

CSC 480 Spring 2018 System Requirements

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Section 1 - Introduction:

Our purpose is to sufficiently outline and shape a system that can effectively deliver a unique variation of Scrabble™ to a workstation in the Richard S. Shineman Center of SUNY Oswego.

The system will only interact with those close enough to connect a mobile device, laptop, or any device with web capabilities to the hardware.

1.1 Definitions:

The game - refers to the system being created

The dictionary/ word dictionary - the database containing all the allowed words to be used in our game

Game Board - The graphically displayed shape with smaller shaped inside it representing spots

Tile - An item the size and shape of one spot on the game board that has a capital letter written on it with its corresponding point value

Player - a person or AI actively playing the game.

Hand - the set of letters a player is allowed to play onto the board.

Section 2 - System Requirements:

<u>ID #</u>	<u>Requirement Type</u>	<u>Description</u>
1.0	Constraint	The game shall only use the English language
2.0	Functional	The game shall have an English word dictionary
2.1	Functional	When a word is placed on the game board the system shall search the word dictionary for the word
2.2	Constraint	The dictionary shall not contain any proper nouns
2.2.1	Functional	A certain set of proper nouns shall be created that somehow reference SUNY Oswego and thus shall be exempt from Constraint 2.2
2.2.2	Functional	There will be a separate dictionary representing oswego oriented words
2.2.2a	Functional	A word referencing SUNY Oswego should receive a predetermined bonus to it's score
2.3	Constraint	The dictionary shall not contain any word that include suffix, abbreviations and prefix or any word that requires a hyphen or apostrophe
2.4	Constraint	If a word does not exist in the chosen dictionary, it cannot be played.
2.4.1	Functional	Any letters touching the placed letters must be cross-referenced to the dictionary
2.5	Constraint	Foreign words are not allowed to be placed on the board unless it is already in the dictionary described in 2.0
3.0	Constraint	A game must have at least two players.
3.1	Constraint	A game must not have more than four players.
4.0	Functional	The sequence of players shall be determined randomly.
5.0	Constraint	Each Player will always start their turn with 7 tiles in their hand.
6.0	Constraint	A player must either add a new word to the board or replace existing tiles in their hand.

7.0	Constraint	The first player's word must touch the center space.
8.0	Functional	All words played by any player must share at least one letter with an existing word on the board.
8.1	Functional	Words played xly must be read from left to right.
8.2	Functional	Words played vertically must be read from top to bottom.
9.0	Functional	Tiles used to form a word will be removed from that players hand
10.0	Functional	Tiles on the board will persist until the game is over.
11.0	Functional	Blank tiles can represent any letter, but award no points
11.1	Functional	A blank tile remains can not change its meaning once played on the board
12.0	Functional	You may use a turn to exchange all, some, or none of your letters
13.0	Functional	Each tile shall have a letter with a numeric value in one of the corners
13.1	Constraint	The letter shall be bigger in print size then that of the numeric value
14.0	Functional	On the game board, some spaces shall be allocated as multipliers
14.1	Functional	The space with a multiplier will have a combination of one number followed by a "W" or "L"
14.1.1	Functional	When the space has a "W" multiplier on it, the multiplier shall be associated with the whole word placed
14.1.2	Functional	When the space has an "L" multiplier on it, the multiplier shall be associated with the letter placed on that space
14.2	Functional	The multiplier space shall only count once towards the score of the placed word or letter
15.0	Functional	Points shall be kept track of throughout the game.
16.0	Functional	Any player can quit/forfeit during the game at any time.
16.1	Functional	All players should be given the option to play again or quit.

17.0	Functional	The game shall end when all tiles have been picked up by the players and there are no more playable moves by all players participating in the round.
17.1	Function	The game shall end when all tiles have been picked up by the players and one player uses all their tiles.
17.2	Functional	The player with the the most points at the end state is deemed the winner
17.3	Functional	If the game ends as specified by 17.1 players with tiles' still in their hand, are to subtract remaining tiles point values' from their overall score.
17.3.1	Functional	If the game ends as specified by 17.1 the scores subtracted by the players with remaining tiles is added to the player who ended the game with game condition 17.1
17.3.2	Functional	If the game ends as specified by 17.0 players are to subtract the remaining tiles' point values' from their overall score.
18.0	Functional	There shall be a set of tiles.
18.1	Functional	The tiles that are in the set shall be predetermined before the game begins.
18.2	Constraint	The cardinality of the set of tiles shall not be greater than the amount of tile spaces allowed on the board
18.3	Functional	The value of each tile will be determined preemptively by the developers.
19.0	Functional	When a word is played by a player, the total points earned are from all the tile values added together, along with the multipliers
19.1	Functional	Any other letters connecting to the tiles placed will also be added into the total score