

# 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`.

Total number of nodes: 90727

|    | nodeLabels                                  | nodesWithThatLabels | nodesWithThatLabelsPercent |
|----|---|---------------------|----------------------------|
| 0  | [Git, Change]                               | 71594               | 78.911460                  |
| 1  | [Git, Commit]                               | 9827                | 10.831395                  |
| 2  | [File, Git]                                 | 5042                | 5.557331                   |
| 3  | [Author, Git, Person]                       | 1181                | 1.301707                   |
| 4  | [Git, Tag]                                  | 1045                | 1.151807                   |
| 5  | [Committer, Git, Person]                    | 371                 | 0.408919                   |
| 6  | [Type, TS, Primitive, ExternalType]         | 291                 | 0.320742                   |
| 7  | [Type, TS, Declared, ExternalType]          | 286                 | 0.315231                   |
| 8  | [TS, ExternalDeclaration]                   | 211                 | 0.232566                   |
| 9  | [Type, TS, Literal, ExternalType]           | 136                 | 0.149900                   |
| 10 | [Type, TS, Union, ExternalType]             | 120                 | 0.132265                   |
| 11 | [Type, TS, ObjectMember, ExternalType]      | 98                  | 0.108016                   |
| 12 | [TS, Property]                              | 65                  | 0.071644                   |
| 13 | [TS, Function]                              | 47                  | 0.051804                   |
| 14 | [Type, TS, Object, ExternalType]            | 38                  | 0.041884                   |
| 15 | [Type, TS, FunctionParameter, ExternalType] | 38                  | 0.041884                   |
| 16 | [TS, Parameter]                             | 33                  | 0.036373                   |
| 17 | [Type, TS, Function, ExternalType]          | 33                  | 0.036373                   |
| 18 | [TS, ExternalModule]                        | 25                  | 0.027555                   |
| 19 | [TS, Variable]                              | 24                  | 0.026453                   |
| 20 | [Git, Branch]                               | 22                  | 0.024249                   |
| 21 | [TS, Literal, Value]                        | 20                  | 0.022044                   |
| 22 | [jqAssistant, Rule, Concept]                | 19                  | 0.020942                   |
| 23 | [TS, Interface]                             | 18                  | 0.019840                   |
| 24 | [Type, TS, Intersection, ExternalType]      | 17                  | 0.018738                   |
| 25 | [File, Local, Directory]                    | 16                  | 0.017635                   |
| 26 | [TS, TypeAlias]                             | 14                  | 0.015431                   |
| 27 | [TS, Declared, Value]                       | 13                  | 0.014329                   |
| 28 | [Type, TS, NotIdentified, ExternalType]     | 11                  | 0.012124                   |
| 29 | [TS, EnumMember]                            | 8                   | 0.008818                   |

## 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>

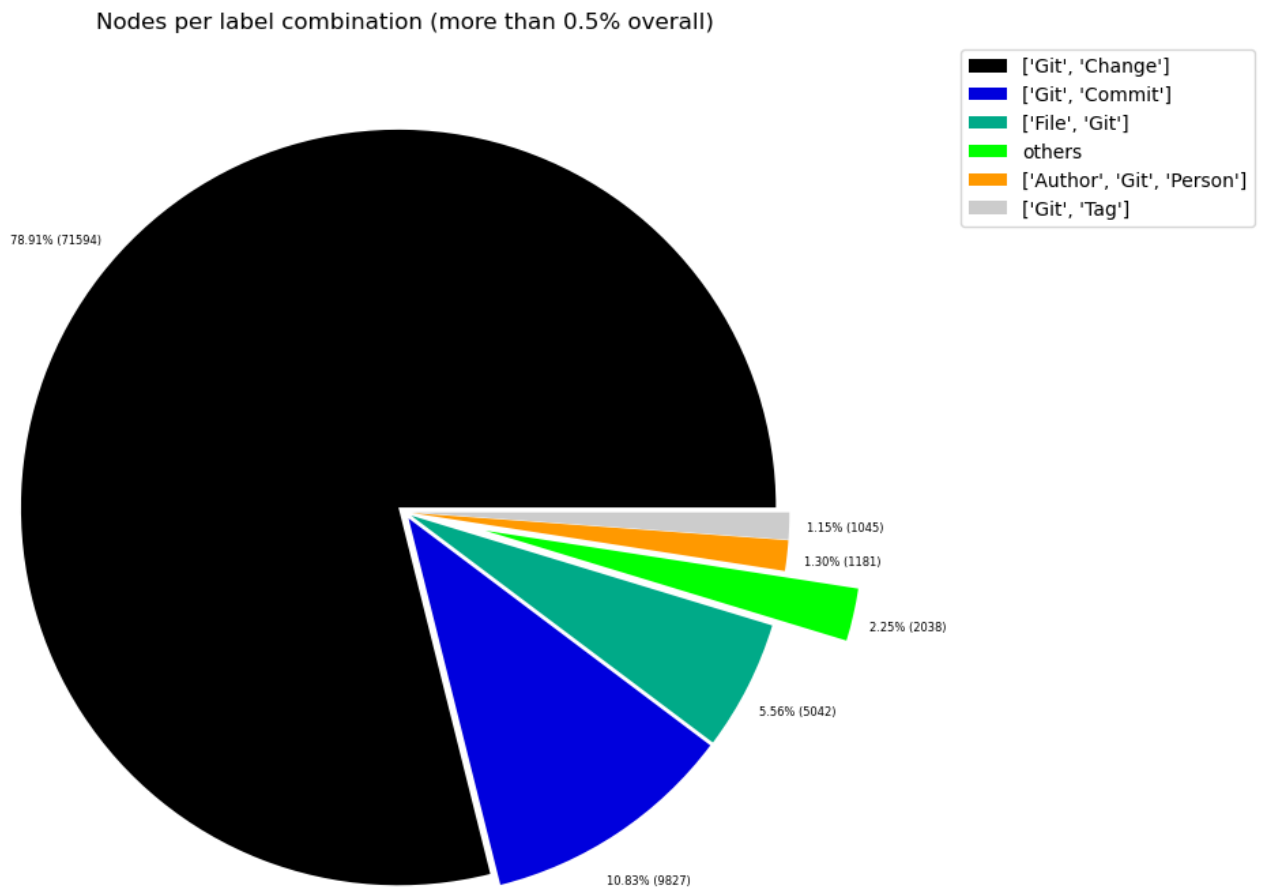


Table 1b - Lowest node count by label combination

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                   | 0.001102                   |
| 1  | [File, TS, Scan]                                 | 1                   | 0.001102                   |
| 2  | [TS, Class]                                      | 1                   | 0.001102                   |
| 3  | [File, Directory]                                | 1                   | 0.001102                   |
| 4  | [TS, Method]                                     | 1                   | 0.001102                   |
| 5  | [TS, ObjectMember, Value]                        | 1                   | 0.001102                   |
| 6  | [TS, Constructor]                                | 1                   | 0.001102                   |
| 7  | [TS, Enum]                                       | 2                   | 0.002204                   |
| 8  | [TS, Object, Value]                              | 3                   | 0.003307                   |
| 9  | [Type, TS, Tuple, ExternalType]                  | 3                   | 0.003307                   |
| 10 | [TS, Function, Value]                            | 4                   | 0.004409                   |
| 11 | [TS, TypeParameter]                              | 4                   | 0.004409                   |
| 12 | [TS, Value, Complex]                             | 5                   | 0.005511                   |
| 13 | [Type, TS, TypeParameterReference, ExternalType] | 6                   | 0.006613                   |
| 14 | [File, TS, Local, Module]                        | 6                   | 0.006613                   |
| 15 | [File, Local]                                    | 6                   | 0.006613                   |
| 16 | [Project, TS]                                    | 6                   | 0.006613                   |
| 17 | [TS, Value, Member]                              | 6                   | 0.006613                   |
| 18 | [TS, Value, Call]                                | 6                   | 0.006613                   |
| 19 | [TS, EnumMember]                                 | 8                   | 0.008818                   |
| 20 | [Type, TS, NotIdentified, ExternalType]          | 11                  | 0.012124                   |
| 21 | [TS, Declared, Value]                            | 13                  | 0.014329                   |
| 22 | [TS, TypeAlias]                                  | 14                  | 0.015431                   |
| 23 | [File, Local, Directory]                         | 16                  | 0.017635                   |
| 24 | [Type, TS, Intersection, ExternalType]           | 17                  | 0.018738                   |
| 25 | [TS, Interface]                                  | 18                  | 0.019840                   |
| 26 | [jQAssistant, Rule, Concept]                     | 19                  | 0.020942                   |
| 27 | [TS, Literal, Value]                             | 20                  | 0.022044                   |
| 28 | [Git, Branch]                                    | 22                  | 0.024249                   |
| 29 | [TS, Variable]                                   | 24                  | 0.026453                   |

## 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>

14.28% (12955)



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.

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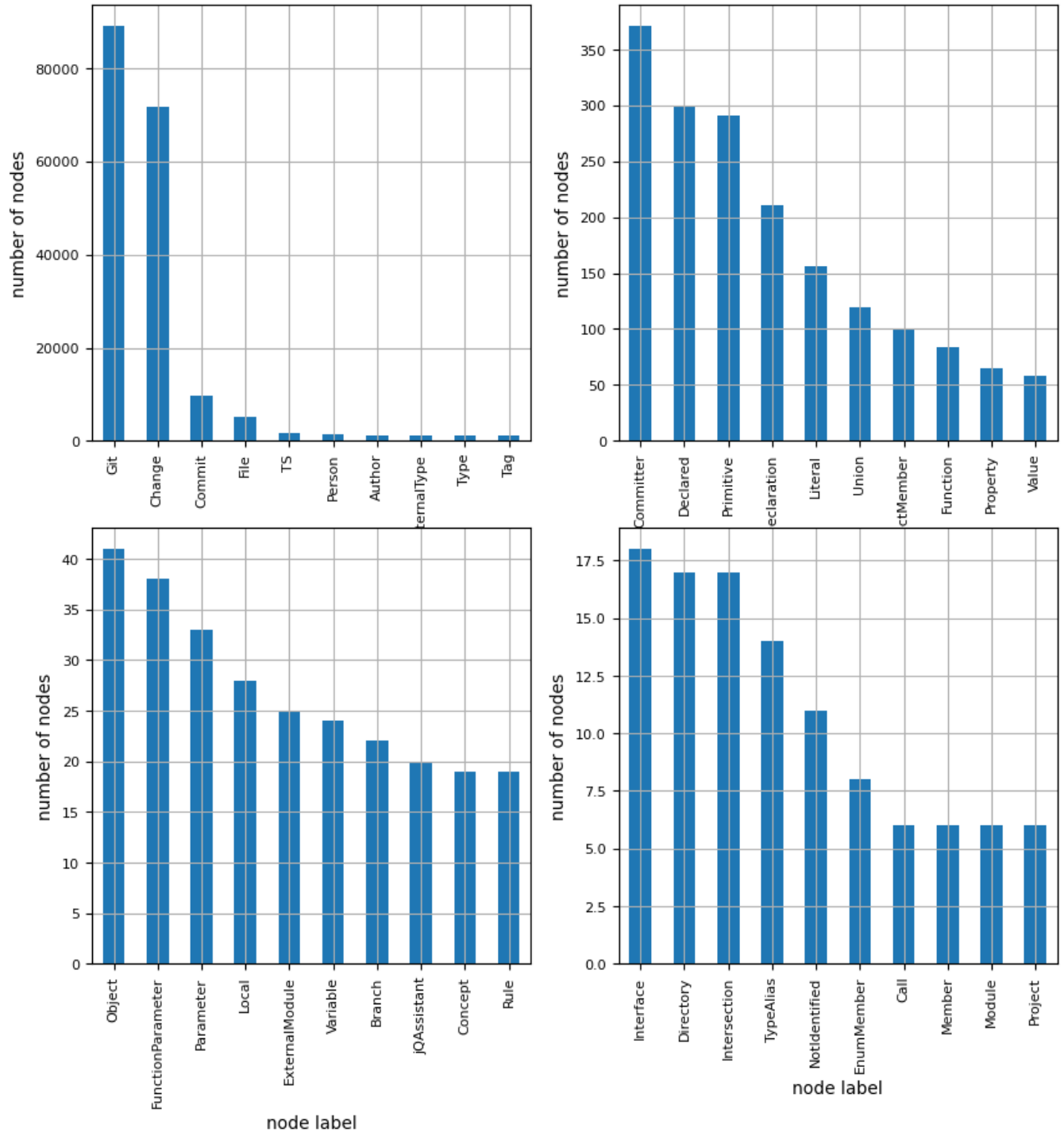
|    | nodeLabel           | nodesWithThatLabel | nodesWithThatLabelPercent |
|----|---------------------|--------------------|---------------------------|
| 0  | Git                 | 89082              | 98.186868                 |
| 1  | Change              | 71594              | 78.911460                 |
| 2  | Commit              | 9827               | 10.831395                 |
| 3  | File                | 5072               | 5.590398                  |
| 4  | TS                  | 1602               | 1.765737                  |
| 5  | Person              | 1552               | 1.710626                  |
| 6  | Author              | 1181               | 1.301707                  |
| 7  | ExternalType        | 1077               | 1.187078                  |
| 8  | Type                | 1077               | 1.187078                  |
| 9  | Tag                 | 1045               | 1.151807                  |
| 10 | Committer           | 371                | 0.408919                  |
| 11 | Declared            | 299                | 0.329560                  |
| 12 | Primitive           | 291                | 0.320742                  |
| 13 | ExternalDeclaration | 211                | 0.232566                  |
| 14 | Literal             | 156                | 0.171944                  |
| 15 | Union               | 120                | 0.132265                  |
| 16 | ObjectMember        | 99                 | 0.109119                  |
| 17 | Function            | 84                 | 0.092585                  |
| 18 | Property            | 65                 | 0.071644                  |
| 19 | Value               | 58                 | 0.063928                  |
| 20 | Object              | 41                 | 0.045191                  |
| 21 | FunctionParameter   | 38                 | 0.041884                  |
| 22 | Parameter           | 33                 | 0.036373                  |
| 23 | Local               | 28                 | 0.030862                  |
| 24 | ExternalModule      | 25                 | 0.027555                  |
| 25 | Variable            | 24                 | 0.026453                  |
| 26 | Branch              | 22                 | 0.024249                  |
| 27 | jqAssistant         | 20                 | 0.022044                  |
| 28 | Concept             | 19                 | 0.020942                  |
| 29 | Rule                | 19                 | 0.020942                  |
| 30 | Interface           | 18                 | 0.019840                  |
| 31 | Directory           | 17                 | 0.018738                  |
| 32 | Intersection        | 17                 | 0.018738                  |
| 33 | TypeAlias           | 14                 | 0.015431                  |
| 34 | NotIdentified       | 11                 | 0.012124                  |
| 35 | EnumMember          | 8                  | 0.008818                  |
| 36 | Call                | 6                  | 0.006613                  |
| 37 | Member              | 6                  | 0.006613                  |
| 38 | Module              | 6                  | 0.006613                  |
| 39 | Project             | 6                  | 0.006613                  |

## 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: 256271

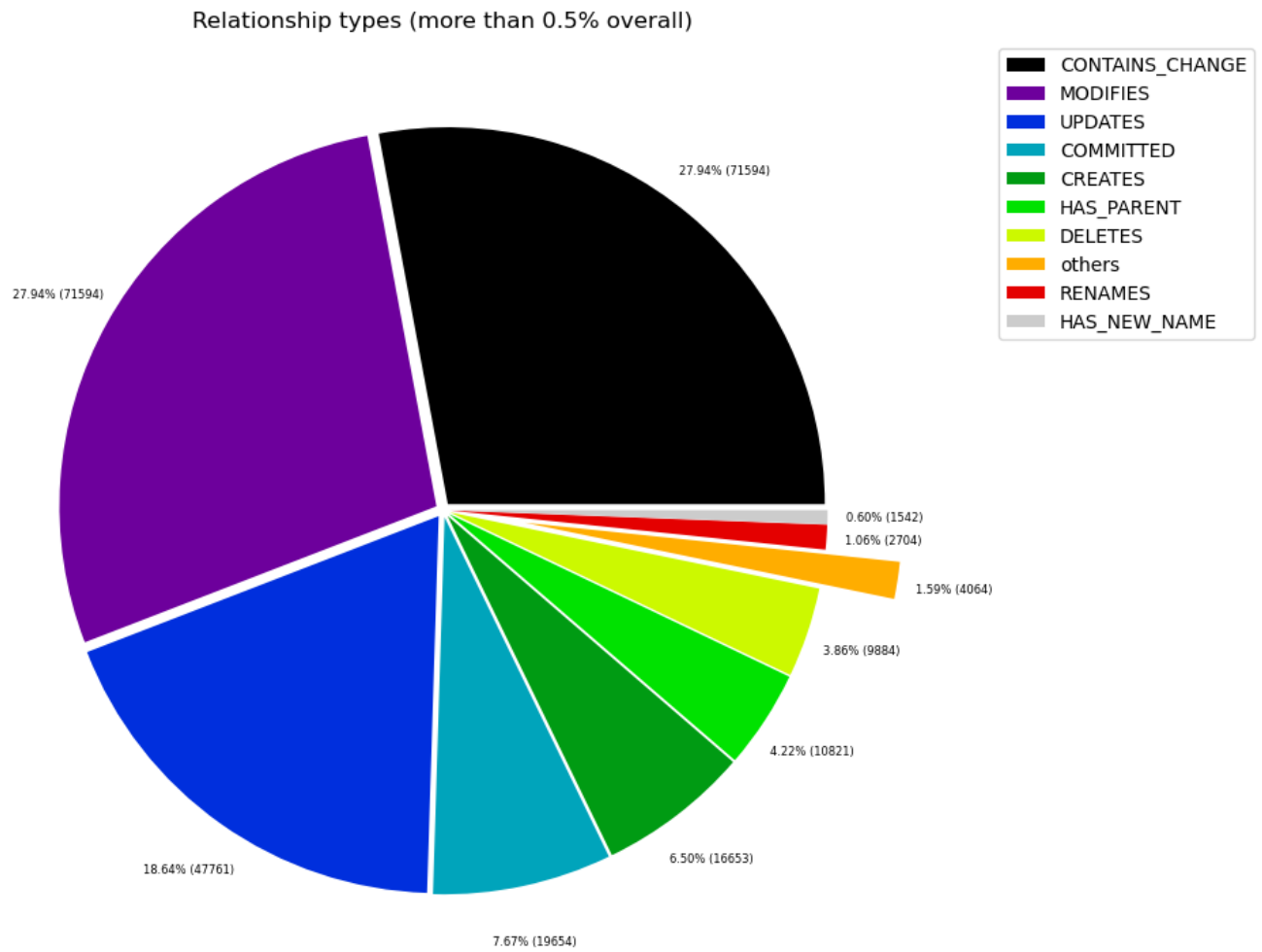
|    | relationshipType  | nodesWithThatRelationshipType | nodesWithThatRelationshipTypePercent |
|----|-------------------|-------------------------------|--------------------------------------|
| 0  | CONTAINS_CHANGE   | 71594                         | 27.936832                            |
| 1  | MODIFIES          | 71594                         | 27.936832                            |
| 2  | UPDATES           | 47761                         | 18.636912                            |
| 3  | COMMITTED         | 19654                         | 7.669225                             |
| 4  | CREATES           | 16653                         | 6.498199                             |
| 5  | HAS_PARENT        | 10821                         | 4.222483                             |
| 6  | DELETES           | 9884                          | 3.856855                             |
| 7  | RENAMES           | 2704                          | 1.055133                             |
| 8  | HAS_NEW_NAME      | 1542                          | 0.601707                             |
| 9  | ON_COMMIT         | 1045                          | 0.407771                             |
| 10 | DEPENDS_ON        | 953                           | 0.371872                             |
| 11 | CONTAINS          | 465                           | 0.181449                             |
| 12 | OF_TYPE           | 330                           | 0.128770                             |
| 13 | EXPORTS           | 271                           | 0.105747                             |
| 14 | REFERENCES        | 198                           | 0.077262                             |
| 15 | DECLARES          | 185                           | 0.072189                             |
| 16 | HAS_MEMBER        | 99                            | 0.038631                             |
| 17 | HAS_TYPE_ARGUMENT | 99                            | 0.038631                             |
| 18 | RETURNS           | 81                            | 0.031607                             |
| 19 | HAS_PARAMETER     | 71                            | 0.027705                             |
| 20 | INITIALIZED_WITH  | 32                            | 0.012487                             |
| 21 | COPIES            | 29                            | 0.011316                             |
| 22 | REQUIRES_CONCEPT  | 28                            | 0.010926                             |
| 23 | USES              | 25                            | 0.009755                             |
| 24 | RESOLVES_TO       | 23                            | 0.008975                             |
| 25 | HAS_HEAD          | 22                            | 0.008585                             |
| 26 | COPY_OF           | 21                            | 0.008194                             |
| 27 | INCLUDES_CONCEPT  | 19                            | 0.007414                             |
| 28 | SIMILAR           | 10                            | 0.003902                             |
| 29 | EXTENDS           | 7                             | 0.002731                             |

### 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>





## 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.

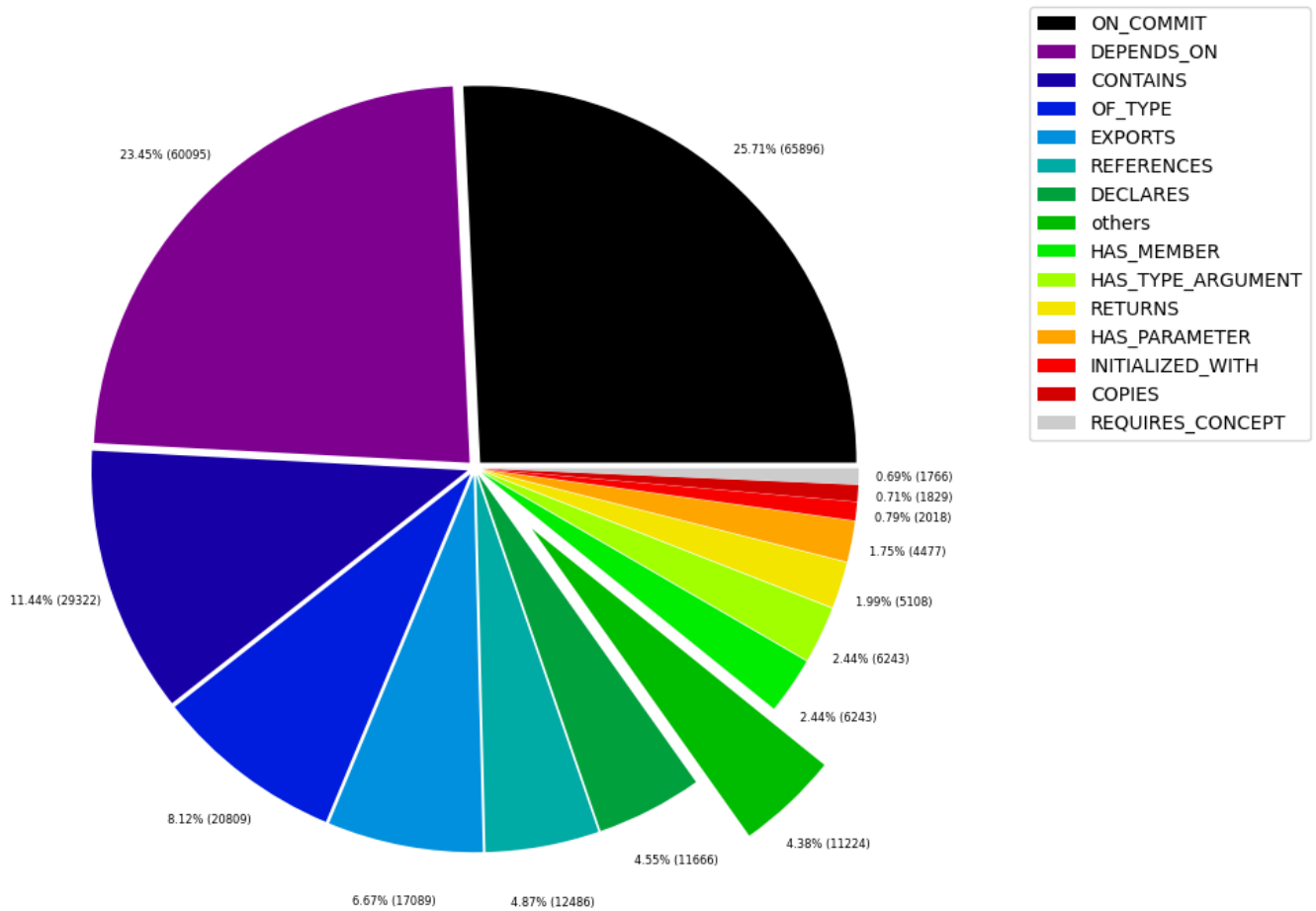
|    | relationshipType    | nodesWithThatRelationshipType | nodesWithThatRelationshipTypePercent |
|----|---------------------|-------------------------------|--------------------------------------|
| 0  | CONSTRAINED_BY      | 4                             | 0.001561                             |
| 1  | REFERENCED_PROJECTS | 5                             | 0.001951                             |
| 2  | MEMBER              | 6                             | 0.002341                             |
| 3  | HAS_ROOT            | 6                             | 0.002341                             |
| 4  | HAS_CONFIG          | 6                             | 0.002341                             |
| 5  | HAS_ARGUMENT        | 6                             | 0.002341                             |
| 6  | CONTAINS_PROJECT    | 6                             | 0.002341                             |
| 7  | CALLS               | 6                             | 0.002341                             |
| 8  | PARENT              | 6                             | 0.002341                             |
| 9  | EXTENDS             | 7                             | 0.002731                             |
| 10 | SIMILAR             | 10                            | 0.003902                             |
| 11 | INCLUDES_CONCEPT    | 19                            | 0.007414                             |
| 12 | COPY_OF             | 21                            | 0.008194                             |
| 13 | HAS_HEAD            | 22                            | 0.008585                             |
| 14 | RESOLVES_TO         | 23                            | 0.008975                             |
| 15 | USES                | 25                            | 0.009755                             |
| 16 | REQUIRES_CONCEPT    | 28                            | 0.010926                             |
| 17 | COPIES              | 29                            | 0.011316                             |
| 18 | INITIALIZED_WITH    | 32                            | 0.012487                             |
| 19 | HAS_PARAMETER       | 71                            | 0.027705                             |
| 20 | RETURNS             | 81                            | 0.031607                             |
| 21 | HAS_TYPE_ARGUMENT   | 99                            | 0.038631                             |
| 22 | HAS_MEMBER          | 99                            | 0.038631                             |
| 23 | DECLARES            | 185                           | 0.072189                             |
| 24 | REFERENCES          | 198                           | 0.077262                             |
| 25 | EXPORTS             | 271                           | 0.105747                             |
| 26 | OF_TYPE             | 330                           | 0.128770                             |
| 27 | CONTAINS            | 465                           | 0.181449                             |
| 28 | DEPENDS_ON          | 953                           | 0.371872                             |
| 29 | ON_COMMIT           | 1045                          | 0.407771                             |

## 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 | numberOfNodesWithSam |
|----|---|-------------------|---|-----------------------|-------------------------------------|----------------------|
| 0  | [Git, Commit]                                     | CONTAINS_CHANGE   | [Git, Change]                               | 71594                 | 9827                                |                      |
| 1  | [Git, Change]                                     | MODIFIES          | [File, Git]                                 | 71594                 | 71594                               |                      |
| 2  | [Git, Change]                                     | UPDATES           | [File, Git]                                 | 47761                 | 71594                               |                      |
| 3  | [Git, Change]                                     | CREATES           | [File, Git]                                 | 16653                 | 71594                               |                      |
| 4  | [Git, Commit]                                     | HAS_PARENT        | [Git, Commit]                               | 10821                 | 9827                                |                      |
| 5  | [Git, Change]                                     | DELETES           | [File, Git]                                 | 9884                  | 71594                               |                      |
| 6  | [Author, Git, Person]                             | COMMITTED         | [Git, Commit]                               | 9827                  | 1181                                |                      |
| 7  | [Committer, Git, Person]                          | COMMITTED         | [Git, Commit]                               | 9827                  | 371                                 |                      |
| 8  | [Git, Change]                                     | RENAMES           | [File, Git]                                 | 2704                  | 71594                               |                      |
| 9  | [File, Git]                                       | HAS_NEW_NAME      | [File, Git]                                 | 1542                  | 5042                                |                      |
| 10 | [Git, Tag]  | ON_COMMIT         | [Git, Commit]                               | 1045                  | 1045                                |                      |
| 11 | [TS, Function]                                    | DEPENDS_ON        | [TS, ExternalDeclaration]                   | 280                   | 47                                  |                      |
| 12 | [TS, ExternalModule]                              | EXPORTS           | [TS, ExternalDeclaration]                   | 211                   | 25                                  |                      |
| 13 | [File, TS, Local, Module, Mark4ModuleWeaklyCon... | DEPENDS_ON        | [TS, ExternalDeclaration]                   | 188                   | 3                                   |                      |
| 14 | [Type, TS, Union, ExternalType]                   | CONTAINS          | [Type, TS, Primitive, ExternalType]         | 149                   | 120                                 |                      |
| 15 | [Type, TS, Declared, ExternalType]                | REFERENCES        | [TS, ExternalDeclaration]                   | 139                   | 286                                 |                      |
| 16 | [TS, Function]                                    | DEPENDS_ON        | [TS, ExternalModule]                        | 129                   | 47                                  |                      |
| 17 | [Type, TS, Union, ExternalType]                   | CONTAINS          | [Type, TS, Literal, ExternalType]           | 119                   | 120                                 |                      |
| 18 | [Type, TS, Object, ExternalType]                  | HAS_MEMBER        | [Type, TS, ObjectMember, ExternalType]      | 98                    | 38                                  |                      |
| 19 | [Type, TS, Union, ExternalType]                   | CONTAINS          | [Type, TS, Declared, ExternalType]          | 78                    | 120                                 |                      |
| 20 | [TS, Interface]                                   | DECLARES          | [TS, Property]                              | 61                    | 18                                  |                      |
| 21 | [TS, Property]                                    | OF_TYPE           | [Type, TS, Union, ExternalType]             | 46                    | 65                                  |                      |
| 22 | [TS, Variable]                                    | DEPENDS_ON        | [TS, ExternalDeclaration]                   | 44                    | 24                                  |                      |
| 23 | [Type, TS, Declared, ExternalType]                | HAS_TYPE_ARGUMENT | [Type, TS, Declared, ExternalType]          | 43                    | 286                                 |                      |
| 24 | [Type, TS, Function, ExternalType]                | HAS_PARAMETER     | [Type, TS, FunctionParameter, ExternalType] | 38                    | 33                                  |                      |
| 25 | [File, TS, Local, Module, Mark4ModuleWeaklyCon... | DECLARES          | [TS, Function]                              | 37                    | 3                                   |                      |
| 26 | [Type, TS, ObjectMember, ExternalType]            | OF_TYPE           | [Type, TS, Union, ExternalType]             | 35                    | 98                                  |                      |
| 27 | [TS, Function]                                    | HAS_PARAMETER     | [TS, Parameter]                             | 33                    | 47                                  |                      |
| 28 | [Type, TS, ObjectMember, ExternalType]            | OF_TYPE           | [Type, TS, Primitive, ExternalType]         | 31                    | 98                                  |                      |
| 29 | [TS, Function]                                    | DEPENDS_ON        | [TS, Function]                              | 30                    | 47                                  |                      |

## Graph Density

total\_number\_of\_nodes (vertices): 90727

total\_number\_of\_relationships (edges): 256271

-> total directed graph density: 3.113372959701841e-05

-> total directed graph density in percent: 0.003113372959701841