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package microjs.jcompiler.utils;

import java.util.ArrayList;
import java.util.List;

public class DotGraph {
        private List<Node> nodes;
        private List<Edge> edges;

        public DotGraph() {
                nodes = new ArrayList<>();
                edges = new ArrayList<>();
        }

        public String addNode(String label) {
                String nodeName = "N" + (nodes.size() + 1);
                nodes.add(new Node(nodeName, label));
                return nodeName;
        }

        public void addEdge(String srcName, String dstName, String label) {
                edges.add(new Edge(srcName, dstName, label));
        }

        public void addEdge(String srcName, String dstName) {
                edges.add(new Edge(srcName, dstName, ""));
        }

        class Node {
                private String label;
                private String name;

                public Node(String name, String label) {
                        this.name = name;
                        this.label = label;
                }

                public String getName() {
                        return name;
                }

                public String getLabel() {
                        return label;
                }

                @Override
                public int hashCode() {
                        return name.hashCode();
                }

                @Override
                public boolean equals(Object obj) {
                        if(obj==null) return false;
                        if(obj==this) return true;
                        if(obj.getClass() != this.getClass())
                                return false;
                        return ((Node) obj).name.equals(name);
                }

                @Override
                public String toString() {
                        StringBuilder buf = new StringBuilder();
                        buf.append("  "); buf.append(name); buf.append( "[label=
\"");
                        buf.append(label); buf.append("\"];\n");
                        return buf.toString();
```

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                }
        }

        class Edge {
                private String srcName;
                private String dstName;
                private String label;

                public Edge(String srcName, String dstName, String label) {
                        this.srcName = srcName;
                        this.dstName = dstName;
                        this.label = label;
                }

                @Override
                public String toString() {
                        StringBuilder buf = new StringBuilder();
                        buf.append("  "); buf.append(srcName); buf.append( " ->
"); buf.append(dstName);
                        buf.append(" [label=\""); buf.append(label); buf.append(
"\"];\n");
                        return buf.toString();
                }

        }

        @Override
        public String toString() {
                StringBuilder buf = new StringBuilder();
                buf.append("digraph {\n");
                buf.append("  rankdir=\"LR\";\n");
                for (Node node : nodes) {
                        buf.append(node.toString());
                }
                for (Edge edge: edges) {
                        buf.append(edge.toString());
                }
                buf.append("}\n");
                return buf.toString();
        }

}
```