GHOST: A Multiplayer Word Game

Fall Semester

Statement of the Problem

Players alternate naming letters which are appended to a string. If a player names a letter that forms a word, or if he or she names a letter that makes it impossible for the string to eventually form a word, and the next player challenges, then the offending player receives a letter (in order, G-H-O-S-T) and the challenging player begins a new string. If a player challenges incorrectly then he or she loses the round and the next player begins a new string. If a player receives all five letters to spell GHOST then he or she is out. Play continues until only one player is left, the winner.

Example Round

Player 1: C

Player 2: C-A

Player 3: C-A-T

Player 1: C-A-T-E

Player 2: C-A-T-E-G

Player 3: C-A-T-E-G-O

Player 1: C-A-T-E-G-O-R

Player 2: C-A-T-E-G-O-R-I

Player 3: C-A-T-E-G-O-R-I-C

Player 1: C-A-T-E-G-O-R-I-C-A

Player 2: C-A-T-E-G-O-R-I-C-A-L

Player 3: *challenge*

- Player 2 gets a G and Player 3 starts a new string.

- Words must have $len > 3$ so Player 3 doesn't lose on CAT.

Handling Challenges

- If a player challenges then two cases are possible:

  - That player believes the current string is a word.
  - That player believes the current string could not form a word.

- In the first case the moderator can simply respond yes or no. If it is a word then the previous player loses the round and the challenging player starts the next round.

- In the second case the previous player must name a word. If they succeed then the challenging player loses the round and the next player after them starts the next round. If they fail then the challenging player starts the next round.

Keeping Score

- Each time a player loses a round they receive another letter in the word G-H-O-S-T. If a player gets all five letters then they are out.

- Also, more than two players, then transition correctly from round-to-round and knock out correctly.

Suggest a Move

- Cheat feature for human players, strategy for computer players.

- Primitive, letters that immediately lose, look one step ahead.

- Better, search the rest of the game tree (word tree).