Crossword Puzzle (.puz) Parser and Interface

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File Format

The .puz files contain binary data which is organized as three different sections namely :

i) Header Section - contains details about various checksums, width, height, no. of clues and type of the puzzle.

ii) Grid Section - contains solution grid and the current state of the grid

iii) String Section - contains immutable information about the puzzle like title,author,copyright,clues and notes that go along with the puzzle.

iv) Extra Section (which is optional) - contains information about the rebuses in the solution grid and in the crossword puzzle entered by user, cells in the grid were pencil option was used, circles that may be present in the grid and the revealed,incorrect and previously incorrect flags.

GUI

GUIHelper program used for this project, reads the binary data from the .puz files and stores them in different data structures. GUI.py creates the GUI for the puzzle. This version contains most of the features that are present in the AcrossLite application. The prominent features are : pencil option, when the user is unsure of the entry, check option for checking the correctness for a letter, word or entire grid, reveal option for revealing a letter, word or whole solution, multiple entry option if the user has to enter more than one letter in a cell which will be useful for rebus puzzles and the timer which gives the time taken by the user to solve the puzzle. The cells in the grid can be accessed like a normal AcrossLite puzzle by clicking the cell or by using the Up, Down, Right or Left key. Clear Puzzle option is provided which can be helpful when the user wants to delete the entire current state grid, a single cell entry can be deleted using backspace button. Diagramless puzzles are displayed in a similar way to a normal puzzle with black cells displayed, but while saving, it is stored in the .puz file as a diagramless puzzle again.

Commandline Interface

For visually impaired users, a commandline interface was created, which they could use to interact with various components of the puzzle. The options available in this commandline version are

- Allowing the user to enter a word in the grid for a particular clue he/she chooses,
- Display current state or solution for a particular clue
- Display entire solution or current state of the grid
- View entire across or down clues along with the current state of the word corresponding to the clue.
- Clears the entire grid
- Saves the partially filled/completed work by the user in a .puz file

References

1. https://code.google.com/p/puz/wiki/FileFormat
2. https://github.com/alexdej/puzpy
3. http://newcoder.io/gui/part-0/
4. http://zetcode.com/gui/tkinter/
5. http://www.python-course.eu/tkinter_entry_widgets.php
6. https://docs.python.org/3.1/library/functions.html