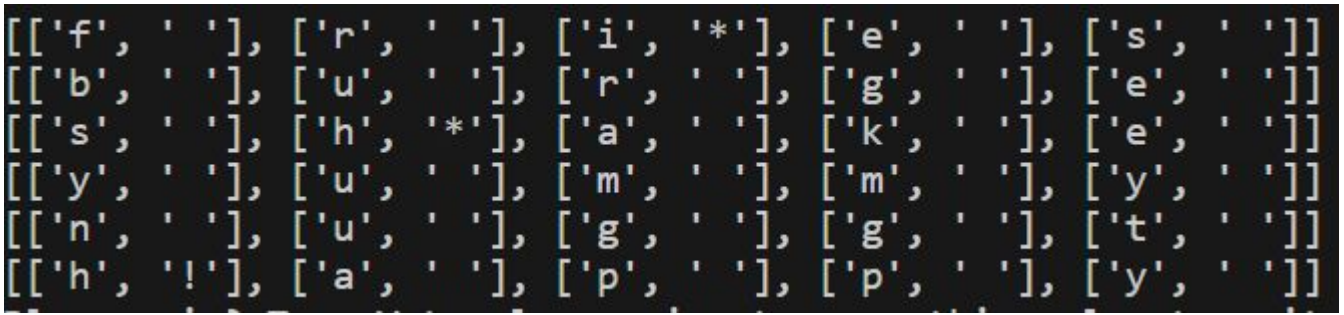
```
def get_all_words_of_size(self)->list:
    """This method takes in a requested size of

    Args:
        size (int): the size of the board, of t

    Returns:
        words_to_guess (list): A list of all th
    """
    words_to_guess = []
    with open('1-1000.txt','r') as file:
        for line in file:
            word = line.strip('\n')
            if len(word) == self.size:
                words_to_guess.append(word)
    return words_to_guess
```

```
def pick_word_to_guess(self,words_to_guess:list):
    """This method picks a random word for the playe

    Args:
        words_to_guess (list): A list of words from

    Returns:
        word (str): The word the user has to guess c
    """
    index = random.randint(1,len(words_to_guess)) #r
    self.word_to_guess = words_to_guess[index]
    return words_to_guess[index]
```

```
def get_guess_graded(self,word,guess):
    """This method takes a string representing the players gues
    it then compares each index of the two strings and returns
    ! represents a partially correct answer (right letter, wror
    * represetns a correct answer (right letter, right spot)

    Args:
        word (str): A string, the players guess
        guess (str): A string, the word the player is trying to

    Returns:
        graded_word (list of lists): A list of lists. The inner
    """
    graded_word = []
    for i in range(self.size):
        graded_word.append(['','']) #creates empty double list
    for i in range(self.size): #fills based on correctness
        if guess[i] not in word:
            graded_word[i] = [guess[i],self.board.EMPTY_SLOT]
        elif guess[i] in word and guess[i] != word[i]:
            graded_word[i] = [guess[i],'!']
        elif guess[i] in word and guess[i] == word[i]:
            graded_word[i] = [guess[i],'*']
    return graded_word
```







Top: graded word, Middle: Board (empty), Bottom: Board (full)

View

BoardView

Attributes:

board

Methods:

display

GameView

Attributes:

BoardView

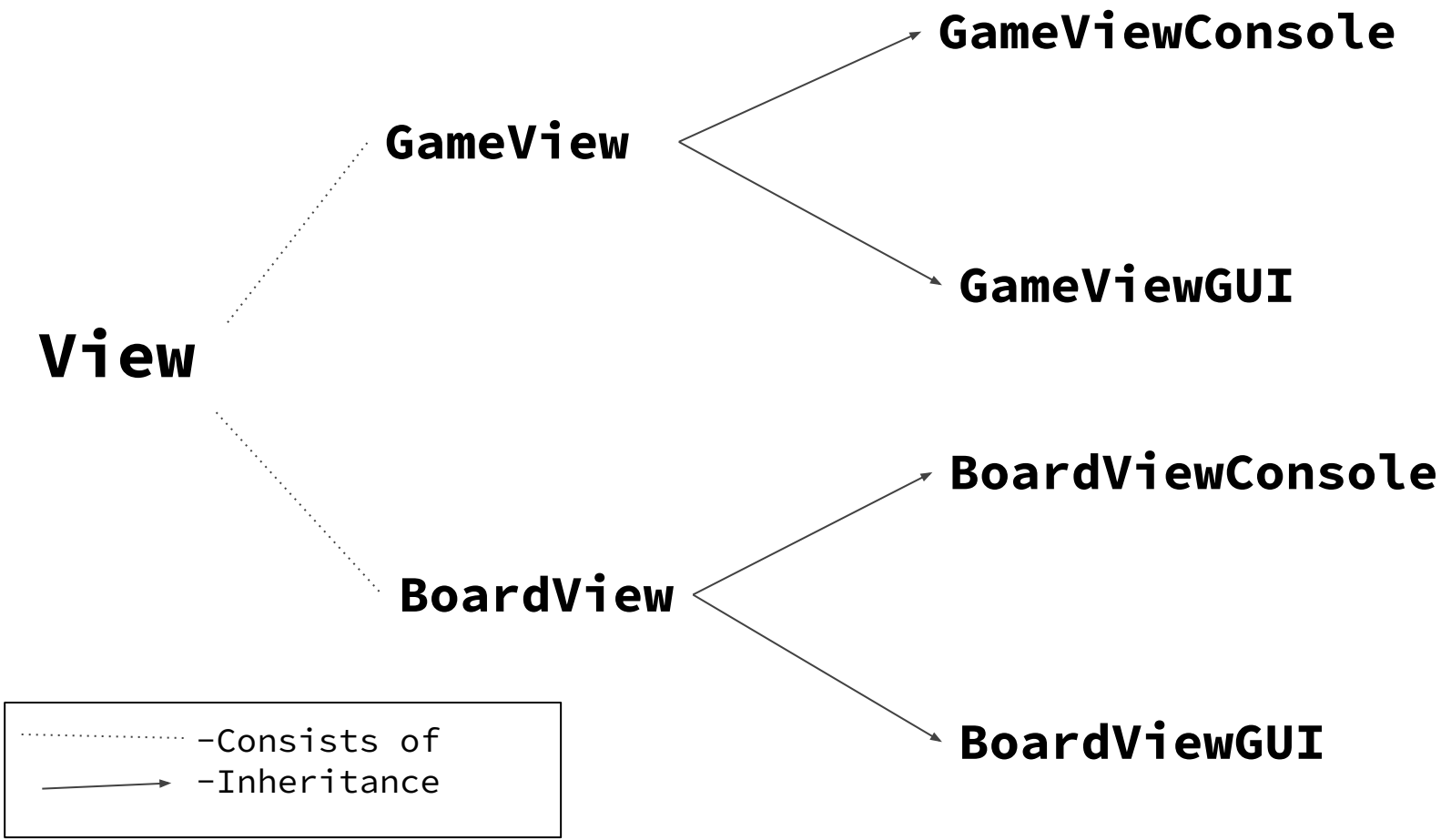
Player

Methods:

Update_board

Clear_board

Both Classes are Abstract!


GameViewConsole
GameView
GameViewGUI
View
BoardViewConsole
BoardView
BoardViewGUI
-Consists of
-Inheritance

```
class BoardViewConsole(BoardView):
  """This class is a child class of the BoardView class. I
  """
  def __init__(self, board: board) -> None:
    """This method initializes an instance of the BoardVie

    Args:
        board (board): A instance of the board class from
    """
    super().__init__(board)

  def display(self):
    """This method displays the board in the console with
    """
    print('! represents a letter that is in the word you a
    print('* represents a letter that is also in the word
    rounds = self.board.player.lives_start
    size = self.board.size
    for i in range(rounds):
      print('____'*size)
      print()
      for j in range(size):
        print(self.board.board[i][j][0],end='   ')
      print()
      for j in range(size):
        print(self.board.board[i][j][1],end='   ')
      print()
    print('____'*size)
```

BoardViewTerminal.display

```
! represents a letter that is in the word you are guressing but incorrect spot
* represents a letter that is also in the word you are trying to guess AND is in the correct spot
____________________

f   r   i   e   s
            !
____________________

t   r   a   s   h
*       !
____________________




____________________




____________________




____________________
```

```
def display(self):
    """This method displays the board on the root window of the tkinter GUI. It takes in the the amount of lives th
    from an instance of the player class and the board from an instance of the board class to display the board
    """
    for i in range(self.board.player.lives_start):
        for j in range(self.board.size):
            if self.board.board[i][j][1] == self.board.EMPTY_SLOT:
                Grade = self.INCORRECT
            elif self.board.board[i][j][1] == '!':
                Grade = self.PARTIAL_CORRECT
            elif self.board.board[i][j][1] == '*':
                Grade = self.CORRECT
            label = tk.Label(self.root, text=f"{self.board.board[i][j][0]}",bg=Grade[0],fg=Grade[1], borderwidth=1,
            label.grid(row=i+1, column=j,sticky='nsew',padx=0.5,pady=1)
    for i in range(self.board.player.lives_start):
        self.root.grid_rowconfigure(i, weight=1)
    self.root.grid_rowconfigure(self.board.player.lives_start, weight=1)
    for j in range(self.board.player.lives_start):
        self.root.grid_columnconfigure(j, weight=1)
```

BoardViewGUI.display

f	r	i	e	s
t	r	a	s	h

Controller

GameController

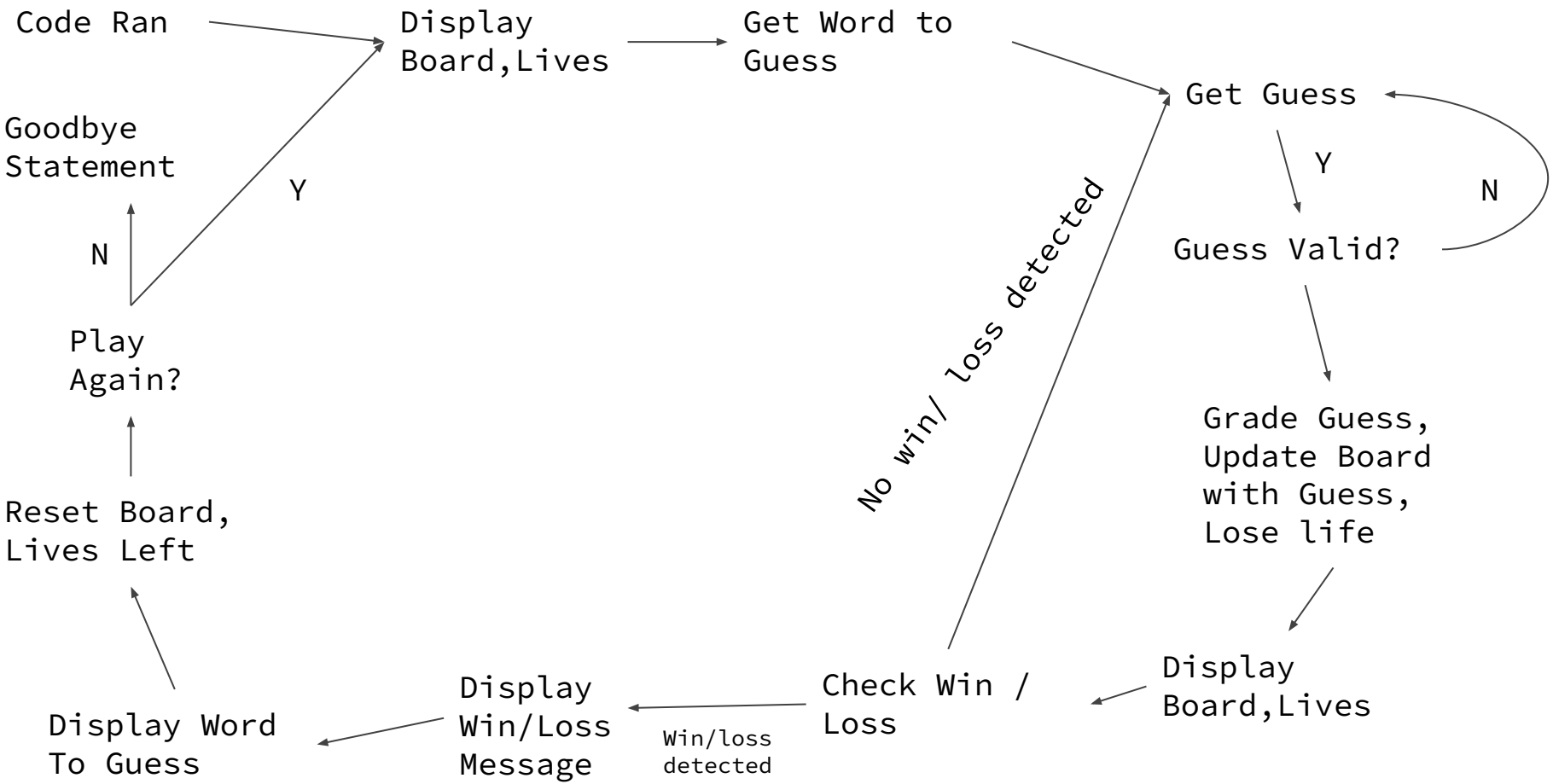
Attributes:

game

game.view

Methods:

Run_game


Code Ran
Display Board,Lives
Get Word to Guess
Get Guess
Y
N
Guess Valid?
Grade Guess, Update Board with Guess, Lose life
Display Board,Lives
Check Win / Loss
No win/ loss detected
Win/loss detected
Display Win/Loss Message
Display Word To Guess
Reset Board, Lives Left
Play Again?
N
Y
Goodbye Statement

```python
def run_game(self):
  """This method is in charge of running the game by calling methods defined by the model and view.
  """

  #GAME LOOP BEGINS HERE

  while True: #This while loop allows the game to loop until the player chooses to not play anymore

    #The first thing the game does is display the board, lives, and chooses a word the player needs to guess
    self.view.display_board()
    self.view.display_lives()
    word_to_guess = self.model.pick_word_to_guess(self.model.get_all_words_of_size())
    #above lines stores word to guess that was chosen randomly by the game


    #GUESSING PROCESS LOOP BEGINS HERE

    while True: #This while loop begins the guessing process for the player. It continues until the player runs out of lives

      #This code gets a valid guess from the user based on the current view method chosen
      guess = self.view.get_guess()
      while not self.model.is_valid_guess(guess): #does not let program progress until valid guess is given
        self.view.display_invalid_guess()
        guess = self.view.get_guess() #stores guess as guess var

      #This code grades the guess, displays the guess and its grade on the board and takes away one life from the player
      guess = self.model.get_guess_graded(word_to_guess,guess)
      self.model.board.update_board(guess)
      self.model.player.life_lost()
```

```
    #displays the above changes via the view to the player
    self.view.display_board()
    self.view.display_lives()

    #checks to see if the last guess made by the player was the correct guess, or if player is out of lives
    if self.model.check_win(guess):
        self.view.display_win() #displays win
        #if it is breaks out of the guessing process loop
        break
    elif self.model.check_loss(): #if player is out of lives displays loss and breaks out of guessing process loop
        self.view.display_loss()
        break

#GUESSING PROCESS LOOP ENDS HERE

#displays the board one last time for the player to see proof of there win or loss
self.view.display_board()
#displays the correct word to the player
self.view.display_word_to_guess(word_to_guess)


#asks the player if they would like to play again, and resets the board and the player lives
ans = self.view.display_play_again()
self.model.board.clear_board()
self.model.player.reset_lives()
```

```
  #if the answer is no a goodbye message is show and the game loop is broken out of
  if not self.model.play_again(ans):
    self.view.say_goodbye()
    break #game loop broken out of, quittting game

# GAME LOOP ENDS HERE
```

Main

```python
#this is the main file is in charge of connecting the various classes together to allow

from model.game import game
from view.game_view_terminal import GameViewConsole #sets the view to be the terminal vi
from view.board_view_terminal import BoardViewConsole
from controller.game_controller import GameController

model = game()
board_view = BoardViewConsole(model.board)
view = GameViewConsole(board_view,model.board.player)

controller = GameController(model, view)
controller.run_game()
```

```python
#this main file is in charge of connecting the various classes of the game together to
import tkinter as tk
from model.game import game
from view.game_view_GUI import GameViewGUI #sets view to be GUI child classes of view
from view.board_view_GUI import BoardViewGUI
from controller.game_controller import GameController


model = game()
root = tk.Tk()
root.geometry(str(model.board.size*100)+'x'+str(model.board.player.lives_start*50))
root.title("Wordle Board")
board_view = BoardViewGUI(model.board,root)
view = GameViewGUI(board_view,model.board.player,root)

controller = GameController(model, view)
controller.run_game()
root.mainloop()
```

Final Result: Terminal

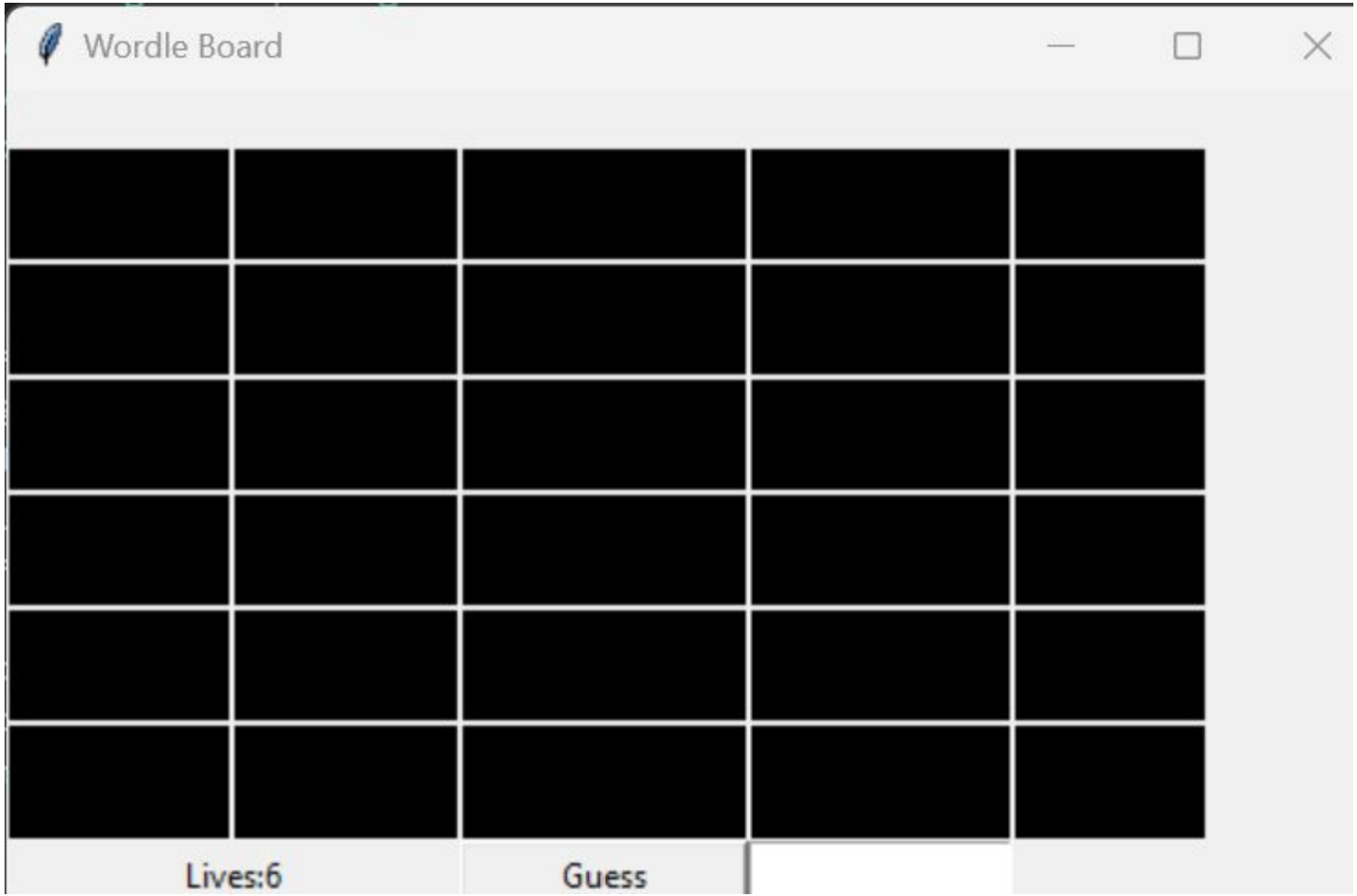
```
! represents a letter that is in the word you are guessing but incorrect spot
* represents a letter that is also in the word you are trying to guess AND is in the correct spot
_____________________


_____________________


_____________________


_____________________


_____________________


_____________________


_____________________
You have 6 attempts left to guess the word
```

```
You guessed the word!
! represents a letter that is in the word you are guressing but incorrect spot
* represents a letter that is also in the word you are trying to guess AND is in the correct spot
____________________

a   d   i   e   u
!

____________________

t   h   a   r   e
!       *   *

____________________

s   m   a   r   t
*       *   *   *

____________________

s   n   a   r   t
*       *   *   *

____________________

s   t   a   r   t
*   *   *   *   *

____________________



____________________
The word was  start
Play again? Type Y to play again, type anything else to exit gameY
```

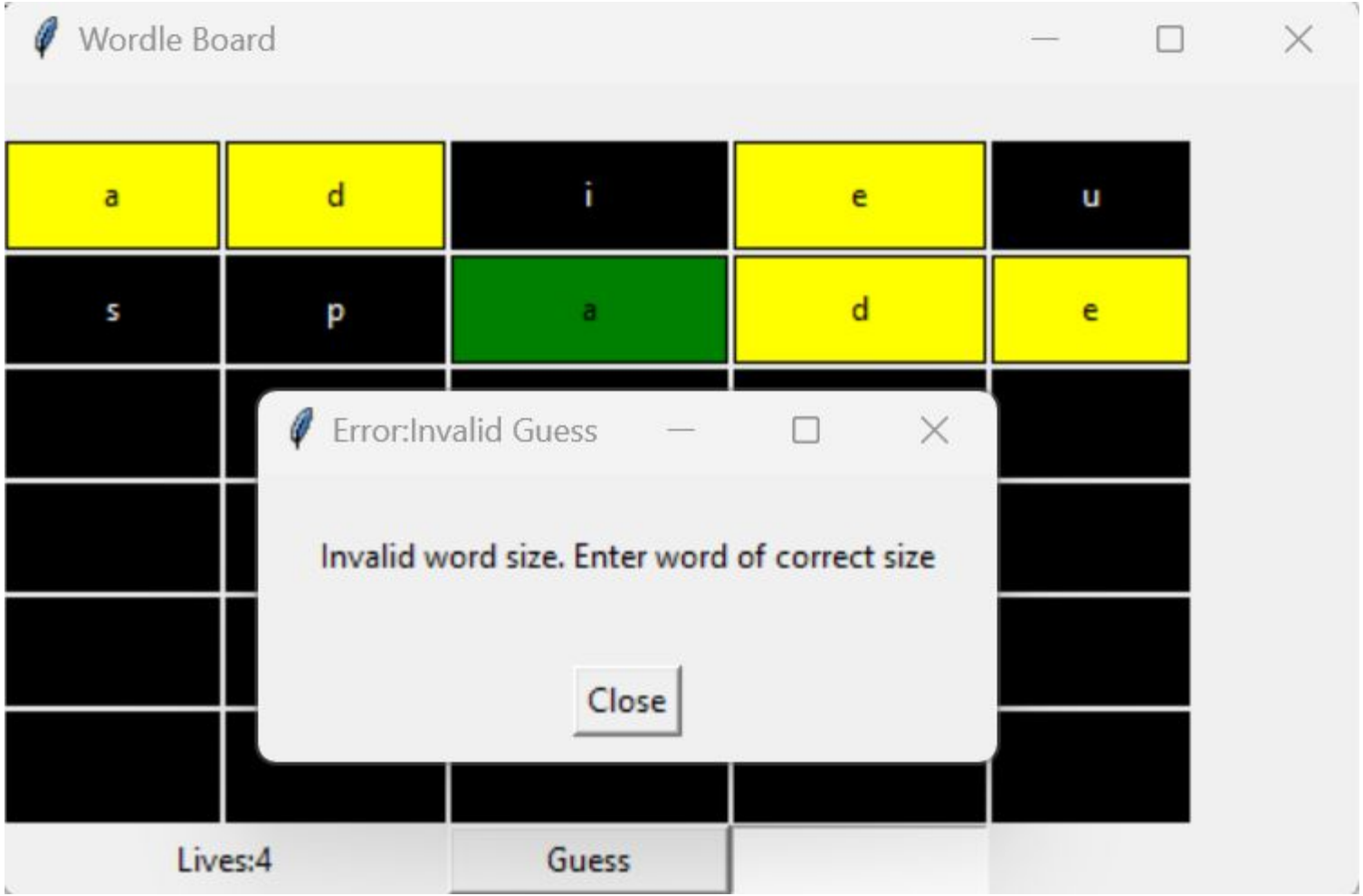
```
The word was  start
Play again? Type Y to play again, type anything else to exit gameY
! represents a letter that is in the word you are guressing but incorrect spot
* represents a letter that is also in the word you are trying to guess AND is in the correct spot
_____________________



_____________________



_____________________



_____________________



_____________________



_____________________



_____________________
You have 6 attempts left to guess the word
Enter your guess:wordle
Guess is not of correct length! Input new guess!
Enter your guess:trash
```

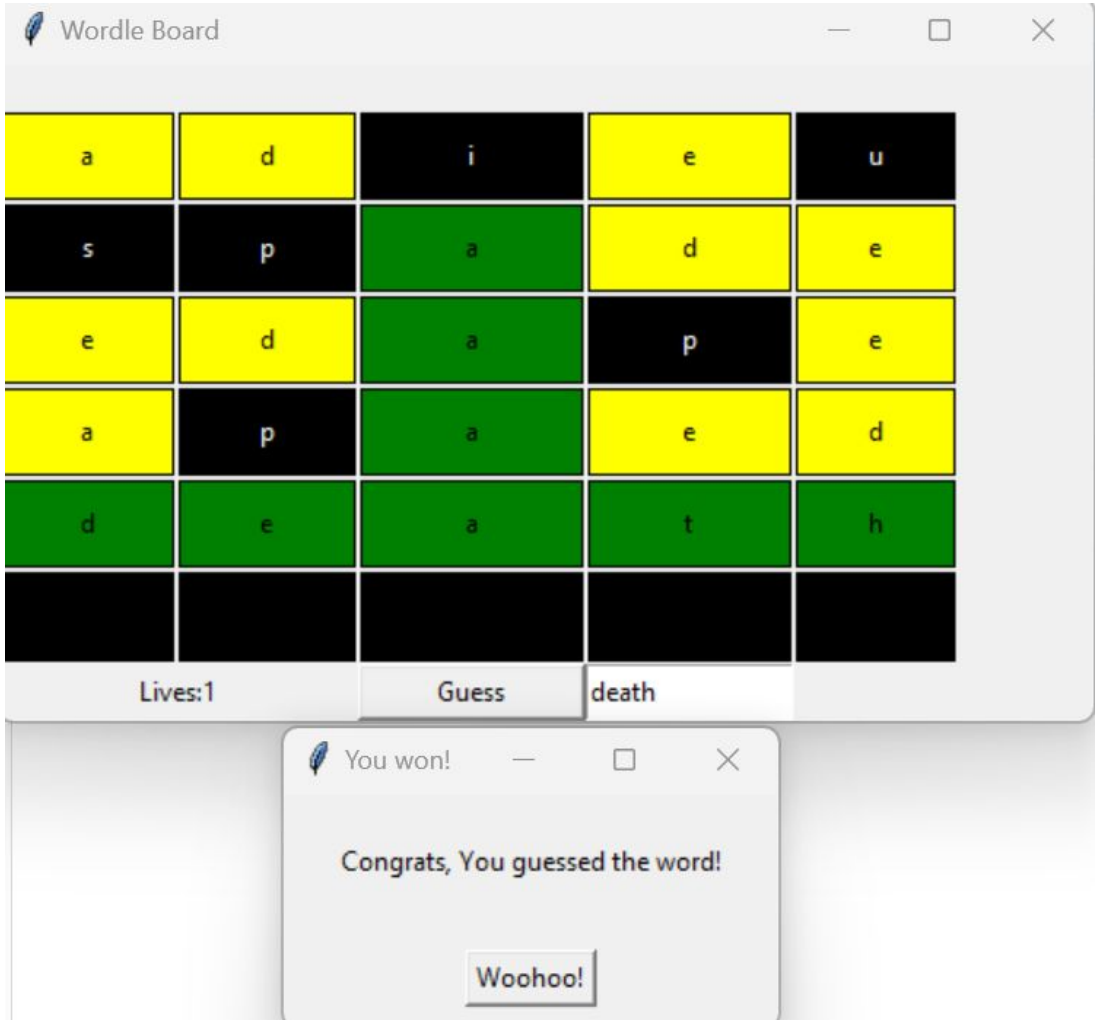
```
____________________
You have 0 attempts left to guess the word
Out of attempts. Game over!
! represents a letter that is in the word you are guressing but incorrect spot
* represents a letter that is also in the word you are trying to guess AND is in the correct spot
____________________

t   r   a   s   h
*           !

____________________

t   r   a   s   h
*           !

____________________

t   r   a   s   h
*           !

____________________

t   r   a   s   h
*           !

____________________

t   r   a   s   h
*           !

____________________

t   r   a   s   h
*           !

____________________
The word was  thing
Play again? Type Y to play again, type anything else to exit gamen
Goodbye!
```

Final Result: GUI


Wordle Board
Lives:6
Guess


Wordle Board
a
d
i
e
u
s
p
a
d
e
Lives:4
Guess
pla

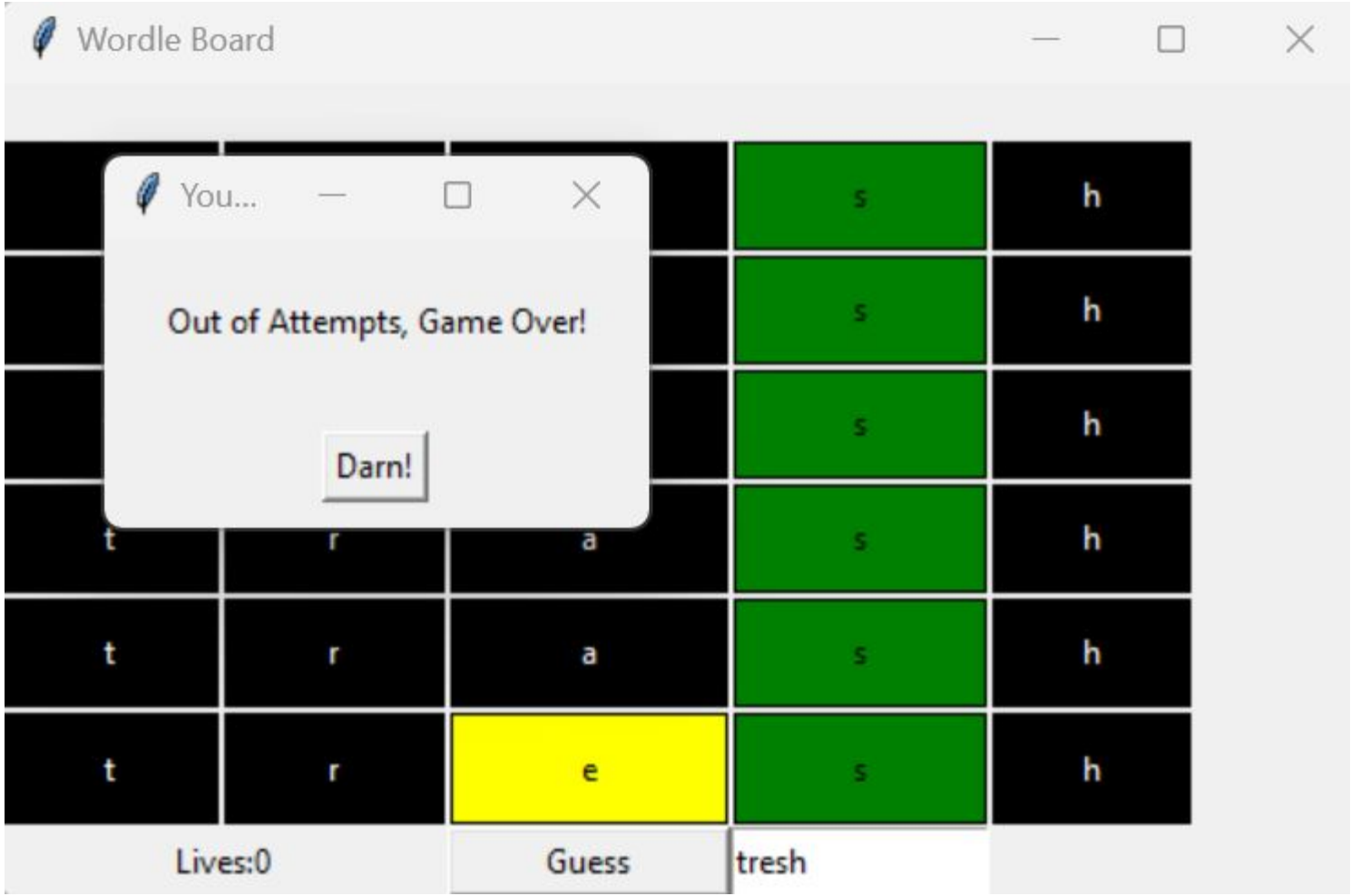

Wordle Board
a
d
i
e
u
s
p
a
d
e
Error:Invalid Guess
Invalid word size. Enter word of correct size
Close
Lives:4
Guess

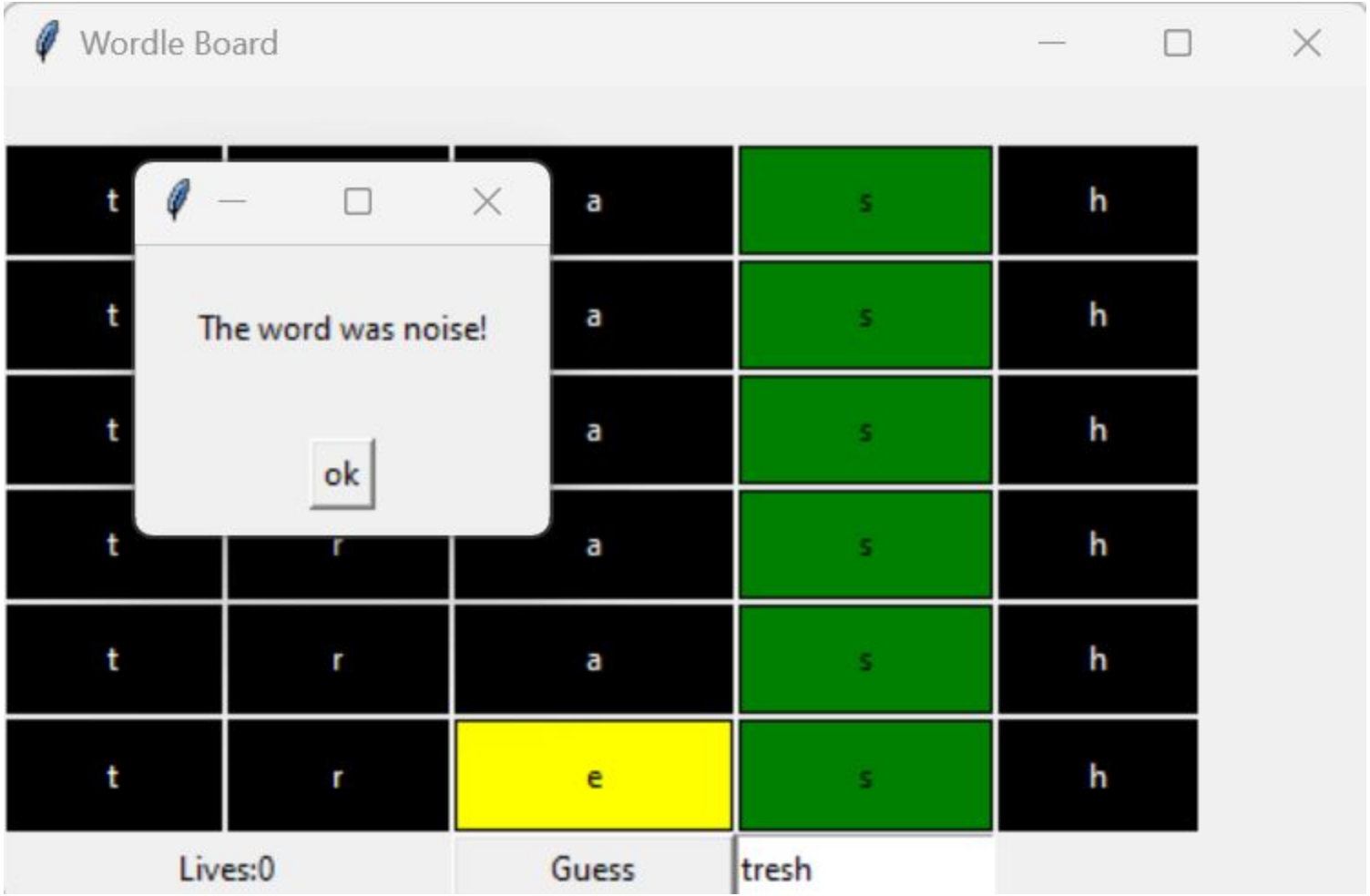

Wordle Board
a d i e u
s p a d e
e d a p e
a p a e d
d e a t h
Lives:1
Guess
death
You won!
Congrats, You guessed the word!
Woohoo!


Wordle Board
i
e
u
a
d
e
a
p
e
a
e
d
d
e
a
t
h
The word was death!
ok
Lives:1
Guess
death

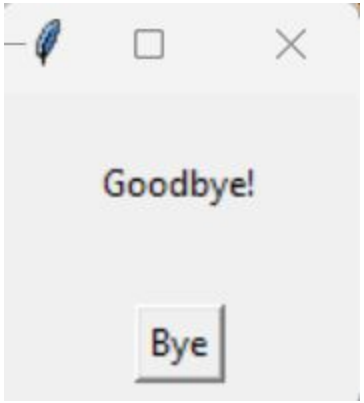

Wordle Board
a
d
i
s
p
a
e
d
a
a
p
a
d
e
a
Lives:1
Guess
death
Con...
Would you like to play again?
Yes
No


Wordle Board
Lives:6
Guess


Wordle Board
You...
Out of Attempts, Game Over!
Darn!
s
h
t
r
a
e
Lives:0
Guess
tresh


Wordle Board
The word was noise!
ok
t a s h
t a s h
t a s h
t r a s h
t r a s h
t r e s h
Lives:0
Guess
tresh


Wordle Board
Con...
Would you like to play again?
Yes
No
t r h
t r h
t r h
t r h
t r h
t r e s h
Lives:0
Guess
tresh


Goodbye!
Bye

Questions?