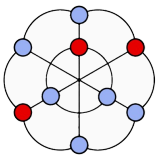


Game of Sprouts

App Overview

Game of Sprouts 2024

About Sprouts:
Welcome to Sprouts: Your Combinatorics Playground!
This program combines the engaging game of Sprouts with powerful graph analysis tools, making it perfect for students of combinatorics and graph theory.

Game Window:

Play the Game of Sprouts in the game window! Refer to the help page for rules if necessary. In addition to a canvas for playing the game, the game window includes file options for saving and loading graphs.

File Tab:

- ***New File:*** Creates a new blank graph
- ***Save****:* Saves the current graph into the "Saved Graphs" Folder
- ***Open***: Prompts the user to choose a folder to open a saved graph
- ***Exit***: Quits the program

Home Tab:

- ***Home:*** Opens the home/welcome screen

Graph Analysis Tab:

- ***Open Analysis:*** Runs the graph analysis for the current graph and opens the analysis window

Computer Tab:

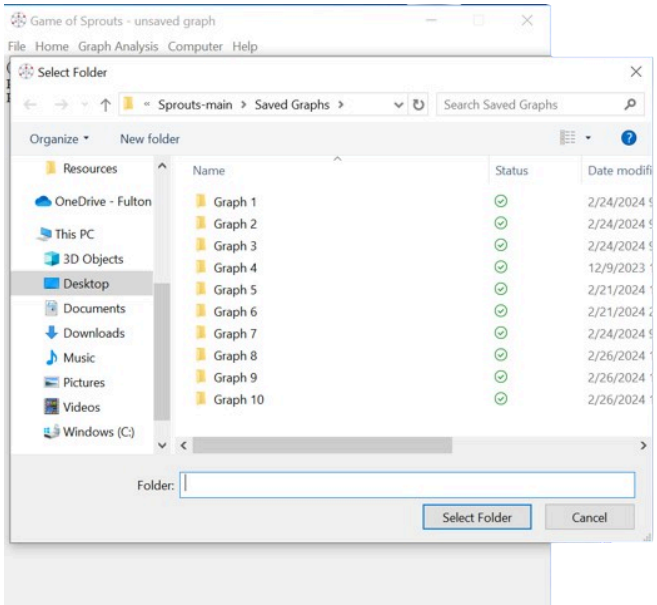
- ***Start Computer:*** Allows you to play against a computer – computer will make a move and then alternate with the player
- ***Kill Computer:*** Stops computer play

Help:

- ***Game Rules:*** Opens game rules
- ***About Sprouts*****:** Opens this document

Image of Game Window:

Open Graph:



Sprouts

Analysis Window:

The analysis window allows you to gain insight into your game's structure. The tool will analyze various graph properties such as connectivity, components, and more. This tool provides two distinct features to help you analyze graphs.

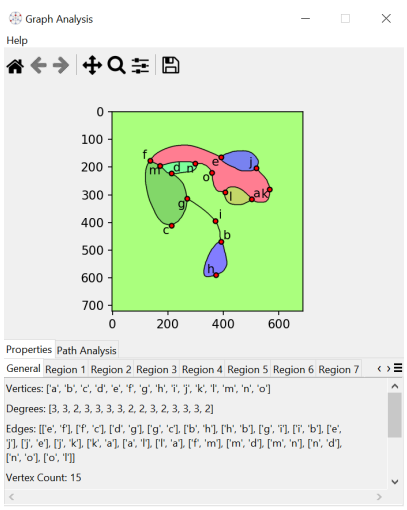
Graph Properties and Region Analysis:

- View properties of graphs (connectedness, components, etc.)
- See details of each region formed by the graph
- ***General:*** Displays general properties of the graph: *vertices, degrees, edges, vertex count, edge count, region count, component count,* and *set representation*
- ***Region:*** Displays properties for a single region: boundary points, live points, dead points, inner/outer boundary

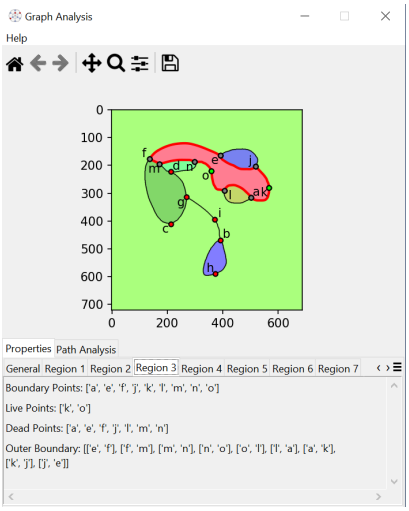
Path Analysis:

- See information about all possible paths in the current state.
- ***Path:*** Displays information about a single path: *path type, start point end point, route(s)*

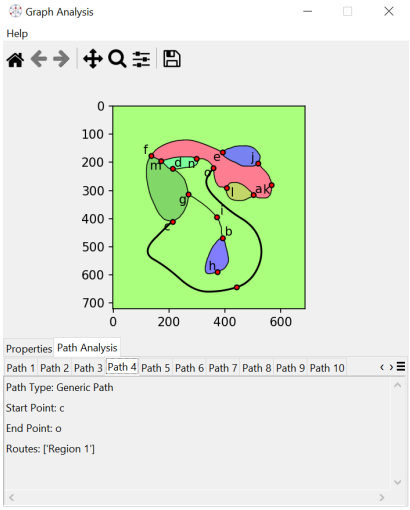
General Properties:



Region Analysis:



Path Analysis:



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