How to Run the code?

To run this code:
1) Clone the repository in your local machine using "git clone 'ssh id'"
2) Download IntelliJ for Java
3) Download Java 12 SDK
4) Open the project in IntelliJ
5) Once the project is Open go to File->ProjectStructure->Libraries.
  a) Click on plus icon and select maven and install 'guru.nidi:graphviz-java:0.18.1' library.
6) Right click on src folder and select "Run ALL tests"
7) For getting code coverage: Right click on src folder and select More Run/Debug->"Run All tests with code coverage"

Important Notes:

- Files required are in the zip folder and can be found at https://github.com/DhavalPatodiya/CSE-464-2023-dpatodiy/tree/main
- The code will only work for digraphs.
- Test coverage is 100%.

APIs

- ParseGraph() : Parses the dot file to a graph object
- toString() : Returns a string with “number of nodes, edges, and edges direction
- OutputGraph() : Writes the graph in a txt files
- AddNode(): Add nodes in a graph and if duplicate node is present then it will not be added.
- RemoveNode(): Removes nodes in graph if present.
- AddNodes(): Add a list of nodes if nodes are not present
- RemoveNodes() : Removes list of nodes from graph if present
- AddEdge(): Add edge between source node and destination node if not present
- RemoveEdge(): Remove edge between source node and destination node if present
- OutputDOTGraph(): Convert graph into a dot file
- OutputGraphics(): Accepts 2 format “png” or “jpg” and convert graph into png or jpg

Example Code can be found in test cases:

1) Create a new Main class and type the following code snippet:

```
public static void main(String args[]) throws Exception {
    GraphManager g = new GraphManager();
    g.parseGraph("input.dot");
    System.out.println(g.toString());
    g.addEdge("e", "a");
    g.outputGraph("output.txt");
    g.removeEdge("e", "a");
    g.addNode("f");
    g.removeNode("f");
    String nodes[] = new String[]{"f", "g"};
    g.addNodes(nodes);
```

```
        g.removeNodes(nodes);
        g.outputDOTGraph("output.dot");
        g.outputGraphics("output.png", "png");
        g.outputGraphics("output1.jpg", "jpg");

    }
```