CS2100-Proyecto

#CS2100 #CS2100/groups

Criteria

- Implementation by Adjacent List
- Directed and non Directed Graph
- No Loops!
- Use of traits for node and vertices type.
- Use of OpenGL for Visualization
- Use of Github - Gitflow Metodoly
  - Branch per developer
  - Karma comits
    - Feat(DEVELOPER_NAME): text;
- Nodes => Cartesian Coordinates
- Edges => by parameter || Euclidean Distance of Nodes

Features Parcial

- Constructors
  - By Default
  - By Copy
  - By Parameter
    - Load data from vtkfile
    - Reload save graph
    - Random
- Destructor (destroy all gaph)
- Save graph on disk
- Insert /Remove for nodes and edges
- Grade of a node (i.e. node x has grade of …)
- is Connected?
  - G(n,e) is connected if for any nodes (u, v) in G, exists a path between them.
- is Bipartited?
- Graph density calculus
  - G(n,e) is dense if its number of edges is near to maximun number of edges for G
- Minimum Spanning Tree
  - Prim
  - Kruskal

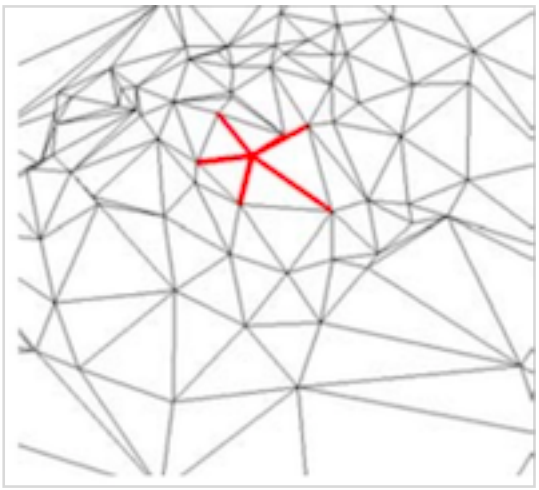
- Search two nodes (a ➜ b)
  - BFS (Breadth First Search)
  - DFS (Depth First Search)
- Neighborhood
  - Show Neighbors of a node
  - Validate Neighborhood of two nodes
    - use of threshold based on media of all distances
- OpenGL Interaction
  - Draw graph in 2d representation no depth
  - Selection of nodes using mouse
  - Selection of nodes using mouse for insertion and deletion

Features Final

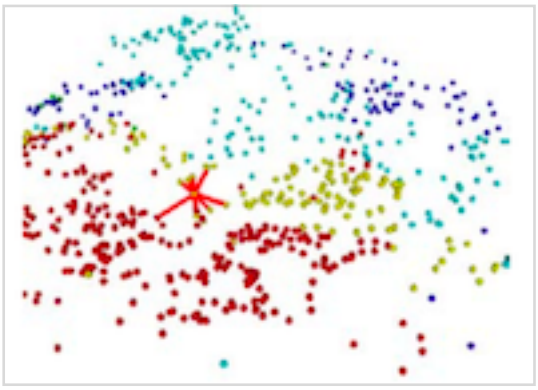
- Implement a cursor
  - cursor is basically an iterator
- Iterate
  - minimum
  - maxima
  - custom edge weight
- Hamiltonian path calculus
  - Hamiltonian is a path that visits all vertinces once time
- Multiple cursors (iterators)
  - Draw Iterator (spider form)
  - Minimun Search of two nodes in parallel
  - Two cursors are neighbors
- Change search of two nodes (a ➜ b) using cursors:
  - A*
  - DisjkTra
- Subgraph by path of iteration
- Join subgraphs of different cursors
- Minimum Spanning Tree
  - of Subgraph
  - of set of points pexFormat automatic segmentation of graphs (list of subgraphs)
- OpenGL Interaction
  - Cursor interaction using keyboard
  - Selection of nodes using mouse

Images

Cursor representation on graph.



Cursor neighbor representation of points graph generation.



Cursor iteration and creation of subgraph