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]	83672	78.282266
1	[Git, Commit]	10892	10.190392
2	[File, Git]	5600	5.239276
3	[Git, Tag]	1530	1.431445
4	[Author, Git, Person]	1241	1.161061
5	[Json, Key]	668	0.624971
6	[Json, Value, Scalar]	603	0.564158
7	[Committer, Git, Person]	370	0.346166
8	[NPM, Dependency]	338	0.316228
9	[Type, TS, Primitive]	291	0.272255
10	[Type, TS, Declared]	276	0.258221
11	[TS, ExternalDeclaration]	215	0.201151
12	[Type, TS, Literal]	136	0.127240
13	[Json, Value, Object]	133	0.124433
14	[Type, TS, Union]	119	0.111335
15	[Type, TS, ObjectMember]	101	0.094494
16	[NPM, Script]	91	0.085138
17	[TS, Property]	65	0.060813
18	[TS, Function]	47	0.043972
19	[Type, TS, FunctionParameter]	40	0.037423
20	[Type, Object, TS]	39	0.036488
21	[File, Directory]	34	0.031810
22	[Type, TS, Function]	34	0.031810
23	[Git, Branch]	34	0.031810
24	[TS, Parameter]	33	0.030874
25	[Package, File, Json, NPM]	29	0.027132
26	[TS, Variable]	24	0.022454
27	[Value, TS, Literal]	20	0.018712
28	[jQAssistant, Rule, Concept]	19	0.017776
29	[Type, TS, Intersection]	17	0.015905

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)

Legend:
- ['Git', 'Change']
- ['Git', 'Commit']
- ['File', 'Git']
- others
- ['Git', 'Tag']
- ['Author', 'Git', 'Person']
- ['Json', 'Key']
- ['Json', 'Value', 'Scalar']

78.28% (83672)
10.19% (10892)
5.24% (5600)
2.51% (2679)
1.43% (1530)
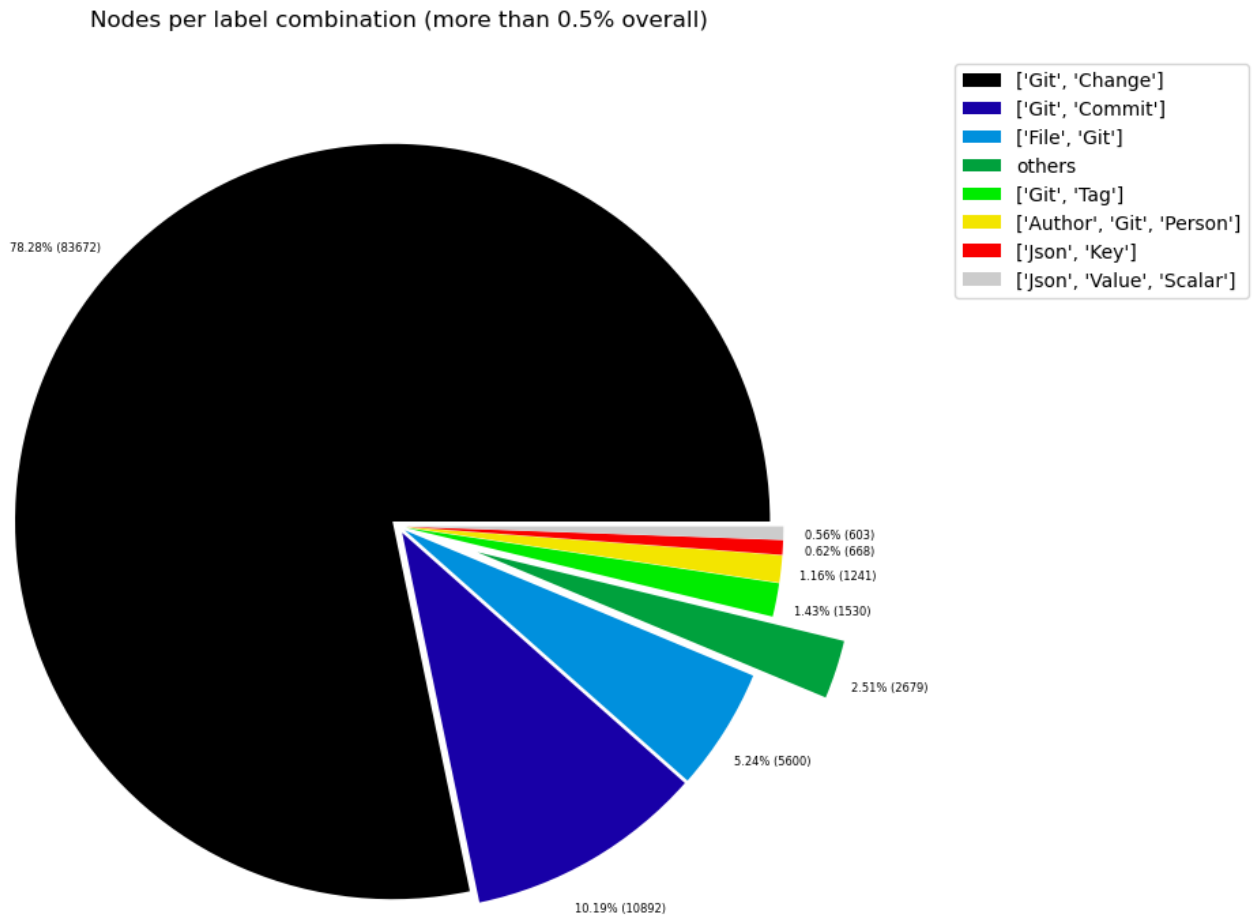1.16% (1241)
0.62% (668)
0.56% (603)

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	0.000936
1	[File, TS, Scan]	1	0.000936
2	[TS, Method]	1	0.000936
3	[Repository, File, Git]	1	0.000936
4	[TS, Constructor]	1	0.000936
5	[Value, TS, ObjectMember]	1	0.000936
6	[TS, Class]	1	0.000936
7	[TS, Enum]	2	0.001871
8	[Value, Object, TS]	3	0.002807
9	[Type, TS, Tuple]	3	0.002807
10	[Value, TS, Function]	4	0.003742
11	[TS, TypeParameter]	4	0.003742
12	[Value, TS, Complex]	5	0.004678
13	[NPM, Engine]	6	0.005614
14	[Project, TS]	6	0.005614
15	[File, Local]	6	0.005614
16	[Value, TS, Call]	6	0.005614
17	[Value, TS, Member]	6	0.005614
18	[File, TS, Local, Module]	6	0.005614
19	[Type, TS, TypeParameterReference]	6	0.005614
20	[TS, EnumMember]	8	0.007485
21	[Type, TS, NotIdentified]	11	0.010291
22	[TS, ExternalModule]	11	0.010291
23	[Json, Value, Array]	12	0.011227
24	[Value, TS, Declared]	13	0.012163
25	[TS, TypeAlias]	16	0.014969
26	[File, Directory, Local]	16	0.014969
27	[Type, TS, Intersection]	17	0.015905
28	[TS, Interface]	17	0.015905
29	[jQAssistant, Rule, Concept]	19	0.017776

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)

Legend:
- ['Committer', 'Git', 'Person']
- ['NPM', 'Dependency']
- ['Type', 'TS', 'Primitive']
- ['Type', 'TS', 'Declared']
- ['TS', 'ExternalDeclaration']
- ['Type', 'TS', 'Literal']
- ['Json', 'Value', 'Object']
- ['Type', 'TS', 'Union']
- ['Type', 'TS', 'ObjectMember']
- ['NPM', 'Script']
- others
- ['TS', 'Property']
- ['TS', 'Function']
- ['Type', 'TS', 'FunctionParameter']
- ['Type', 'Object', 'TS']
- ['Git', 'Branch']
- ['Type', 'TS', 'Function']
- ['File', 'Directory']
- ['TS', 'Parameter']
- ['Package', 'File', 'Json', 'NPM']
- ['TS', 'Variable']
- ['Value', 'TS', 'Literal']
- ['jQAssistant', 'Rule', 'Concept']
- ['Type', 'TS', 'Intersection']
- ['TS', 'Interface']
- ['File', 'Directory', 'Local']
- ['TS', 'TypeAlias']
- ['Value', 'TS', 'Declared']
- ['Json', 'Value', 'Array']
- ['Type', 'TS', 'NotIdentified']
- ['TS', 'ExternalModule']

Pie chart values:
13.81% (370), 12.62% (338), 10.86% (291), 10.30% (276), 8.03% (215), 5.08% (136), 4.96% (133), 4.44% (119), 3.77% (101), 3.40% (91), 2.91% (78), 2.43% (65), 1.75% (47), 1.49% (40), 1.46% (39), 1.27% (34), 1.27% (34), 1.27% (34), 1.23% (33), 1.08% (29), 0.90% (24), 0.75% (20), 0.71% (19), 0.63% (17), 0.63% (17), 0.60% (16), 0.60% (16), 0.49% (13), 0.45% (12), 0.41% (11), 0.41% (11)
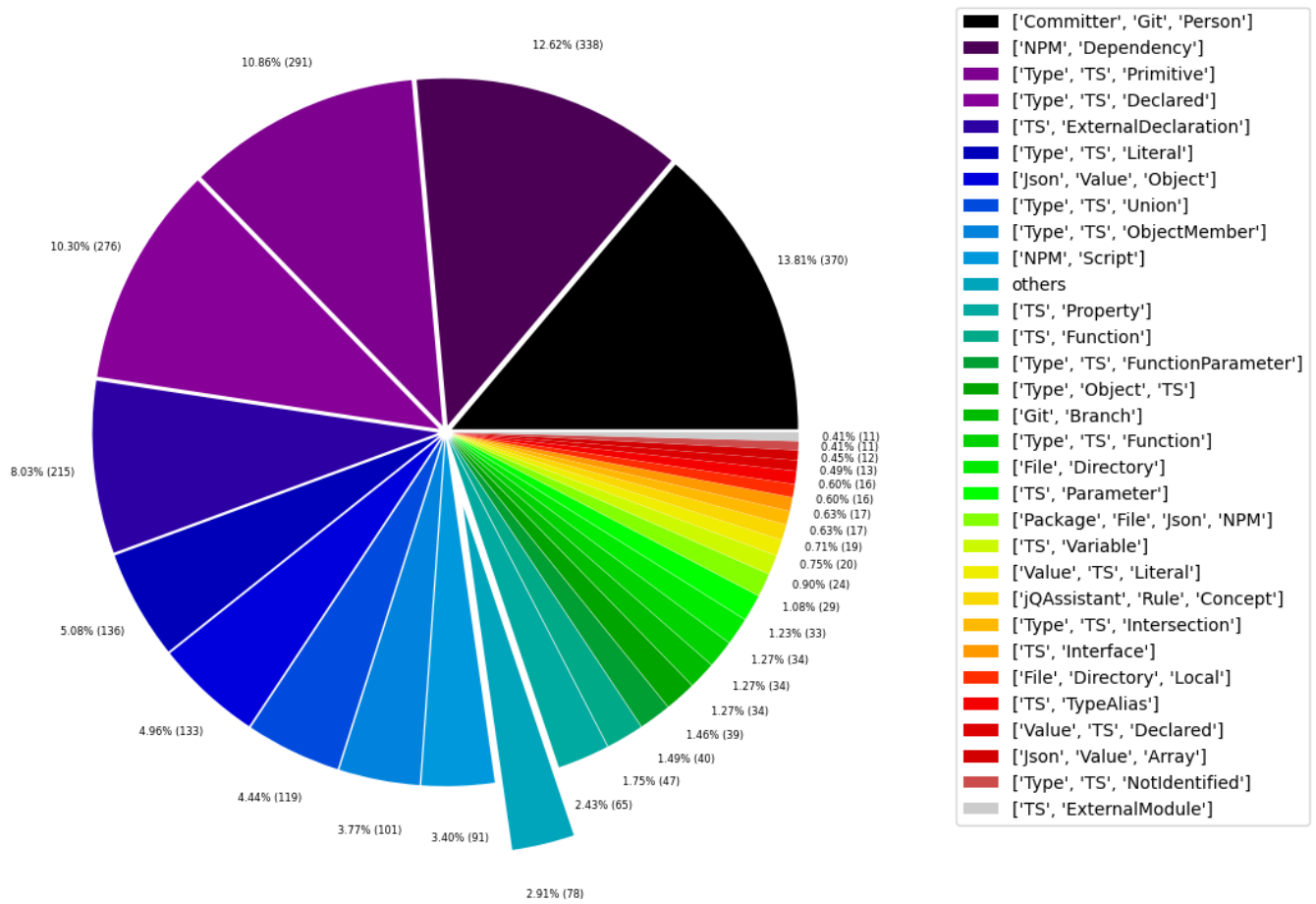
Table 1c - Highest node count by single label

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.
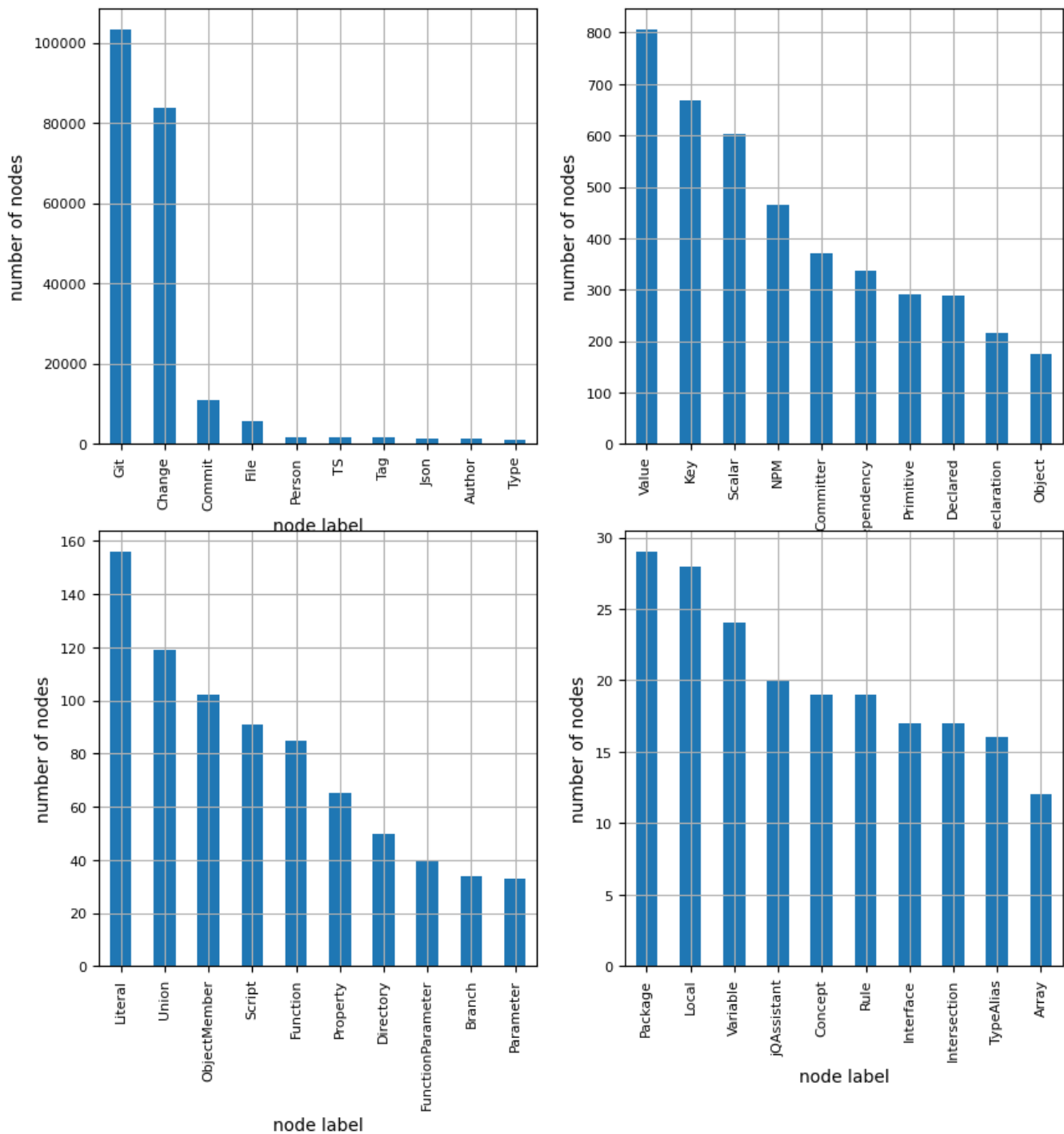
	nodeLabel	nodesWithThatLabel	nodesWithThatLabelPercent
0	Git	103340	96.683351
1	Change	83672	78.282266
2	Commit	10892	10.190392
3	File	5693	5.326285
4	Person	1611	1.507227
5	TS	1589	1.486645
6	Tag	1530	1.431445
7	Json	1445	1.351920
8	Author	1241	1.161061
9	Type	1073	1.003883
10	Value	806	0.754081
11	Key	668	0.624971
12	Scalar	603	0.564158
13	NPM	464	0.434111
14	Committer	370	0.346166
15	Dependency	338	0.316228
16	Primitive	291	0.272255
17	Declared	289	0.270384
18	ExternalDeclaration	215	0.201151
19	Object	175	0.163727
20	Literal	156	0.145951
21	Union	119	0.111335
22	ObjectMember	102	0.095430
23	Script	91	0.085138
24	Function	85	0.079525
25	Property	65	0.060813
26	Directory	50	0.046779
27	FunctionParameter	40	0.037423
28	Branch	34	0.031810
29	Parameter	33	0.030874
30	Package	29	0.027132
31	Local	28	0.026196
32	Variable	24	0.022454
33	jQAssistant	20	0.018712
34	Concept	19	0.017776
35	Rule	19	0.017776
36	Interface	17	0.015905
37	Intersection	17	0.015905
38	TypeAlias	16	0.014969
39	Array	12	0.011227

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: 319304
```

	relationshipType	nodesWithThatRelationshipType	nodesWithThatRelationshipTypePercent
0	CONTAINS_CHANGE	83672	26.204495
1	MODIFIES	83672	26.204495
2	UPDATES	55496	17.380302
3	COMMITTED	21784	6.822339
4	CREATES	19599	6.138038
5	HAS_PARENT	11955	3.744081
6	DELETES	11844	3.709318
7	HAS_COMMIT	10892	3.411169
8	HAS_FILE	5600	1.753815
9	RENAMES	3267	1.023163
10	HAS_NEW_NAME	1751	0.548380
11	HAS_TAG	1530	0.479167
12	ON_COMMIT	1530	0.479167
13	HAS_AUTHOR	1241	0.388658
14	DEPENDS_ON	887	0.277792
15	HAS_KEY	668	0.209205
16	HAS_VALUE	668	0.209205
17	CONTAINS	594	0.186030
18	HAS_COMMITTER	370	0.115877
19	OF_TYPE	337	0.105542
20	EXPORTS	309	0.096773
21	REFERENCES	197	0.061697
22	DECLARES	186	0.058252
23	DECLARES_DEV_DEPENDENCY	169	0.052928
24	DECLARES_DEPENDENCY	161	0.050422
25	HAS_MEMBER	102	0.031944
26	HAS_TYPE_ARGUMENT	94	0.029439
27	DECLARES_SCRIPT	91	0.028499
28	RETURNS	82	0.025681
29	COPIES	79	0.024741

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)

■	CONTAINS_CHANGE
■	MODIFIES
■	UPDATES
■	COMMITTED
■	CREATES
■	HAS_PARENT
■	DELETES
■	HAS_COMMIT
■	others
■	HAS_FILE
■	RENAMES
■	HAS_NEW_NAME

26.20% (83672)

26.20% (83672)

0.55% (1751)
1.02% (3267)
1.75% (5600)

3.06% (9772)

3.41% (10892)

17.38% (55496)

3.71% (11844)

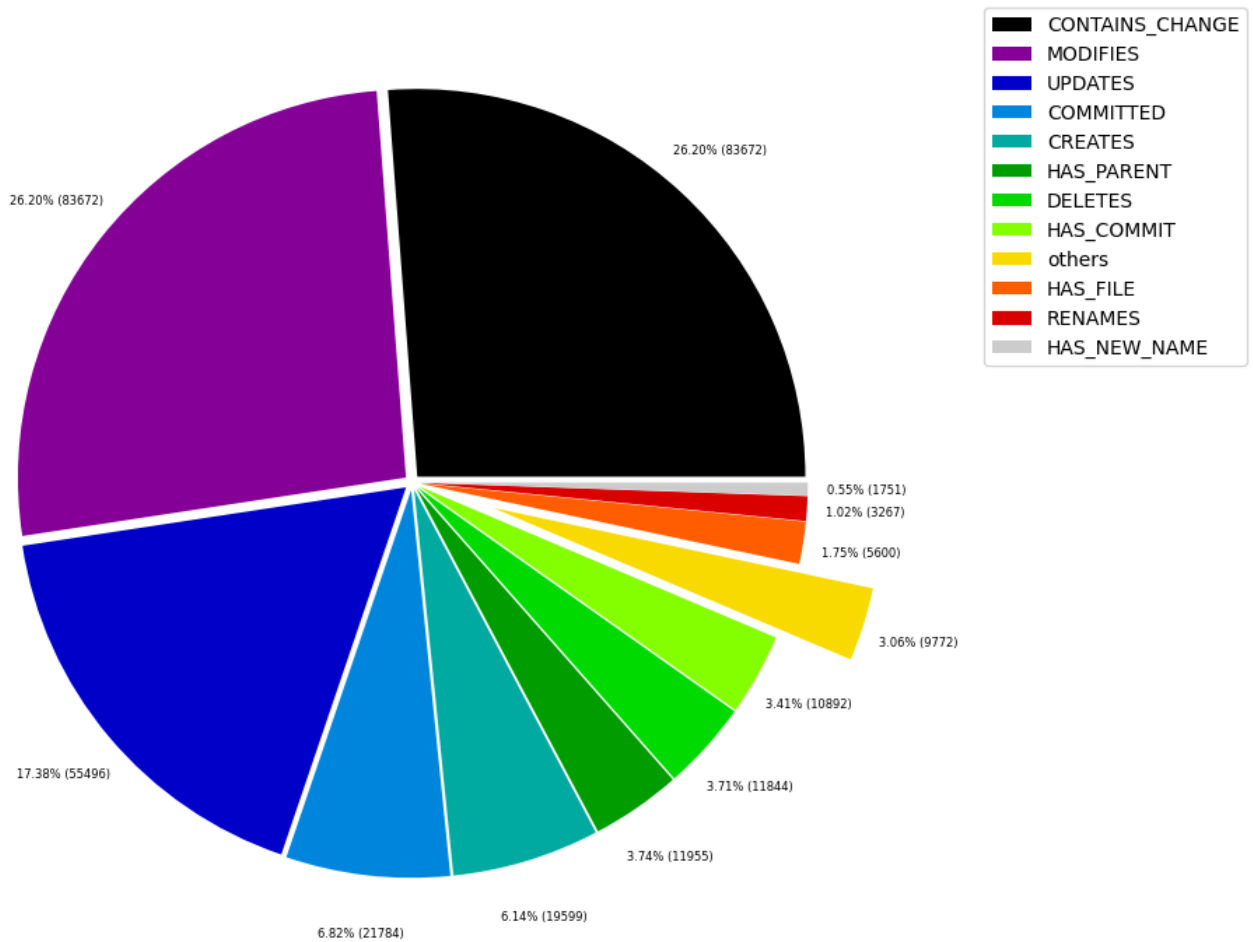3.74% (11955)

6.82% (21784)

6.14% (19599)

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.
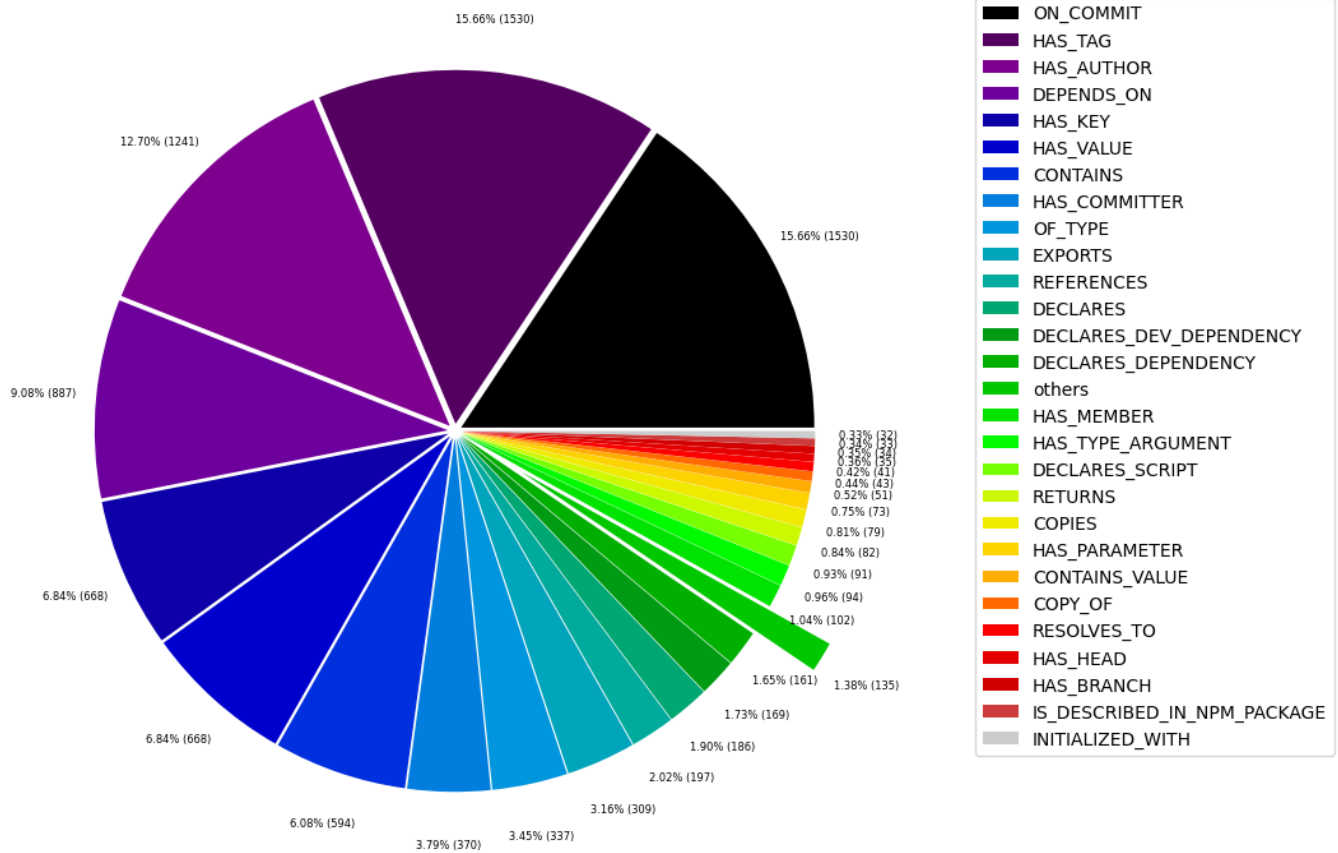
	relationshipType	nodesWithThatRelationshipType	nodesWithThatRelationshipTypePercent
0	CONSTRAINED_BY	4	0.001253
1	REFERENCED_PROJECTS	5	0.001566
2	MEMBER	6	0.001879
3	HAS_ROOT	6	0.001879
4	HAS_NPM_PACKAGE	6	0.001879
5	HAS_CONFIG	6	0.001879
6	HAS_ARGUMENT	6	0.001879
7	EXTENDS	6	0.001879
8	DECLARES_ENGINE	6	0.001879
9	CONTAINS_PROJECT	6	0.001879
10	CALLS	6	0.001879
11	PARENT	6	0.001879
12	DECLARES_PEER_DEPENDENCY	8	0.002505
13	USES	11	0.003445
14	INCLUDES_CONCEPT	19	0.005950
15	REQUIRES_CONCEPT	28	0.008769
16	INITIALIZED_WITH	32	0.010022
17	IS_DESCRIBED_IN_NPM_PACKAGE	33	0.010335
18	HAS_BRANCH	34	0.010648
19	HAS_HEAD	35	0.010961
20	RESOLVES_TO	41	0.012840
21	COPY_OF	43	0.013467
22	CONTAINS_VALUE	51	0.015972
23	HAS_PARAMETER	73	0.022862
24	COPIES	79	0.024741
25	RETURNS	82	0.025681
26	DECLARES_SCRIPT	91	0.028499
27	HAS_TYPE_ARGUMENT	94	0.029439
28	HAS_MEMBER	102	0.031944
29	DECLARES_DEPENDENCY	161	0.050422

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)

15.66% (1530)
15.66% (1530)
12.70% (1241)
9.08% (887)
6.84% (668)
6.84% (668)
6.08% (594)
3.79% (370)
3.45% (337)
3.16% (309)
2.02% (197)
1.90% (186)
1.73% (169)
1.65% (161)
1.38% (135)
1.04% (102)
0.96% (94)
0.93% (91)
0.84% (82)
0.81% (79)
0.75% (73)
0.52% (51)
0.44% (43)
0.42% (41)
0.36% (35)
0.35% (34)
0.33% (33)
0.33% (32)

ON_COMMIT
HAS_TAG
HAS_AUTHOR
DEPENDS_ON
HAS_KEY
HAS_VALUE
CONTAINS
HAS_COMMITTER
OF_TYPE
EXPORTS
REFERENCES
DECLARES
DECLARES_DEV_DEPENDENCY
DECLARES_DEPENDENCY
others
HAS_MEMBER
HAS_TYPE_ARGUMENT
DECLARES_SCRIPT
RETURNS
COPIES
HAS_PARAMETER
CONTAINS_VALUE
COPY_OF
RESOLVES_TO
HAS_HEAD
HAS_BRANCH
IS_DESCRIBED_IN_NPM_PACKAGE
INITIALIZED_WITH

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	numberOfNodesWithSame
0	[Git, Change]	MODIFIES	[File, Git]	83672	83672	
1	[Git, Commit]	CONTAINS_CHANGE	[Git, Change]	83672	10892	
2	[Git, Change]	UPDATES	[File, Git]	55496	83672	
3	[Git, Change]	CREATES	[File, Git]	19599	83672	
4	[Git, Commit]	HAS_PARENT	[Git, Commit]	11955	10892	
5	[Git, Change]	DELETES	[File, Git]	11844	83672	
6	[Repository, File, Git]	HAS_COMMIT	[Git, Commit]	10892	1	
7	[Author, Git, Person]	COMMITTED	[Git, Commit]	10892	1241	
8	[Committer, Git, Person]	COMMITTED	[Git, Commit]	10892	370	
9	[Repository, File, Git]	HAS_FILE	[File, Git]	5600	1	
10	[Git, Change]	RENAMES	[File, Git]	3267	83672	
11	[File, Git]	HAS_NEW_NAME	[File, Git]	1751	5600	
12	[Repository, File, Git]	HAS_TAG	[Git, Tag]	1530	1	
13	[Git, Tag]	ON_COMMIT	[Git, Commit]	1530	1530	
14	[Repository, File, Git]	HAS_AUTHOR	[Author, Git, Person]	1241	1	
15	[Json, Value, Object]	HAS_KEY	[Json, Key]	668	133	
16	[Json, Key]	HAS_VALUE	[Json, Value, Scalar]	552	668	
17	[Repository, File, Git]	HAS_COMMITTER	[Committer, Git, Person]	370	1	
18	[TS, Function]	DEPENDS_ON	[TS, ExternalDeclaration]	293	47	
19	[File, TS, Local, Module]	DEPENDS_ON	[TS, ExternalDeclaration]	236	6	
20	[TS, ExternalModule]	EXPORTS	[TS, ExternalDeclaration]	215	11	
21	[Package, File, Json, NPM]	DECLARES_DEV_DEPENDENCY	[NPM, Dependency]	169	29	
22	[Package, File, Json, NPM]	DECLARES_DEPENDENCY	[NPM, Dependency]	161	29	
23	[Type, TS, Union]	CONTAINS	[Type, TS, Primitive]	147	119	
24	[Type, TS, Declared]	REFERENCES	[TS, ExternalDeclaration]	143	276	
25	[Type, TS, Union]	CONTAINS	[Type, TS, Literal]	119	119	
26	[Json, Key]	HAS_VALUE	[Json, Value, Object]	104	668	
27	[Type, Object, TS]	HAS_MEMBER	[Type, TS, ObjectMember]	101	39	
28	[Package, File, Json, NPM]	DECLARES_SCRIPT	[NPM, Script]	91	29	
29	[Git, Change]	COPIES	[File, Git]	79	83672	

Graph Density

```
total_number_of_nodes (vertices): 106885
total_number_of_relationships (edges): 319304
-> total directed graph density: 2.7949555097062547e-05
-> total directed graph density in percent: 0.0027949555097062546
```