tgftools

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1. Overview

A simple command line tool reading and converting TGF data to

- PLANTUML
- CSV
- JSON
- YAML

Following command line options are available

```
Usage: tgfMain [-hV] [--convert-csv] [--convert-json] [--convert-puml]
               [--convert-puml-mindmap] [--convert-puml-wbs] [--convert- aml]
               [--overwrite-outputfile] [-f=<tgfFile>] [-o=<outputFile>]
parse, and convert TGF file format
      --convert-csv        convert TGF to csv
      --convert-json       convert TGF to json
      --convert-puml       convert TGF to puml
      --convert-puml-mindmap
                           convert TGF to puml mindmap
      --convert-puml-wbs   convert TGF to puml wbs
      --convert- aml       convert TGF to  aml
  -f, --file=<tgfFile>     read from TGF file, if not specified read TGF from
                             stdin
  -h, --help               Show this help message and e it.
  -o, --output=<outputFile>
                           write to file, if not specified write to stdout
      --overwrite-outputfile
                           overwrite e isting output file
  -V, --version            Print version information and e it.
```

2. TGF Format

TGF stands for Trivial-Graphic-Format. It simply defines a number of nodes, and edges.

The file syntax is simple:

```
file := node_list
    '#'
    edge_list

node_list := node_item node_list   node_item   []
node_item := node_id ' ' [node_name]
edge_list := edge_item edge_list   edge_item
edge_item := source_node_id ' ' target_node_id ' ' [edge_name]
source_node_id := node_id
target_node_id := node_id
```

An simple example with 2 nodes, and 1 edge:

```
1 Alice
2 Bob
#
2 1 hello
```

3. Use Case Generate TGF from Maven dependency:tree

You can generate a maven dependency tree in TGF-Format, like

```
mvn -DoutputT pe=tgf -DoutputFile=dependenc _tree.tgf dependenc :tree
```

Next you can convert the file dependency_tree.tgf using this command line tool, like

```
java -jar target/tgftools-1.0-SNAPSHOT-tgfmain.jar \
  --file=dependenc _tree.tgf --convert-puml
```

The above command will read the file dependency_tree.tgf, and output a plantuml representation to stdout.

4. Use Case Convert TGF to CSV

You can convert a TGF file to CSV using the command line option -convert-csv.

The first column type describes if the csv row describes either a d , or an d .

For a node entry $d_$ describes the d _ d, and a _ describes the node name. The column ab is alway empty for a node node entry.

For an edge entry $d_$ describes the start node of the edge, a _ describes the end node of the edge. Finally ab describes the optional label of the edge.

4.1. Example CSV

```
"t pe","id_from","name_to","label"
"node","244577237","org.huberb:tgftools:jar:1.0-SNAPSHOT",""
"node","1612496268","info.picocli:picocli:jar:4.6.1:compile",""
"node","13692003","org.junit.jupiter:junit-jupiter-api:jar:5.8.1:test",""
"node","94748968","org.opentest4j:opentest4j:jar:1.2.0:test",""
"node","1944815218","org.junit.platform:junit-platform-commons:jar:1.8.1:test",""
"node","1497558532","org.apiguardian:apiguardian-api:jar:1.1.2:test",""
"node","1584833211","org.junit.jupiter:junit-jupiter-params:jar:5.8.1:test",""
"node","1970377948","org.junit.jupiter:junit-jupiter-engine:jar:5.8.1:test",""
"node","1518752790","org.junit.platform:junit-platform-engine:jar:1.8.1:test",""
"edge","244577237","1612496268","compile"
"edge","13692003","94748968","test"
"edge","13692003","1944815218","test"
"edge","13692003","1497558532","test"
"edge","244577237","13692003","test"
"edge","244577237","1584833211","test"
"edge","1970377948","1518752790","test"
"edge","244577237","1970377948","test"
```

5. Use Case Convert TGF to PUML

You can convert a TGF file to PLANTUML using the command line option -convert-puml.

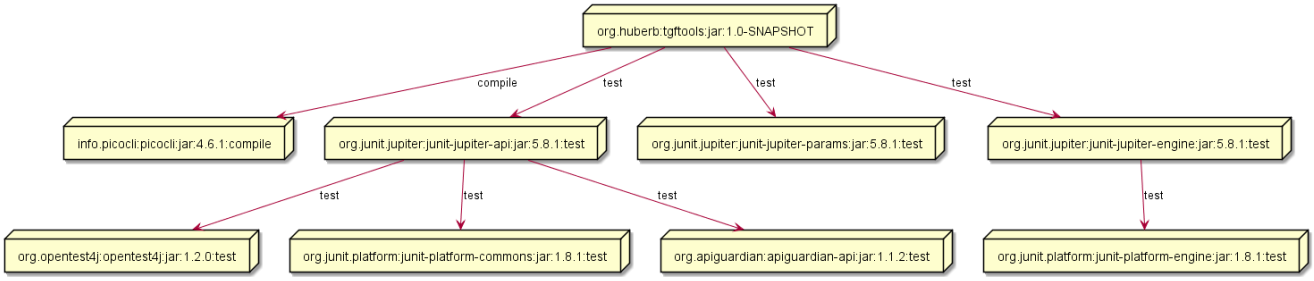
5.1. Example PUML

```
@startuml

' nodes
node "org.huberb:tgftools:jar:1.0-SNAPSHOT" as 244577237
node "info.picocli:picocli:jar:4.6.1:compile" as 1612496268
node "org.junit.jupiter:junit-jupiter-api:jar:5.8.1:test" as 13692003
node "org.opentest4j:opentest4j:jar:1.2.0:test" as 94748968
node "org.junit.platform:junit-platform-commons:jar:1.8.1:test" as 1944815218
node "org.apiguardian:apiguardian-api:jar:1.1.2:test" as 1497558532
node "org.junit.jupiter:junit-jupiter-params:jar:5.8.1:test" as 1584833211
node "org.junit.jupiter:junit-jupiter-engine:jar:5.8.1:test" as 1970377948
node "org.junit.platform:junit-platform-engine:jar:1.8.1:test" as 1518752790
' edges
244577237 --> 1612496268 : compile
13692003 --> 94748968 : test
13692003 --> 1944815218 : test
13692003 --> 1497558532 : test
244577237 --> 13692003 : test
244577237 --> 1584833211 : test
1970377948 --> 1518752790 : test
244577237 --> 1970377948 : test

@enduml
```

5.2. Example Rendered PUML



6. Use Case Convert TGF to PUML WBS

You can convert a TGF file to PUML wbs (work breakdown structure) using the command line option -convert-puml-wbs.

6.1. Example PUML WBS

```
@startwbs

* root
** 244577237 org.huberb:tgftools:jar:1.0-SNAPSHOT
*** 1612496268 info.picocli:picocli:jar:4.6.1:compile
*** 13692003 org.junit.jupiter:junit-jupiter-api:jar:5.8.1:test
*** 94748968 org.opentest4j:opentest4j:jar:1.2.0:test
*** 1944815218 org.junit.platform:junit-platform-commons:jar:1.8.1:test
*** 1497558532 org.apiguardian:apiguardian-api:jar:1.1.2:test
*** 1584833211 org.junit.jupiter:junit-jupiter-params:jar:5.8.1:test
*** 1970377948 org.junit.jupiter:junit-jupiter-engine:jar:5.8.1:test
*** 1518752790 org.junit.platform:junit-platform-engine:jar:1.8.1:test

@endwbs
```

6.2. Example Rendered PUML WBS

7. Use Case Convert TGF to PUML MINDMAP

You can convert a TGF file to PUML using the command line option -convert-puml-mindmap.

7.1. Example PUML MINDMAP

```
@startmindmap

* root
** 244577237 org.huberb:tgftools:jar:1.0-SNAPSHOT
*** 1612496268 info.picocli:picocli:jar:4.6.1:compile
*** 13692003 org.junit.jupiter:junit-jupiter-api:jar:5.8.1:test
*** 94748968 org.opentest4j:opentest4j:jar:1.2.0:test
*** 1944815218 org.junit.platform:junit-platform-commons:jar:1.8.1:test
*** 1497558532 org.apiguardian:apiguardian-api:jar:1.1.2:test
*** 1584833211 org.junit.jupiter:junit-jupiter-params:jar:5.8.1:test
*** 1970377948 org.junit.jupiter:junit-jupiter-engine:jar:5.8.1:test
*** 1518752790 org.junit.platform:junit-platform-engine:jar:1.8.1:test

@endmindmap
```

7.2. Example Rendered PLANTUML MINDMAP

8. Use Case Convert TGF to JSON

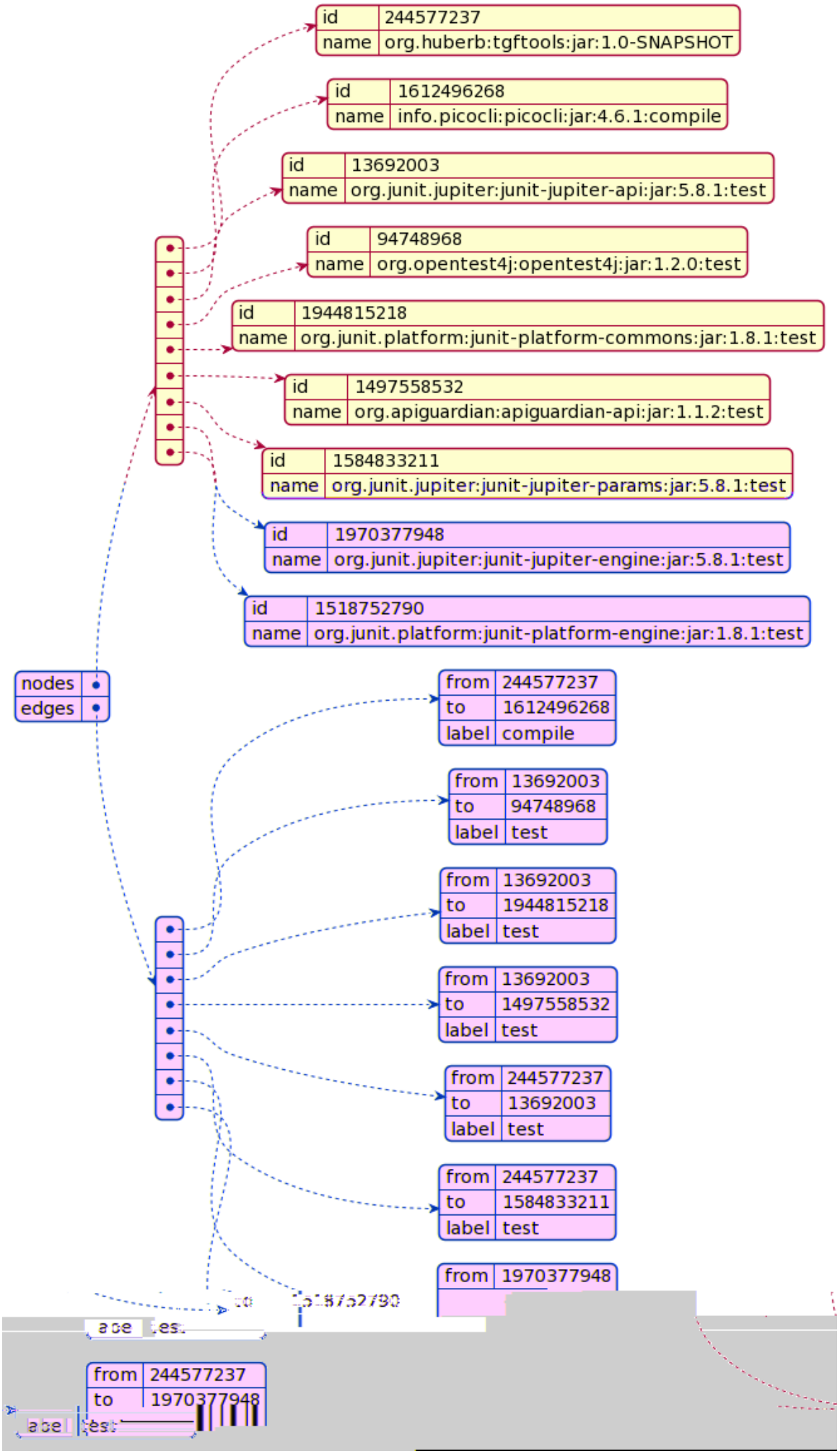
You can convert a TGF file to CSV using the command line option -convert-json.

8.1. Example JSON

```
"nodes": [
 "id":"244577237","name":"org.huberb:tgftools:jar:1.0-SNAPSHOT" ,
 "id":"1612496268","name":"info.picocli:picocli:jar:4.6.1:compile" ,
 "id":"13692003","name":"org.junit.jupiter:junit-jupiter-api:jar:5.8.1:test" ,
 "id":"94748968","name":"org.opentest4j:opentest4j:jar:1.2.0:test" ,
 "id":"1944815218","name":"org.junit.platform:junit-platform-commons:jar:1.8.1:test" ,
 "id":"1497558532","name":"org.apiguardian:apiguardian-api:jar:1.1.2:test" ,
 "id":"1584833211","name":"org.junit.jupiter:junit-jupiter-params:jar:5.8.1:test" ,
 "id":"1970377948","name":"org.junit.jupiter:junit-jupiter-engine:jar:5.8.1:test" ,
 "id":"1518752790","name":"org.junit.platform:junit-platform-engine:jar:1.8.1:test"
],
"edges": [
 "from":"244577237","to":"1612496268","label":"compile" ,
 "from":"13692003","to":"94748968","label":"test" ,
 "from":"13692003","to":"1944815218","label":"test" ,
 "from":"13692003","to":"1497558532","label":"test" ,
 "from":"244577237","to":"13692003","label":"test" ,
 "from":"244577237","to":"1584833211","label":"test" ,
 "from":"1970377948","to":"1518752790","label":"test" ,
 "from":"244577237","to":"1970377948","label":"test"
]
```

8.2. Example Reendered JSON

Using plantuml feature ``@startjson/@endjson'' the JSON output is rendered


id 244577237
name org.huberb:tgftools:jar:1.0-SNAPSHOT
id 1612496268
name info.picocli:picocli:jar:4.6.1:compile
id 13692003
name org.junit.jupiter:junit-jupiter-api:jar:5.8.1:test
id 94748968
name org.opentest4j:opentest4j:jar:1.2.0:test
id 1944815218
name org.junit.platform:junit-platform-commons:jar:1.8.1:test
id 1497558532
name org.apiguardian:apiguardian-api:jar:1.1.2:test
id 1584833211
name org.junit.jupiter:junit-jupiter-params:jar:5.8.1:test
id 1970377948
name org.junit.jupiter:junit-jupiter-engine:jar:5.8.1:test
id 1518752790
name org.junit.platform:junit-platform-engine:jar:1.8.1:test
nodes
edges
from 244577237
to 1612496268
label compile
from 13692003
to 94748968
label test
from 13692003
to 1944815218
label test
from 13692003
to 1497558532
label test
from 244577237
to 13692003
label test
from 244577237
to 1584833211
label test
from 1970377948
from 244577237
to 1970377948

9. Use Case Convert TGF to YAML

You can convert a TGF file to CSV using the command line option -convert-yaml.

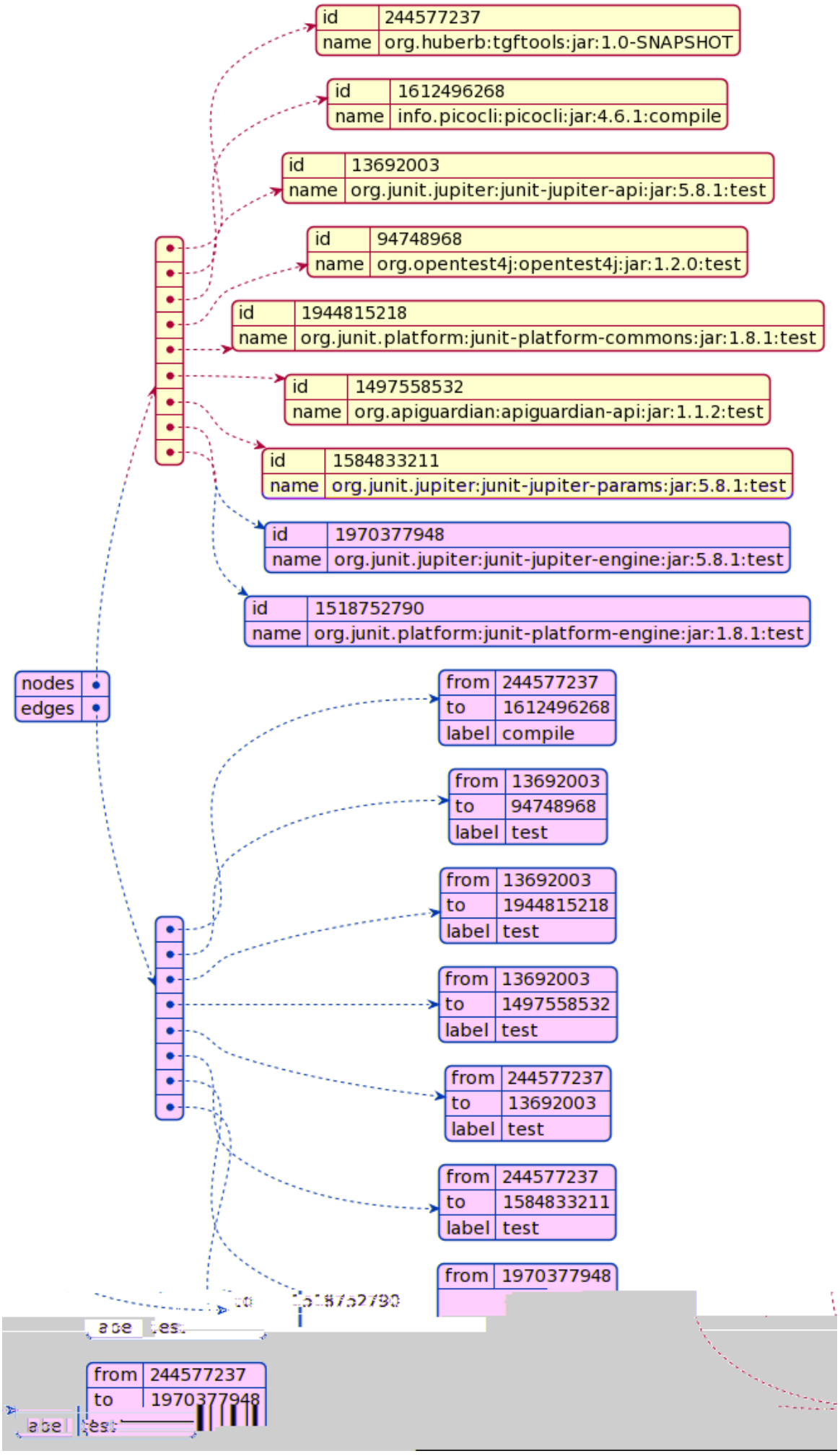
9.1. Example YAML

```
## YAML Template.
---
nodes:
  -
    id: "244577237"
    name: "org.huberb:tgftools:jar:1.0-SNAPSHOT"
  -
    id: "1612496268"
    name: "info.picocli:picocli:jar:4.6.1:compile"
  -
    id: "13692003"
    name: "org.junit.jupiter:junit-jupiter-api:jar:5.8.1:test"
  -
    id: "94748968"
    name: "org.opentest4j:opentest4j:jar:1.2.0:test"
  -
    id: "1944815218"
    name: "org.junit.platform:junit-platform-commons:jar:1.8.1:test"
  -
    id: "1497558532"
    name: "org.apiguardian:apiguardian-api:jar:1.1.2:test"
  -
    id: "1584833211"
    name: "org.junit.jupiter:junit-jupiter-params:jar:5.8.1:test"
  -
    id: "1970377948"
    name: "org.junit.jupiter:junit-jupiter-engine:jar:5.8.1:test"
  -
    id: "1518752790"
    name: "org.junit.platform:junit-platform-engine:jar:1.8.1:test"
edges:
  -
    from: "244577237"
    to: "1612496268"
    label: "compile"
  -
    from: "13692003"
    to: "94748968"
    label: "test"
  -
    from: "13692003"
    to: "1944815218"
    label: "test"
```

```
  -
    from: "13692003"
    to: "1497558532"
    label: "test"
  -
    from: "244577237"
    to: "13692003"
    label: "test"
  -
    from: "244577237"
    to: "1584833211"
    label: "test"
  -
    from: "1970377948"
    to: "1518752790"
    label: "test"
  -
    from: "244577237"
    to: "1970377948"
    label: "test"
```

9.2. Example Reendered YAML

Using plantuml feature ``@startyaml/@endyaml'' the JSON output is rendered


id 244577237
name org.huberb:tgftools:jar:1.0-SNAPSHOT
id 1612496268
name info.picocli:picocli:jar:4.6.1:compile
id 13692003
name org.junit.jupiter:junit-jupiter-api:jar:5.8.1:test
id 94748968
name org.opentest4j:opentest4j:jar:1.2.0:test
id 1944815218
name org.junit.platform:junit-platform-commons:jar:1.8.1:test
id 1497558532
name org.apiguardian:apiguardian-api:jar:1.1.2:test
id 1584833211
name org.junit.jupiter:junit-jupiter-params:jar:5.8.1:test
id 1970377948
name org.junit.jupiter:junit-jupiter-engine:jar:5.8.1:test
id 1518752790
name org.junit.platform:junit-platform-engine:jar:1.8.1:test
nodes
edges
from 244577237
to 1612496268
label compile
from 13692003
to 94748968
label test
from 13692003
to 1944815218
label test
from 13692003
to 1497558532
label test
from 244577237
to 13692003
label test
from 244577237
to 1584833211
label test
from 1970377948
from 244577237
to 1970377948

10. References

- TGF : https://en.wikipedia.org/wiki/Trivial_Graph_Format
- PLANTUML : https://plantuml.com/