Project Title: Project Part 1

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GitHub Repository Link: https://github.com/sdingwan/CSE-464-2024-sdingwan.git

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Getting Started with the Project

Prerequisites

- Java JDK 11 or higher
- Maven 3.6 or higher
- An IDE like IntelliJ IDEA or Eclipse (optional)

Installation

Clone the repository using:

git clone https://github.com/sdingwan/CSE-464-2024-sdingwan.git

Navigate to the project directory:

cd [project-directory]

Running the Project To compile and run the project, execute:

```
mvn package
java -jar target/[generated-jar-file].jar
```

Running Tests

Execute the following command to run the automated tests:

```
mvn test
```

Project Structure

- **src/main/java/**: Contains the main Java source files.
- **src/test/java/**: Contains the JUnit test cases.

- **src/test/resources/**: Contains test resources and expected output files.

Example Usage and Expected Output Screenshots

Feature 1: Parsing a DOT File

```
parser.parseGraph("src/test/resources/sample.dot");
```

```
Graph:
Nodes: 3
Edges: 2
A -> B
B -> C
```

Feature 2: Adding a Node and Nodes

```
parser.addNode("Z");
parser.addNodes(new String[]{"X", "Y"});
```

```
Graph:
Nodes: 4
Edges: 2
A -> B
B -> C
Z
```

```
Graph:
Nodes: 5
Edges: 2
A -> B
B -> C
X
Y
```
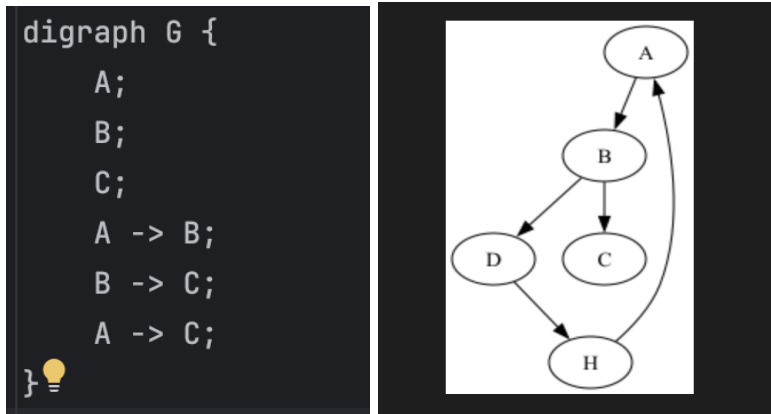
Feature 3: Adding an Edge

```
parser.addEdge("A", "B");
```

```
Graph:
Nodes: 3
Edges: 2
A -> B
B -> C
```

Feature 4: Outputting to DOT and PNG

```
parser.outputDOTGraph("output_graph.dot");
parser.outputGraphics("output_graph.png", "png");
```


GitHub Commits and CI/CD Integration

- **Commit for Feature 1**:
  https://github.com/sdingwan/CSE-464-2024-sdingwan/commit/ef52a47bee151eb4789d25db78a028a34b72a3e2
- **Commit for Feature 2**:
  https://github.com/sdingwan/CSE-464-2024-sdingwan/commit/736874515c679519d6459ede00ba97a02478ee7f
- **Commit for Feature 3**:
  https://github.com/sdingwan/CSE-464-2024-sdingwan/commit/00a4b319e0ea95f7b54a62f24e430fec450cb09e
- **Commit for Feature 4**:
  https://github.com/sdingwan/CSE-464-2024-sdingwan/commit/0b39af6e3f10c08fa009e1feb60b6c73ca49fbb5