

Computing Lab Project Report

Cross Word Puzzle

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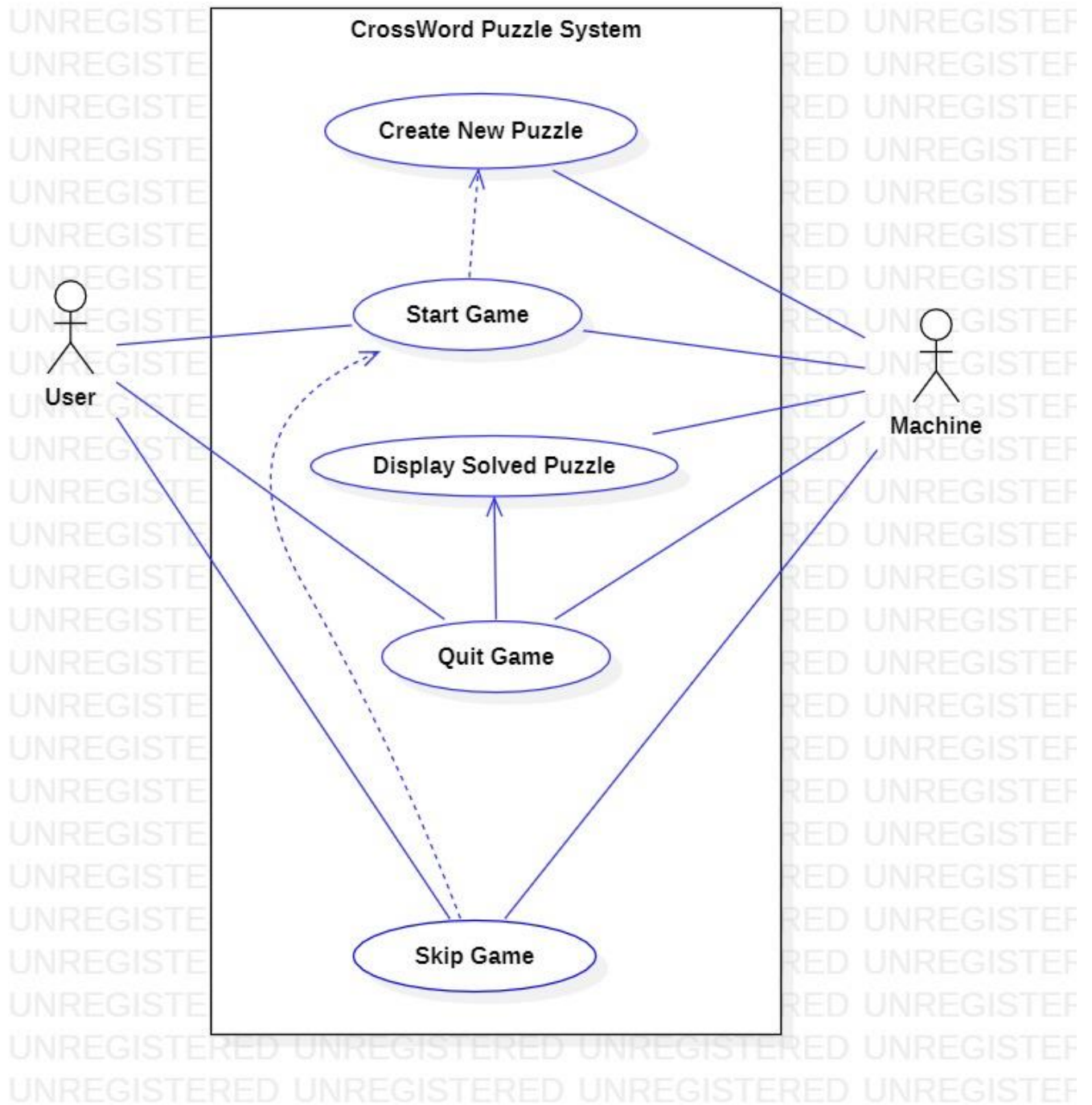
ABSTRACT

Cross word puzzle is a fun word puzzle game consisting of empty blocks where the blocks should be filled with the right words using given hints or clues. This game helps in improving vocabulary and simulate creativity and has been continued to be played since 1890. We have built a web based cross word puzzle game which allows user to play the game by clicking start the game button. The user will be shown 6 random alphabets and need to build 10 words by rearranging the alphabets provided by the game. The user is also allowed to use alphabets repeatedly to form words. We have made this game interesting by introducing timer and a score board where user is finishing the game within the time limit and for every correct word the user is rewarded with a score and correct word is displayed in the empty blocks where it can help user to build other words. If the timer exhausts, then game is completed and user is shown the solved crossword puzzle and user can restart the game to solve new puzzle. If the user finishes the game with in the time, then user wins the game and redirected to new puzzle with the existing score.

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I. Proposed Model



II. Working of the Proposed Model

The functions used in the building cross word puzzle:

1. Coordinatesofacell(X,Y): This function takes X,Y which represents marginTop and margin left of a cell and return the index of the cell.
2. marginLeft(block): This function returns the left margin value.
3. marginTop(block): This function returns the top margin value.
4. getResults():This function generates 6 random alphabets which are unique and find the words from a dictionary which can be formed using these 6 alphabets
5. placeResult(): This function places the word in the cell by taking the direction and coordinates of the cell.
6. placeResults(): This function uses data list and placement list to correctly place the word in the list by checking each word in the data list finds the intersecting cell and it places the word in such a way that it handles cases like
 - a. Words placed outside the grid boundaries
 - b. Words placed that leads to formation of unintentional words.
 - c. Words placed in a way that overwrite other alphabets in the word.
 - d. Words placed in a way that it creates duplicate words.
7. getgridWords(): This function scan entire grid and returns words on the grid
8. getBlockAtCellNo(): This function return value of a block which return the no of words intersected at that block.
9. arrangeBlock(): This function calculates no of empty space around the grid and places the puzzle at the center of the grid.
10. gameOver(): This function display solved cross puzzle.

Event handlers used in the project:

1. Load: It deblurs the screen for the user to view the game.
2. Click: It used to start the game with the background music
3. Keydown and Keyup: It takes input from the user to solve puzzle.

III. Hardware

- 1. Processor:** Minimum 2.0GHz requires.
- 2. RAM:** 2 GB.
- 3. Hard Disk:** 100 GB.
- 4. Input device:** Standard Keyboard and Mouse.
- 5. Output device:** VGA and High-Resolution Monitor.

IV. Software

- 1. Operating System:** Linux.
- 2. Language:** JavaScript, Html, CSS

V. Conclusion

We have built an interactive web-based crossword puzzle where user can solve the puzzle using different new keywords, also it helps them brainstorm to generate new crossword keyword puzzle every time a user plays the game. We can add new puzzles by adding new words. We can add many features such as difficulty levels of different puzzle, add background sound, give hints and there is a lot of further enhancements that can be done to make game more interesting.