CSC116: Comprehensive Exercise – Wheel of Fortune
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Wheel of Fortune

I would like an application that allows me to play a simplified version of the main game in the popular TV game show, Wheel of Fortune. In this three-player game, one player "spins" a wheel that contains 24 "wedges", 21 of which are labeled with random cash values between $500 and $1000. There is also one "Lose a Turn" and two "Bankrupt" wedges, both of which forfeit the player's turn. The bankrupt wedge eliminates any cash the player has accumulated in the round. Each round has a category and a blank puzzle phrase (associated with the category), with each blank representing a letter in the puzzle answer (punctuation, such as an apostrophe, is shown if present).

On their turn, a player has three options, "spin the wheel" and pick a consonant, buy a vowel for a flat rate of $250, or solve the puzzle. If they spin the wheel and pick a letter that exists in the puzzle, the letter(s) are revealed and the player earns the value the wheel wedge "landed" on multiplied by the number of times the letter appears in the puzzle. The player can then choose to spin again, buy a vowel, or attempt to solve the puzzle. Players may continue to buy vowels so long as they have enough money to keep doing so, until all of the vowels in the puzzle have been revealed.

The current player can keep playing (choosing one of the options) until one of the following occurs (and control passes to the next player):

- the wheel "lands" on the Lose a Turn or a Bankrupt wedge
- the player picks a letter that is not in the puzzle
- the player picks a letter that has already been picked in that round
- the player unsuccessfully attempts to solve the puzzle.

When a player successfully solves the puzzle, the round ends and the player's round score is added to his/her total game score. The other players lose any money accumulated in this round.

For this application, a game will contain three rounds (a new puzzle for each round). The starting player should be rotated for each round. At the end of the game, the player with the highest game score will be declared the winner. After each round, the current game score for each player should be displayed. Each player's round score should be displayed each time they are given a choice of action (spin, buy, solve).

I have a puzzle list file, located at puzzles.txt, for you to start with (which you are free to modify). The puzzle list file contains of a series of category:phrase pairs, one per line. You may assume that the file does not contain any errors, that the phrases in the file only contain capital letters, spaces, and apostrophes (no underscores). As shown above, the category and phrase are separated in the file by a colon (:).