Individual Assignment

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GitHub Link: https://github.com/KryssNa/220179IndividualAssignmentDSA

Social Network Graph Visualization Application

Introduction

This document provides an overview of the "Social Network Graph Visualization Application" developed as part of the assignment for the creation of a GUI application that allows users to visualize a social network graph. The application aims to represent users as nodes and their connections as edges in a graph, facilitating a visual representation of relationships, user influence, and interactions.

Features and Functionalities

1. Graph Visualization

The application offers a window with a canvas where the social network graph is drawn. Nodes represent users, and edges represent connections between users.

2. User Data Input

User data is read from a file, and the graph is generated accordingly. Each node displays the user's name, age, profile picture, and the number of followers they have.

3. Connection Strength

Edges display the strength of the connection between users, such as the number of likes, comments, or shares between them.

4. Interactive Graph

Users can select and move nodes around the canvas, enabling customization and better visibility of the graph.

5. Node and Edge Deletion

Nodes and edges can be deleted by selecting them and pressing the delete key, enhancing the user's control over the graph's content.

6. Toolbar

The application includes a toolbar with buttons for selecting modes, adding nodes, and adding edges, streamlining user interactions.

7. User Search and Highlighting

Users can search for a specific user, and the corresponding node and connections are highlighted, providing focus and context.

Shortest Path Calculation: Implementing an algorithm to find and highlight the shortest path between two users can enhance the application's utility.

User Interface

The user interface has been designed to be intuitive and user-friendly. Users can easily navigate the application, interact with nodes and edges, search for users, and manipulate the graph as needed.

Known Issues

As of the current version, the application is stable and free from known bugs. However, user testing is recommended to identify and address any unforeseen issues.

Future Improvements

- Incorporate user authentication and profile management features.
- Enhance the visual appearance of nodes and edges for better aesthetics.
- Implement advanced algorithms to provide more insights into user influence and relationships.
- Introduce data visualization techniques (e.g., color coding) to represent different types of connections.
- Support additional file formats for importing user data.

Conclusion

The "Social Network Graph Visualization Application" successfully fulfills the assignment's requirements by providing an intuitive and interactive platform for visualizing social network graphs. Users can explore connections, interactions, and user influence within the network, contributing to a deeper understanding of relationships in the digital space. The application is well-documented, and future improvements can further enhance its functionality and user experience.