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An Innovative Method to Solve an Unknown Word-Wordoku.

L Mary Gladence*, and R Sushmitha.

Department of IT, Sathyabama University, Chennai, Tamil Nadu, India.

ABSTRACT

Recently, many number puzzle games are implemented to level up our brain power . Where the physical exercise keeps muscle loss at bay, where as puzzle games keeps your brain cells from dying and also encourages better brain function. Apparently, the number puzzle games are leading than others do. But why not the word games ? So here comes the game called "wordoku" that which has the same rules and conditions as Sudoku do. The wordoku is a game that which is a logic-based word placement puzzle. The level of difficulty (simple, medium or complex) can be selected to suit the audience. The worduko game was proposed in a first monthly magazine which introduced simple puzzles and crossword puzzles in Latin. The wordoku presents no functional difference from a normal Sudoku. It can be in any kind of sequence like Sudoku will . The wordoku is a game that can be played with a particular number of square boxes or also called as square blanks by number of letters in the word should be equal to the square boxes same as Sudoku. Here, according to the game the letter in the particular given word should not be repeated in the same row or column or in the subsections.

Keywords: Wordoku ; P u z z l e Game; Alphabets or letters ;

*Corresponding author

INTRODUCTION

A Wordoku, is a variant of the popular number puzzle, Sudoku. Similarly to the game Sudoku, a Wordoku consists of a 9x9 grid divided into nine rows, nine columns and nine 3x3 sub-grids. In addition to that, a keyword is given at the bottom of each puzzle consisting of nine different symbols or characters. The objective of this puzzle is to fill the 9x9 grid with these given characters. So that each of the nine rows, nine columns and nine 3x3 sub grids contain all the characters from the given keyword.For example, here down figures shows you the explanation about the puzzle that which is solved after giving a little hints.Similarly, we can implement the same game in many forms. Such as, with 4x4, 16x16, etc......

In the below given fig.1 the characters are filled here and there. The level difficulty can be selected to suit the audience or the user. The game provides three complexity levels: simple, medium &complex.

	P		K		R	I		D
D			B					R
	B		E			P	A	
P				K	W	A		B
						R	K	
	A	D						
B				E				P
A						E		
E	R		P		K	B		

ABDEIKPRW

Fig 1:Unsolved Wordoku

After solving the above given keyword and filling all the characters in the keyword, with the word WIKIPEDIA containing 9 characters in it .

Here, in this example the above given characters in the keyword are placed successfully with the other left out characters of the given keywords.

W	P	E	K	A	R	I	B	D
D	I	A	B	W	P	K	E	R
R	B	K	E	I	D	P	A	W
P	E	R	I	K	W	A	D	B
I	W	B	D	P	A	R	K	E
K	A	D	R	B	E	W	P	I
B	K	W	A	E	I	D	R	P
A	D	P	W	R	B	E	I	K
E	R	I	P	D	K	B	W	A

ABDEIKPRW

Fig 2: Solved Wordoku

General rules to play game:

The game has simple rules. The game itself arranges the letters in the given word in 9x9 matrix, which is most common form of this game. The rules are as follows:

1.The letter, in each row and column, should be between a to z and should appear only once.

2. The 9x9 matrix is made of nine 3x3 matrices. So, the number in each of these subsets should also be between a to z and should appear only once.

RELATED WORK

A few number of research works related to my work is referred from [1]to [10].From that which I found to be very useful are listedbelow.

1.Keeps our brain alive and active, a useful break from our usual routine.
2.Develops some logical thinking and patterns.
3. Helps in improving your patience and concentration.
4.Improves sharpness and strategy while approaching and solving problems since you need to be accurate while putting digits and aware of the placement of other digits.
5. Enables you to learn, improve and compete against yourself (based on solving times), thus enhancing your skill-sets   and   competitive   spirit.
6. Gives you a sense of accomplishment on completing the grid within few minutes.
7.It can build your interest in the world of grid-based puzzles, and wordoku competitions, locally, nationally, or globally.
8.It is one of the simplest sports/games/activities to learn, enjoy, play/solve, and even teach.
9.It is something you can pursue lifelong since it does not have any age limit or materialistic requirements, except paper-pencil.

PROBLEM STATEMENT

To build a game called "WORDOKU" using words, that which consists of letters like as Sudoku containg numbers. And has the same rules and conditions as Sudoku does.

The only disadvantage which i feel with this game is that, it needs patience in the early days and takes time to learn it. You may feel bad once you have made a mistake with a single letter and correcting it will take a lot of time than redoing the entire puzzle. So I have decided to do all this in a simple c programming language where you are supposed to enter the empty boxes with zeroes. And then, it gives you the correct solved Wordoku.

PROPOSED WORK

The wordoku is a game that should be played as same as sudoku. The rules for this game as that the letter, in each row and column, should be between a to z which are given in that word by the user and the letter should appear only once in that sigle word. Repeated letters in a word is not allowed in this game. The 9x9 matrix is made of nine 3x3 matrices. So, the number in each of these subsets should also be between a to z which ever letter that is present in that particularly chosen letter. The Wordoku is done like entering zeroes in the empty spaces and then the sovled wordoku is displayed as shown below..

Enter the desired wordoku and enter 0 for unknown entries

```
0  0  0  R  E  0  0  M  W
0  0  0  0  0  0  0  O  D
0  M  0  0  0  0  L  G  0
0  0  R  A  M  0  D  0  0
0  D  0  L  0  R  0  A  0
0  0  O  0  D  W  E  0  0
0  R  A  0  0  0  0  D  0
L  O  0  0  0  0  0  0  0
D  E  0  0  A  L  0  0  0
```

/*So , the solved wordoku will be displayed as given below if the user give enter.*/

THE SOLVED WORDOKU

```
O  G  L  R  E  D  A  M  W
A  W  E  M  L  G  R  O  D
R  M  D  O  W  A  L  G  E
G  L  R  A  M  E  D  W  O
E  D  W  L  O  R  G  A  M
M  A  O  G  D  W  E  L  R
W  R  A  E  G  O  M  D  L
L  O  G  D  R  M  W  E  A
D  E  M  W  A  L  O  R  G
```

/* I had used turbo c for compiling this game by coding for it*/
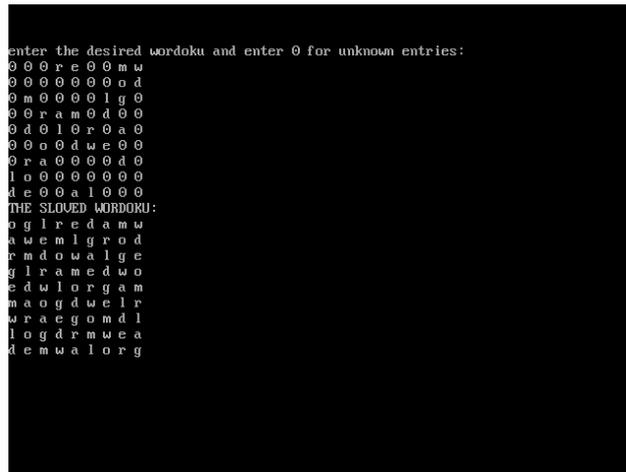
**Fig 3: Output for Wordoku**
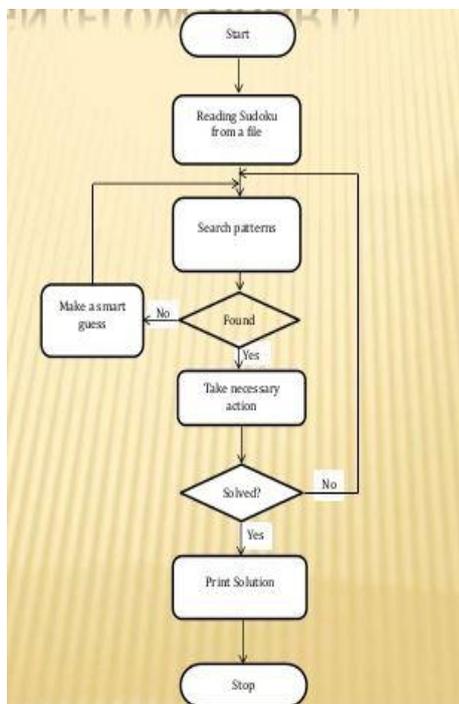
Fig 4: Flow chart for solving wordoku

CONCLUSION

In this work proposed a simple puzzle game called WORDOKU which is   similar to SUDOKU. It gives the final output as inputting the alphabets in a particular word that which has no repetition of a same letter in it and the solved wordoku as shown above in fig.3.

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