Priti Changlani(UFID: 1782-4230)

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Programming Language: JAVA (v 1.7)

IDE: Eclipse

Compiler: javac 1.8.0_20

Compilation Instructions:

1. Extract the .zip file

2. In the terminal, navigate to the directory where the extraction is done

3. Run the command: make clean

4. Run the command: make

For Part 1:

5. Run the command: java ssp <inputFileName> <sourceNode> <destinationNode>

For Part 2:

6. Run the command: java routing <inputGraphFile> <inputIPFile> <sourceNode> <destinationNode>

Function Prototypes:

The project includes following classes:

- **ssp.java:** Initiates the part 1 of the project

Input: inputFile, sourceNode, destinationNode

- **routing.java:** Initiates the part 2 of the project

Input: inputGraphFile, inputIPFile sourceNode, destinationNode

- **FibonacciHeap.java:** This class represents the Fibonacci heap used by Dijkstra's SSSP algorithm
- **FibHeapNode.java:** This class represents the Fibonacci heap node used by Fibonacci Heap
- **BinaryTrieNode.java:** This class represents the Binary Trie node used by Binary Trie
- **BinaryTrie.java:** This class represents the Binary Trie used by routing.java
- **Graph.java:** This class generates an undirected graph used by Dijkstra and Dijkstra2

Input: Vertex count and edges

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Output: Generates an undirected graph

- **BundleFromDijk.java:** This class represents bundles result from Dijkstra2, used by routing.java
- **Dijkstra.java:** This class implements the Dijkstra's Single Source Shortest Path algorithm and makes use of the FibonacciHeap and FibHeapNode
- **Dijkstra2.java:** This class implements the Dijkstra's Single Source Shortest Path algorithm and makes use of the FibonacciHeap and FibHeapNode and return the output as an instance of BundleFromDijk

Class Diagram: