



CS1025

Web Application Development

Wheel of Fortune Web-based Game

(Excluding Cover Page – 13Pages, 1469 Words)

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Introduction

Wheel of Fortune is a game which is based on Hangman. Each game will be a blank word puzzle, and let player guess each blank a letter in the answer, and punctuation revealed as needed. So, the aim of the game is player try to guess what the secret word is by limit chances.

When the player starts the web game, the game will read the word table and pick up a secret word randomly, and then it will create a temporary blank which base on how long the secret word is. After user click play, the web will show the template and a dialog to let user enter a guessing letter each time, if user enter any invalid input, game will show different error message which is depended on what kind of invalid input user enter. If the guess letter is wrong, user will lose a life. If the guessing letter is correct, the template will show the letter in the correct places. User will win if user can guess all the letters and does not lose all five lives. Otherwise, user will lose the game.

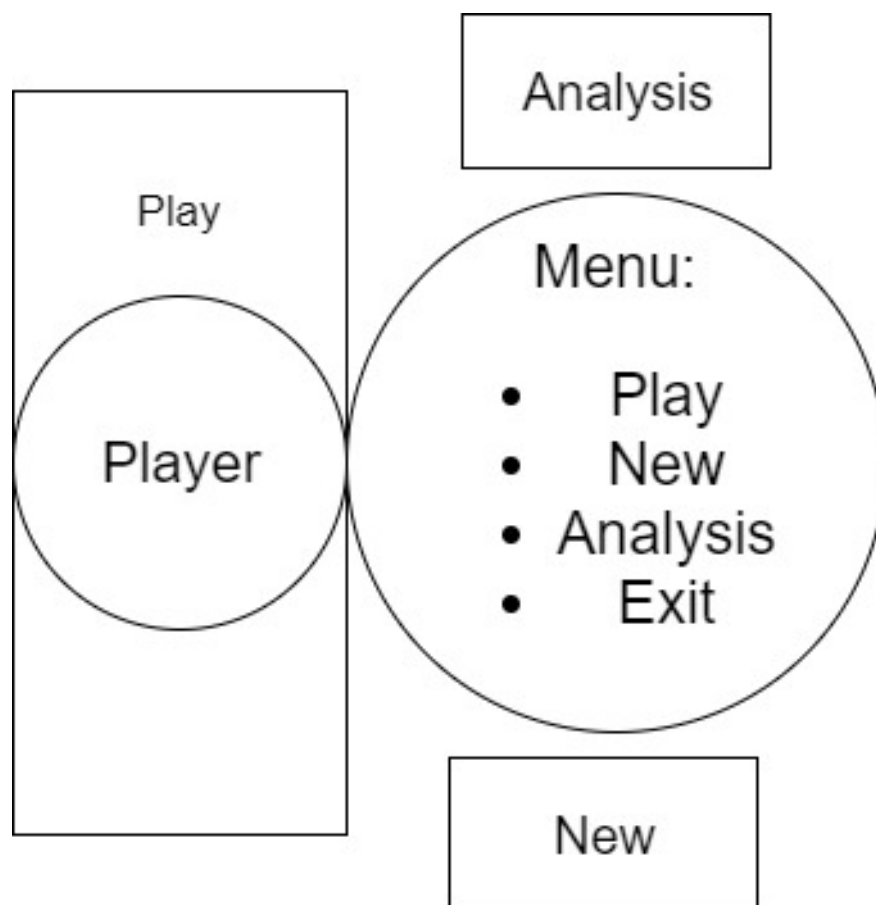
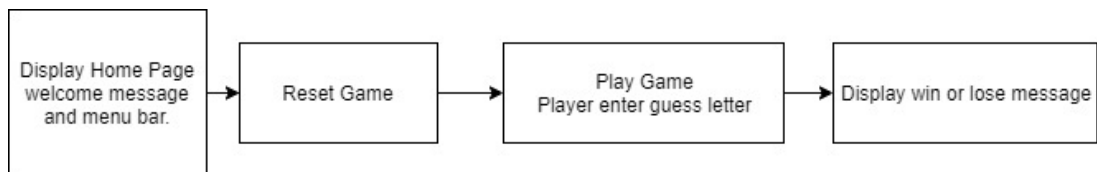
Body-Design

Design: Game

Goals	Tasks	Actions (Input)	Feedback (Output)
Establish players Establish left lives Establish player win or lose Establish analysis	Read the words from a file. Choose secret word randomly. Check if player enter letter is in the word. Play game. Reset game. Start game. Analysis game.	Get player enter letter. Click on the menu link.	Confirm the temporary blank. Confirm welcome message. Confirm analysis of the game. Confirm win or lose message. Confirm exit message.

	Exit game. Counting the left lives. Check the game finish or not. Check the player win or not.		
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Storyboard



1

```
Ruby v2.3.3 - ruby wad_wof_run_01.rb
C:\>h:
H:\>cd wad\hw3\wof
H:\wad\hw3\wof>ruby wad_wof_run_01.rb
Enter "1" runs game in command-line window or "2" runs it in web browser.
2
Web-based game
[2019-11-25 22:40:39] INFO WEBrick 1.3.1
[2019-11-25 22:40:39] INFO ruby 2.3.3 (2016-11-21) [i386-mingw32]
== Sinatra (v2.0.5) has taken the stage on 4567 for development with backup
[2019-11-25 22:40:39] INFO WEBrick::HTTPServer#start: pid=7264 port=4567
127.0.0.1 - - [25/Nov/2019:22:41:14 +0000] "GET / HTTP/1.1" 200 1184 0.1361
127.0.0.1 - - [25/Nov/2019:22:41:14 GMT Standard Time] "GET / HTTP/1.1" 200
```

Description:

Player use command window to start the game, and player enters "2" to start the web-based game.

2

```
localhost:4567
| Home | Play | New | Analysis | Exit |

Home

This web game was created by
Ruilin Wang 51986323

Please secelet one opotion or click below to start the game.

Play Game

WOF
```

Description:

Player open web bowser and enter localhost:4567 to play the game, here is the home page which shows a welcome message and menu bar.

And the game is ready at this time, it already read the word table and set a secret word.

3

```

| Home | Play | New | Analysis | Exit |

Play!

Welcome to Wheel of Fortune!

Guessing what this is: _____
Please enter a valid letter or a space.
You have 5 lives left.

Guess a missing charater
 Try Cancel

WOF
```

Description:

Player click play to start the game. The player will see the template which base on how long the secret word is and a dialog allow user input guess letter.

4

| Home | Play | **New** | Analysis | Exit |

Play!

Welcome to Wheel of Fortune!

Guessing what this is: _____
Invalid input. Please do not enter symbols.
You have 4 lives left.

Guess a missing charater

 Try Cancel

WOF

Description:

If player enter a symbol, like ?, it will show an error message to tell player not to do this and enter a valid letter. And the left lives will decrease

5

| Home | Play | **New** | Analysis | Exit |

Play!

Welcome to Wheel of Fortune!

Guessing what this is: _____
Invalid input. Please do not enter number.
You have 3 lives left.

Guess a missing charater

 Try Cancel

WOF

Description:

If player enter a number, like 1, it will show an error message to tell player not to do this and enter a valid letter. And the left lives will decrease

6

| Home | Play | **New** | Analysis | Exit |

Play!

Welcome to Wheel of Fortune!

Guessing what this is: _____
Invalid input. Please enter only one letter or a space.
You have 2 lives left.

Guess a missing charater

 Try Cancel

WOF

Description:

If player enter anything longer than one letter, like duck, it will show an error message to tell player not to do this and enter only one letter or a space. And the left lives will decrease

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[| Home](#) [| Play](#) [| New](#) [| Analysis](#) [| Exit](#) |

Play!

Welcome to Wheel of Fortune!

Guessing what this is: _____
Please enter a valid letter or a space.
You have 1 lives left.

Guess a missing charater

WOF

Description:

If player enter nothing, it will show an error message to tell player not to do this and enter a letter or a space. And the left lives will decrease

8

[| Home](#) [| Play](#) [| New](#) [| Analysis](#) [| Exit](#) |

Play!

Welcome to Wheel of Fortune!

Guessing what this is: __D__
Character D is in the word.
You have 1 lives left.

Guess a missing charater

WOF

Description:

If player enter a valid input, and the letter is in the word, it will show player a message tell player this letter is in the word. And the letter will show on the template.

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[| Home](#) [| Play](#) [| New](#) [| Analysis](#) [| Exit](#) |

Play!

Welcome to Wheel of Fortune!

Guessing what this is: D____
Character Q is not in the word.
You have 4 lives left.

Guess a missing charater

WOF

Description:

If player enter a valid input, and the letter is not in the word, it will show player a message tell player this letter is not in the word. And the left lives will decrease.

10

[| Home](#) | [Play](#) | [New](#) | [Analysis](#) | [Exit](#) |

Play!

Welcome to Wheel of Fortune!

Guessing what this is: DUCK
Character K is in the word.
The word is DUCK

You win!
[Start a New Game](#)
[Check Your Analysis](#)

WOF

Description:

If player guess all the letter in the word, game will give a message show that player win, the player's played time increase 1 and won time increase 1. There also are two links that one will set a new secret word for new game and one for player can check the analysis of game.

11

[| Home](#) | [Play](#) | [New](#) | [Analysis](#) | [Exit](#) |

Play!

Welcome to Wheel of Fortune!

Guessing what this is: __D__
Character A is not in the word.
The word is EIDER

You lose.

[Start a New Game](#)
[Check Your Analysis](#)

WOF

Description:

If player lose all the lives, game will give a message show that player lose, the player's played time increase 1. There also are two links that one will set a new secret word for new game and one for player can check the analysis of game.

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[| Home](#) | [Play](#) | [New](#) | [Analysis](#) | [Exit](#) |

New Game

Game reset. New word is created. Click Play to try another one.

[Play Game](#)
WOF

Description:

If player click New Game, it will lead player to the New page, this page will start a new game and set a new secret word. There also is a message to tell player new game is ready and a link to lead player back to Play.

13

[| Home](#) | [Play](#) | [New](#) | [Analysis](#) | [Exit](#) |

Analysis of Game.

You already played 2 times.
And you won 1 times.
Here are your last game playing steps:
["D is in the word.", "Q is not in the word.", "U is in the word.", "C is in the word.", "K
is in the word."]
[Play Game](#)
[Start a New Game](#)
[Exit the Game and Reset played times](#)

WOF

Description:

If player click Analysis, it will lead player to the Analysis page, this page will show player how many time player had played, how many time player won and player's playing steps in last game. There also is a link lead player back to New Game, Play or Exit.

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[| Home](#) | [Play](#) | [New](#) | [Analysis](#) | [Exit](#) |

Exit Game.

You exit the game, all data reset, now you can close the web browser.

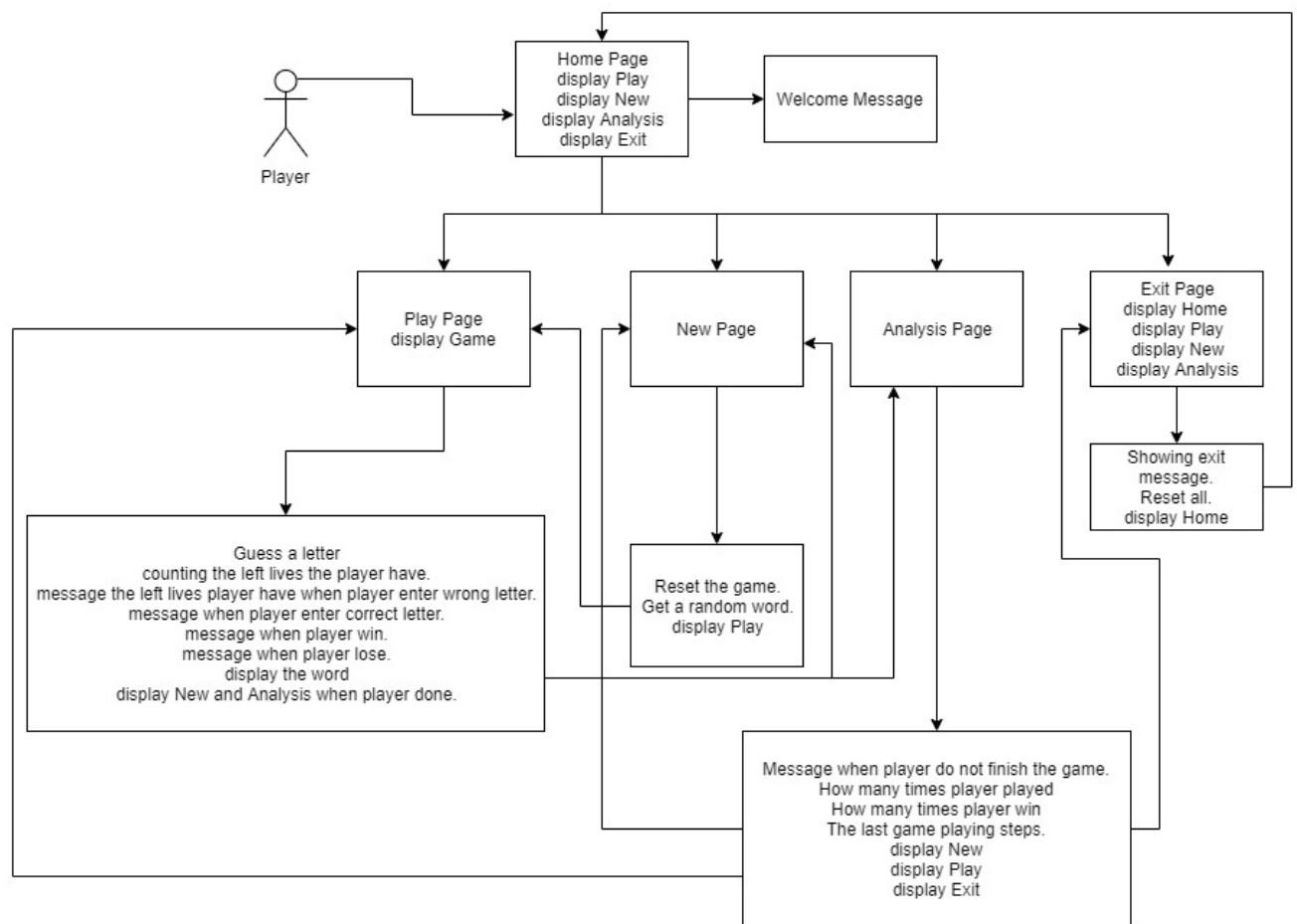
[Go Back to Home Page](#)

WOF

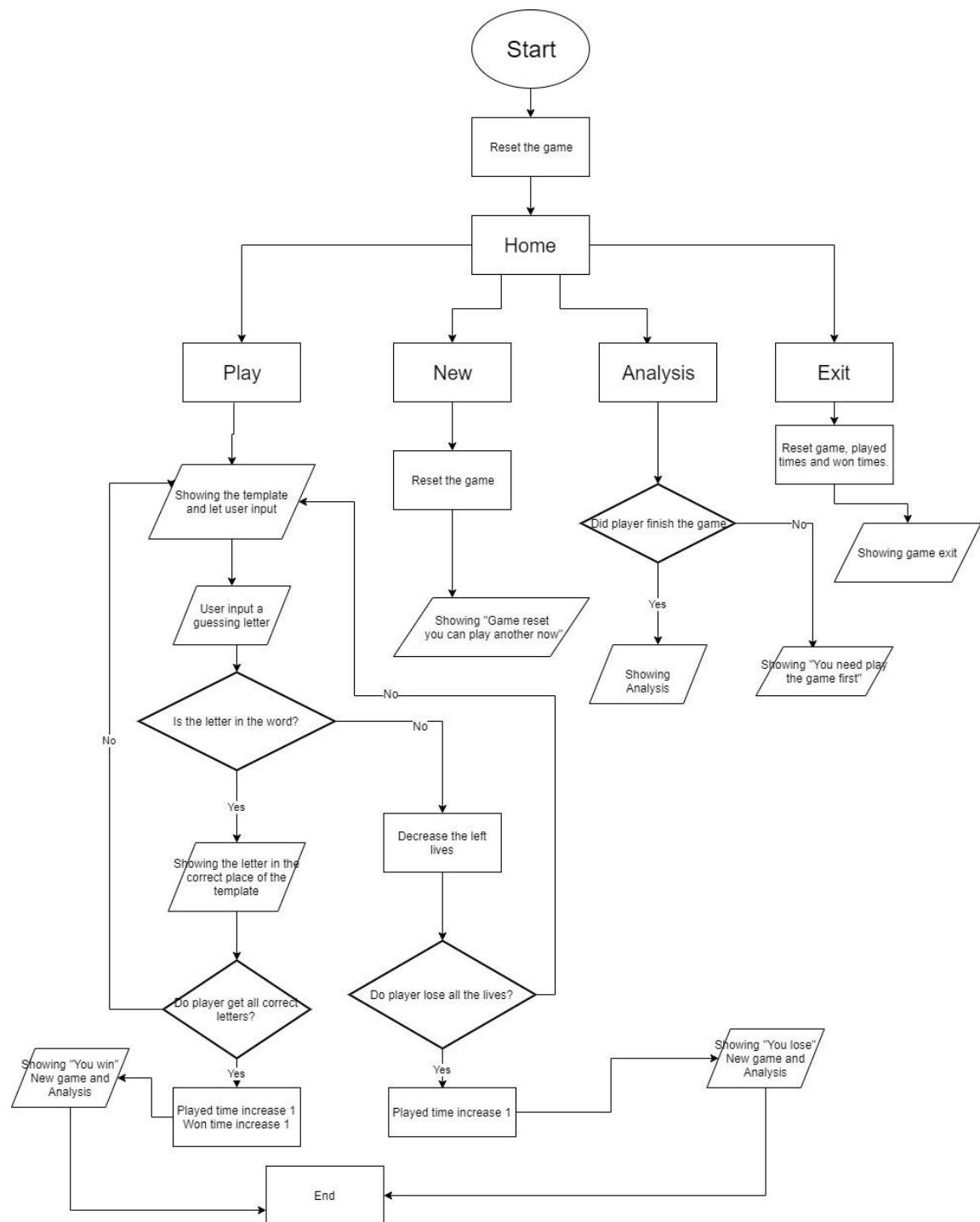
Description:

If player click Exit, it will lead player to Exit page, this page will reset the game, played time and won time. It also will give a message show player already exit, and a link which can lead player back to home page.

State Diagrams



Flow Charts



Pseudo Code

```
Start playing
Method: Reset the game
Create template bar
While not stop unless player win or player lose all lives
    Display template
    Get player guess letter
    If the letter is in the word
        Show the letter in the template
        If player win
            Show "you win"
            Increase the played time and won time
        Endif
    Else
        Decrease player's left lives
        If player lose
            Show "you lose"
            Increase the played time
        Endif
    Endif
End while
Finish
```

Conclusion

For building this Web-base game, I complete the command-line game first, and then I start design and thinking about how to build the game. Later, I am working on setting the methods for web-based game, after that I start to build the web page and the views of it, in the end I conform them together to make the web-based game work.

The design conforms the MVC architectural, which design pattern well suited and complements the architecture. MVC pattern includes 'model' which is the application's dynamic data structure, independent of the interface. It directly manages the data, logic and rules of the application; 'View' includes any representation of

information such as a chart, diagram or table. And the 'Controller' accepts input and converts it to commands for the model or view, also responds to the user input and performs interactions on the data model objects. The controller will receive the input, also could optionally validate it and then pass the input to the model.

I think the game meet all the requirements and the development is according to the design. Because the game has a home page and a menu bar which includes play, new, analysis and exit on the above. Player can play the WOF in the web-based game. Game will allow player enter guess letter, and it also will show error message if user enter invalid input. The game is able to check the input letter is in the word or not, and will show the message to let player know. The game is able to check if player win or lose and show the message to player. The game will count player totally played time and won times, so that player can see them on the analysis page. The game also allowe player to see the playing steps on last game in the analysis page. The game can start a new game and get a new secret word anytime. After player click exit, it will reset all data.

Recommendations

Installation Instructions

Before player will be able to run the files, they will need to have Ruby and TDD software installed. To install these, they could follow the respective links and instructions.

Ruby

<https://www.ruby-lang.org/en/documentation/installation/>

TDD

Install the TDD gem

Command: `gem install sinatra`

Running Instructions

To run the game, player need to extract the yourfullname-wadca2.zip folder.

In the terminal, navigate to the location where the files have been extracted to.

To run the game, run the command: `ruby wad_wof_run_01.rb`

Enter 2 to choose the web-based game and then open the web browser enter:

`localhost:4567`

to play the game.

Appendix

The future development of the WOF web-based game could below scope.

It could have creating account feature, so that players can create their account to keep counting their played times and won times.

It could have save and load feature, so that player can save the game by saving the template and left lives to a text file, then player can load it and continue play next time.