

# Overview in General

This file contains a general overview of the data in the graph including node labels and relationships types.

## References

- [jqassistant](#)
- [Neo4j Python Driver](#)

## Node Labels

### Table 1a - Highest node count by label combination

Lists the 30 label combinations with the highest number of nodes. The labels with the lowest node count are listed in table 1b. The total list would sum up to the total number of labels (100%).

The whole table can be found in the CSV report `Node_label_combination_count`.

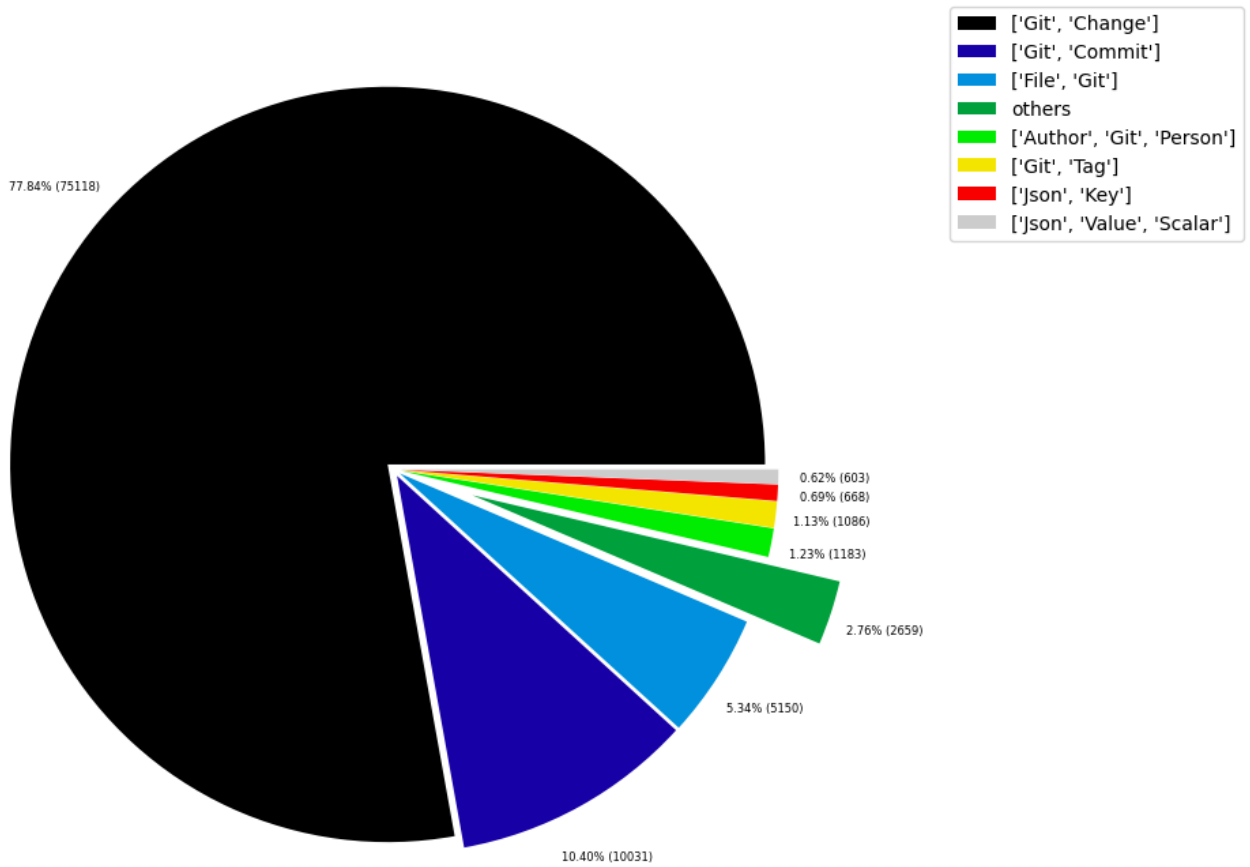
|    | nodeLabels                                  | nodesWithThatLabels | nodesWithThatLabelsPercent |
|----|---|---------------------|----------------------------|
| 0  | [Git, Change]                               | 75118               | 77.844100                  |
| 1  | [Git, Commit]                               | 10031               | 10.395034                  |
| 2  | [File, Git]                                 | 5150                | 5.336898                   |
| 3  | [Author, Git, Person]                       | 1183                | 1.225932                   |
| 4  | [Git, Tag]                                  | 1086                | 1.125412                   |
| 5  | [Json, Key]                                 | 668                 | 0.692242                   |
| 6  | [Json, Value, Scalar]                       | 603                 | 0.624883                   |
| 7  | [Committer, Git, Person]                    | 371                 | 0.384464                   |
| 8  | [NPM, Dependency]                           | 330                 | 0.341976                   |
| 9  | [Type, TS, Primitive, ExternalType]         | 285                 | 0.295343                   |
| 10 | [Type, TS, Declared, ExternalType]          | 272                 | 0.281871                   |
| 11 | [TS, ExternalDeclaration]                   | 215                 | 0.222803                   |
| 12 | [Type, TS, Literal, ExternalType]           | 136                 | 0.140936                   |
| 13 | [Json, Value, Object]                       | 133                 | 0.137827                   |
| 14 | [Type, TS, Union, ExternalType]             | 117                 | 0.121246                   |
| 15 | [Type, TS, ObjectMember, ExternalType]      | 98                  | 0.101557                   |
| 16 | [NPM, Script]                               | 91                  | 0.094302                   |
| 17 | [TS, Property]                              | 65                  | 0.067359                   |
| 18 | [TS, Function]                              | 47                  | 0.048706                   |
| 19 | [Type, Object, TS, ExternalType]            | 38                  | 0.039379                   |
| 20 | [Type, TS, FunctionParameter, ExternalType] | 37                  | 0.038343                   |
| 21 | [File, Directory]                           | 34                  | 0.035234                   |
| 22 | [TS, Parameter]                             | 33                  | 0.034198                   |
| 23 | [Type, TS, Function, ExternalType]          | 32                  | 0.033161                   |
| 24 | [Git, Branch]                               | 30                  | 0.031089                   |
| 25 | [Package, File, Json, NPM]                  | 29                  | 0.030052                   |
| 26 | [TS, ExternalModule]                        | 25                  | 0.025907                   |
| 27 | [TS, Variable]                              | 24                  | 0.024871                   |
| 28 | [Value, TS, Literal]                        | 20                  | 0.020726                   |
| 29 | [JQAssistant, Rule, Concept]                | 19                  | 0.019690                   |

## Chart 1a - Highest node count by label combination

Values under 0.5% will be grouped into "others" to get a cleaner plot. The group "others" is then broken down in Chart 1b.

<Figure size 640x480 with 0 Axes>

Nodes per label combination (more than 0.5% overall)



## Table 1b - Lowest node count by label combination

Lists the 30 label combinations with the lowest number of nodes until they reach 0.5% of the total node count, which are shown above.

|    | nodeLabels                                       | nodesWithThatLabels | nodesWithThatLabelsPercent |
|----|--|---------------------|----------------------------|
| 0  | [Analyze, Task, jQAssistant]                     | 1                   | 0.001036                   |
| 1  | [File, TS, Scan]                                 | 1                   | 0.001036                   |
| 2  | [TS, Method]                                     | 1                   | 0.001036                   |
| 3  | [Value, TS, ObjectMember]                        | 1                   | 0.001036                   |
| 4  | [TS, Constructor]                                | 1                   | 0.001036                   |
| 5  | [TS, Class]                                      | 1                   | 0.001036                   |
| 6  | [TS, Enum]                                       | 2                   | 0.002073                   |
| 7  | [Value, Object, TS]                              | 3                   | 0.003109                   |
| 8  | [Type, TS, Tuple, ExternalType]                  | 3                   | 0.003109                   |
| 9  | [Value, TS, Function]                            | 4                   | 0.004145                   |
| 10 | [TS, TypeParameter]                              | 4                   | 0.004145                   |
| 11 | [Value, TS, Complex]                             | 5                   | 0.005181                   |
| 12 | [NPM, Engine]                                    | 6                   | 0.006218                   |
| 13 | [Project, TS]                                    | 6                   | 0.006218                   |
| 14 | [File, Local]                                    | 6                   | 0.006218                   |
| 15 | [Value, TS, Call]                                | 6                   | 0.006218                   |
| 16 | [Value, TS, Member]                              | 6                   | 0.006218                   |
| 17 | [File, TS, Local, Module]                        | 6                   | 0.006218                   |
| 18 | [Type, TS, TypeParameterReference, ExternalType] | 6                   | 0.006218                   |
| 19 | [TS, EnumMember]                                 | 8                   | 0.008290                   |
| 20 | [Type, TS, NotIdentified, ExternalType]          | 11                  | 0.011399                   |
| 21 | [Json, Value, Array]                             | 12                  | 0.012435                   |
| 22 | [Value, TS, Declared]                            | 13                  | 0.013472                   |
| 23 | [TS, TypeAlias]                                  | 14                  | 0.014508                   |
| 24 | [File, Directory, Local]                         | 16                  | 0.016581                   |
| 25 | [Type, TS, Intersection, ExternalType]           | 17                  | 0.017617                   |
| 26 | [TS, Interface]                                  | 18                  | 0.018653                   |
| 27 | [jQAssistant, Rule, Concept]                     | 19                  | 0.019690                   |
| 28 | [Value, TS, Literal]                             | 20                  | 0.020726                   |
| 29 | [TS, Variable]                                   | 24                  | 0.024871                   |

## Chart 1b - Lowest node count by label combination

Shows the lowest (less than 0.5% overall) node count label combinations. Therefore, this plot breaks down the "others" slice of the pie chart above. Values under 0.01% will be grouped into "others" to get a cleaner plot.

<Figure size 640x480 with 0 Axes>

Nodes per label combination (less than 0.5% overall)

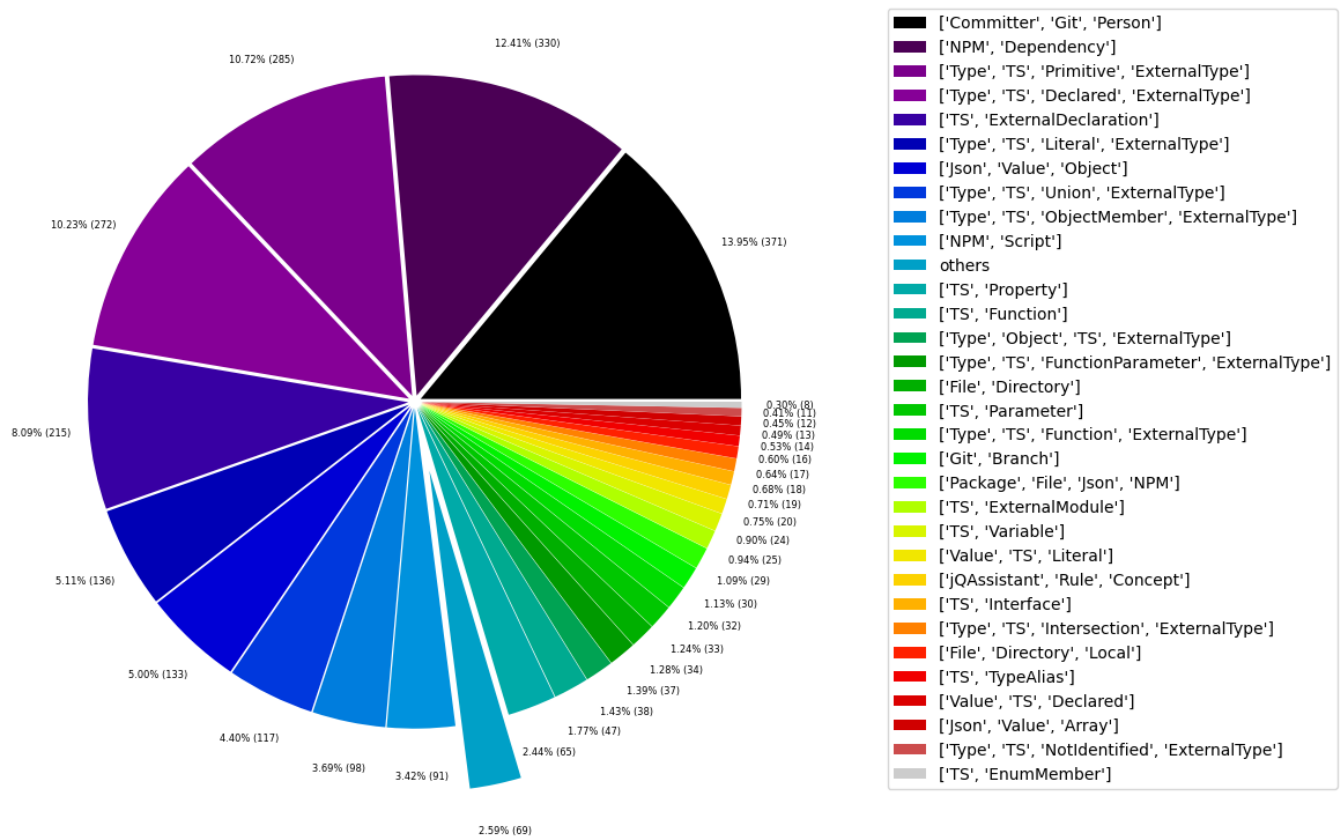


Table 1c - Highest node count by single label

Lists the 40 labels with the highest number of nodes. Doesn't sum up to the total number of nodes or 100% because one node can have multiple labels. Helps to identify commonly used labels.

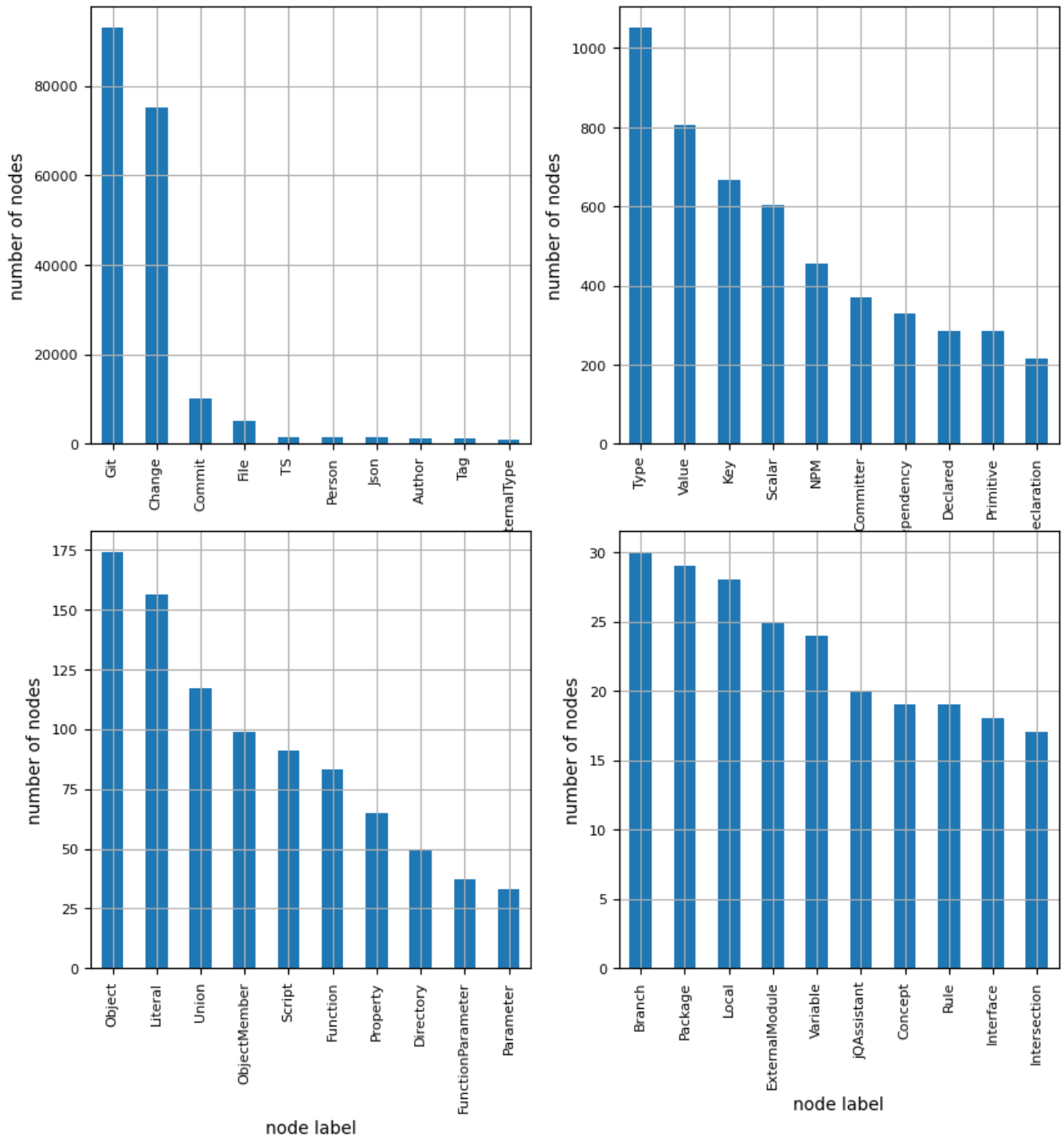
|    | nodeLabel           | nodesWithThatLabel | nodesWithThatLabelPercent |
|----|---------------------|--------------------|---------------------------|
| 0  | Git                 | 92969              | 96.342929                 |
| 1  | Change              | 75118              | 77.844100                 |
| 2  | Commit              | 10031              | 10.395034                 |
| 3  | File                | 5242               | 5.432237                  |
| 4  | TS                  | 1581               | 1.638376                  |
| 5  | Person              | 1554               | 1.610396                  |
| 6  | Json                | 1445               | 1.497440                  |
| 7  | Author              | 1183               | 1.225932                  |
| 8  | Tag                 | 1086               | 1.125412                  |
| 9  | ExternalType        | 1052               | 1.090178                  |
| 10 | Type                | 1052               | 1.090178                  |
| 11 | Value               | 806                | 0.835250                  |
| 12 | Key                 | 668                | 0.692242                  |
| 13 | Scalar              | 603                | 0.624883                  |
| 14 | NPM                 | 456                | 0.472549                  |
| 15 | Committer           | 371                | 0.384464                  |
| 16 | Dependency          | 330                | 0.341976                  |
| 17 | Declared            | 285                | 0.295343                  |
| 18 | Primitive           | 285                | 0.295343                  |
| 19 | ExternalDeclaration | 215                | 0.222803                  |
| 20 | Object              | 174                | 0.180315                  |
| 21 | Literal             | 156                | 0.161661                  |
| 22 | Union               | 117                | 0.121246                  |
| 23 | ObjectMember        | 99                 | 0.102593                  |
| 24 | Script              | 91                 | 0.094302                  |
| 25 | Function            | 83                 | 0.086012                  |
| 26 | Property            | 65                 | 0.067359                  |
| 27 | Directory           | 50                 | 0.051815                  |
| 28 | FunctionParameter   | 37                 | 0.038343                  |
| 29 | Parameter           | 33                 | 0.034198                  |
| 30 | Branch              | 30                 | 0.031089                  |
| 31 | Package             | 29                 | 0.030052                  |
| 32 | Local               | 28                 | 0.029016                  |
| 33 | ExternalModule      | 25                 | 0.025907                  |
| 34 | Variable            | 24                 | 0.024871                  |
| 35 | jqAssistant         | 20                 | 0.020726                  |
| 36 | Concept             | 19                 | 0.019690                  |
| 37 | Rule                | 19                 | 0.019690                  |
| 38 | Interface           | 18                 | 0.018653                  |
| 39 | Intersection        | 17                 | 0.017617                  |

## Chart 1c - Highest node count by label

Shows the 40 labels with the highest number of nodes.

<Figure size 640x480 with 0 Axes>

## Node count by label



## Relationship Types

Table 2a - Highest relationship count by type

Lists the 30 relationship types with the highest number of occurrences. The whole table can be found in the CSV report `Relationship_type_count` .

Total number of relationships: 269718

|    | relationshipType        | nodesWithThatRelationshipType | nodesWithThatRelationshipTypePercent |
|----|-------------------------|-------------------------------|--------------------------------------|
| 0  | CONTAINS_CHANGE         | 75118                         | 27.850570                            |
| 1  | MODIFIES                | 75118                         | 27.850570                            |
| 2  | UPDATES                 | 49402                         | 18.316167                            |
| 3  | COMMITTED               | 20062                         | 7.438139                             |
| 4  | CREATES                 | 17984                         | 6.667705                             |
| 5  | HAS_PARENT              | 11045                         | 4.095018                             |
| 6  | DELETES                 | 10507                         | 3.895550                             |
| 7  | RENAMES                 | 2775                          | 1.028852                             |
| 8  | HAS_NEW_NAME            | 1571                          | 0.582460                             |
| 9  | ON_COMMIT               | 1086                          | 0.402643                             |
| 10 | DEPENDS_ON              | 962                           | 0.356669                             |
| 11 | HAS_KEY                 | 668                           | 0.247666                             |
| 12 | HAS_VALUE               | 668                           | 0.247666                             |
| 13 | CONTAINS                | 589                           | 0.218376                             |
| 14 | OF_TYPE                 | 329                           | 0.121979                             |
| 15 | EXPORTS                 | 275                           | 0.101958                             |
| 16 | REFERENCES              | 196                           | 0.072668                             |
| 17 | DECLARES                | 185                           | 0.068590                             |
| 18 | DECLARES_DEV_DEPENDENCY | 169                           | 0.062658                             |
| 19 | DECLARES_DEPENDENCY     | 161                           | 0.059692                             |
| 20 | HAS_MEMBER              | 99                            | 0.036705                             |
| 21 | HAS_TYPE_ARGUMENT       | 92                            | 0.034110                             |
| 22 | DECLARES_SCRIPT         | 91                            | 0.033739                             |
| 23 | RESOLVES_TO             | 80                            | 0.029661                             |
| 24 | RETURNS                 | 80                            | 0.029661                             |
| 25 | HAS_PARAMETER           | 70                            | 0.025953                             |
| 26 | CONTAINS_VALUE          | 51                            | 0.018909                             |
| 27 | COPIES                  | 43                            | 0.015943                             |
| 28 | INITIALIZED_WITH        | 32                            | 0.011864                             |
| 29 | HAS_HEAD                | 30                            | 0.011123                             |

## Chart 2a - Highest relationship count by type

Values under 0.5% will be grouped into "others" to get a cleaner plot. The group "others" is then broken down in the second chart.

<Figure size 640x480 with 0 Axes>



Relationship types (more than 0.5% overall)

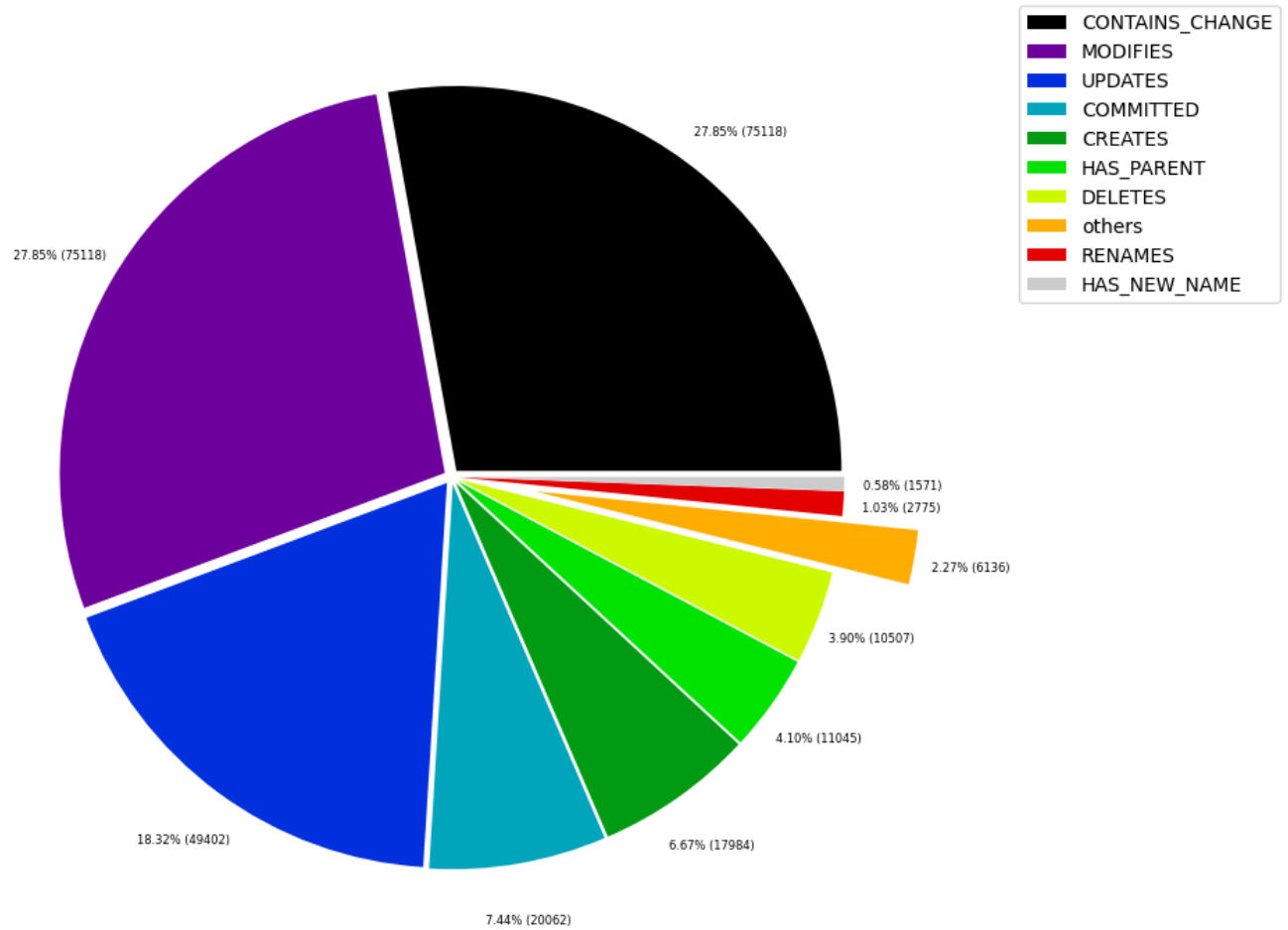


Table 2b - Lowest relationship count by type

Lists the 30 relationships type with the lowest number of occurrences up to 0.5% of the total node count. This is essentially breaking down the "others" slice from the chart above.

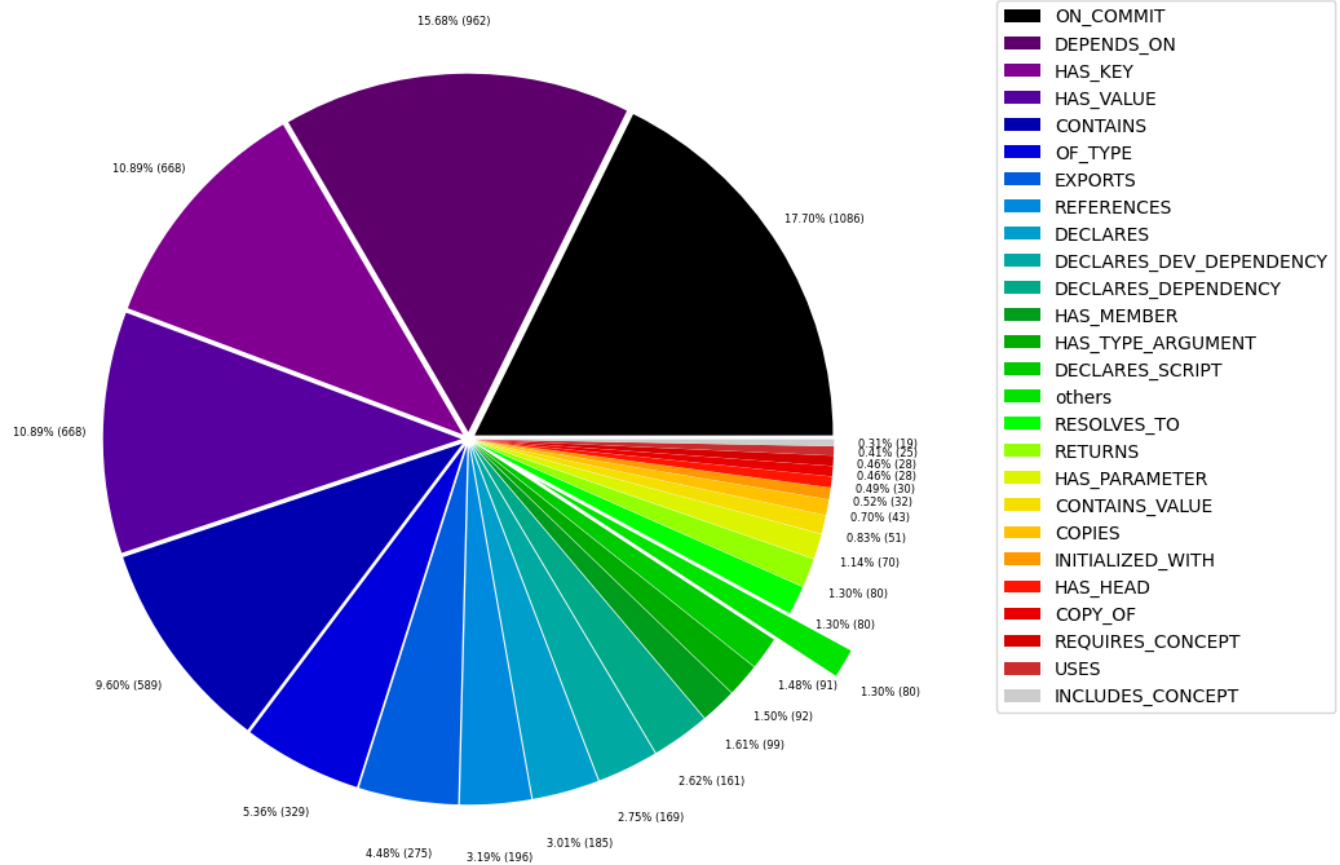
|    | relationshipType        | nodesWithThatRelationshipType | nodesWithThatRelationshipTypePercent |
|----|-------------------------|-------------------------------|--------------------------------------|
| 0  | CONSTRAINED_BY          | 4                             | 0.001483                             |
| 1  | REFERENCED_PROJECTS     | 5                             | 0.001854                             |
| 2  | MEMBER                  | 6                             | 0.002225                             |
| 3  | HAS_ROOT                | 6                             | 0.002225                             |
| 4  | HAS_NPM_PACKAGE         | 6                             | 0.002225                             |
| 5  | HAS_CONFIG              | 6                             | 0.002225                             |
| 6  | HAS_ARGUMENT            | 6                             | 0.002225                             |
| 7  | DECLARES_ENGINE         | 6                             | 0.002225                             |
| 8  | CONTAINS_PROJECT        | 6                             | 0.002225                             |
| 9  | CALLS                   | 6                             | 0.002225                             |
| 10 | PARENT                  | 6                             | 0.002225                             |
| 11 | EXTENDS                 | 7                             | 0.002595                             |
| 12 | SIMILAR                 | 10                            | 0.003708                             |
| 13 | INCLUDES_CONCEPT        | 19                            | 0.007044                             |
| 14 | USES                    | 25                            | 0.009269                             |
| 15 | REQUIRES_CONCEPT        | 28                            | 0.010381                             |
| 16 | COPY_OF                 | 28                            | 0.010381                             |
| 17 | HAS_HEAD                | 30                            | 0.011123                             |
| 18 | INITIALIZED_WITH        | 32                            | 0.011864                             |
| 19 | COPIES                  | 43                            | 0.015943                             |
| 20 | CONTAINS_VALUE          | 51                            | 0.018909                             |
| 21 | HAS_PARAMETER           | 70                            | 0.025953                             |
| 22 | RETURNS                 | 80                            | 0.029661                             |
| 23 | RESOLVES_TO             | 80                            | 0.029661                             |
| 24 | DECLARES_SCRIPT         | 91                            | 0.033739                             |
| 25 | HAS_TYPE_ARGUMENT       | 92                            | 0.034110                             |
| 26 | HAS_MEMBER              | 99                            | 0.036705                             |
| 27 | DECLARES_DEPENDENCY     | 161                           | 0.059692                             |
| 28 | DECLARES_DEV_DEPENDENCY | 169                           | 0.062658                             |
| 29 | DECLARES                | 185                           | 0.068590                             |

## Chart 2b - Lowest relationship count by type

Shows the lowest (less than 0.5% overall) relationship types. This plot breaks down the "others" slice of the pie chart above. Values under 0.01% will be grouped into "others" to get a cleaner plot.

<Figure size 640x480 with 0 Axes>

Relationship types (less than 0.5% overall)



## Node labels with their relationships

Table 3a - Highest relationship count by node labels and relationship type

Lists the 30 node labels and their relationship types with the highest number of occurrences.

|    | sourceLabels                                      | relationType            | targetLabels                           | numberOfRelationships | numberOfNodesWithSameLabelsAsSource | numberOfNodes' |
|----|---|-------------------------|--|-----------------------|-------------------------------------|----------------|
| 0  | [Git, Commit]                                     | CONTAINS_CHANGE         | [Git, Change]                          | 75118                 |                                     | 10031          |
| 1  | [Git, Change]                                     | MODIFIES                | [File, Git]                            | 75118                 |                                     | 75118          |
| 2  | [Git, Change]                                     | UPDATES                 | [File, Git]                            | 49402                 |                                     | 75118          |
| 3  | [Git, Change]                                     | CREATES                 | [File, Git]                            | 17984                 |                                     | 75118          |
| 4  | [Git, Commit]                                     | HAS_PARENT              | [Git, Commit]                          | 11045                 |                                     | 10031          |
| 5  | [Git, Change]                                     | DELETES                 | [File, Git]                            | 10507                 |                                     | 75118          |
| 6  | [Author, Git, Person]                             | COMMITTED               | [Git, Commit]                          | 10031                 |                                     | 1183           |
| 7  | [Committer, Git, Person]                          | COMMITTED               | [Git, Commit]                          | 10031                 |                                     | 371            |
| 8  | [Git, Change]                                     | RENAMES                 | [File, Git]                            | 2775                  |                                     | 75118          |
| 9  | [File, Git]                                       | HAS_NEW_NAME            | [File, Git]                            | 1571                  |                                     | 5150           |
| 10 | [Git, Tag]  | ON_COMMIT               | [Git, Commit]                          | 1086                  |                                     | 1086           |
| 11 | [Json, Value, Object]                             | HAS_KEY                 | [Json, Key]                            | 668                   |                                     | 133            |
| 12 | [Json, Key]                                       | HAS_VALUE               | [Json, Value, Scalar]                  | 552                   |                                     | 668            |
| 13 | [TS, Function]                                    | DEPENDS_ON              | [TS, ExternalDeclaration]              | 285                   |                                     | 47             |
| 14 | [TS, ExternalModule]                              | EXPORTS                 | [TS, ExternalDeclaration]              | 215                   |                                     | 25             |
| 15 | [Package, File, Json, NPM]                        | DECLARES_DEV_DEPENDENCY | [NPM, Dependency]                      | 169                   |                                     | 29             |
| 16 | [Package, File, Json, NPM]                        | DECLARES_DEPENDENCY     | [NPM, Dependency]                      | 161                   |                                     | 29             |
| 17 | [File, TS, Local, Module, Mark4ModuleWeaklyCon... | DEPENDS_ON              | [TS, ExternalDeclaration]              | 152                   |                                     | 2              |
| 18 | [Type, TS, Union, ExternalType]                   | CONTAINS                | [Type, TS, Primitive, ExternalType]    | 144                   |                                     | 117            |
| 19 | [Type, TS, Declared, ExternalType]                | REFERENCES              | [TS, ExternalDeclaration]              | 141                   |                                     | 272            |
| 20 | [TS, Function]                                    | DEPENDS_ON              | [TS, ExternalModule]                   | 131                   |                                     | 47             |
| 21 | [Type, TS, Union, ExternalType]                   | CONTAINS                | [Type, TS, Literal, ExternalType]      | 119                   |                                     | 117            |
| 22 | [Json, Key]                                       | HAS_VALUE               | [Json, Value, Object]                  | 104                   |                                     | 668            |
| 23 | [Type, Object, TS, ExternalType]                  | HAS_MEMBER              | [Type, TS, ObjectMember, ExternalType] | 98                    |                                     | 38             |
| 24 | [Package, File, Json, NPM]                        | DECLARES_SCRIPT         | [NPM, Script]                          | 91                    |                                     | 29             |
| 25 | [Type, TS, Union, ExternalType]                   | CONTAINS                | [Type, TS, Declared, ExternalType]     | 69                    |                                     | 117            |
| 26 | [File, Directory]                                 | CONTAINS                | [File, Directory]                      | 63                    |                                     | 34             |
| 27 | [TS, Interface]                                   | DECLARES                | [TS, Property]                         | 61                    |                                     | 18             |
| 28 | [File, Directory]                                 | CONTAINS                | [Package, File, Json, NPM]             | 58                    |                                     | 34             |
| 29 | [File, Git]                                       | RESOLVES_TO             | [Package, File, Json, NPM]             | 57                    |                                     | 5150           |

## Graph Density

total\_number\_of\_nodes (vertices): 96498

total\_number\_of\_relationships (edges): 269718

-> total directed graph density: 2.8965285035972846e-05

-> total directed graph density in percent: 0.0028965285035972847