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]	77001	77.981224
1	[Git, Commit]	10243	10.373394
2	[File, Git]	5207	5.273285
3	[Author, Git, Person]	1190	1.205149
4	[Git, Tag]	1149	1.163627
5	[Json, Key]	668	0.676504
6	[Json, Value, Scalar]	603	0.610676
7	[Committer, Git, Person]	371	0.375723
8	[NPM, Dependency]	330	0.334201
9	[Type, TS, Primitive, ExternalType]	291	0.294704
10	[Type, TS, Declared, ExternalType]	276	0.279513
11	[TS, ExternalDeclaration]	215	0.217737
12	[Type, TS, Literal, ExternalType]	136	0.137731
13	[Json, Value, Object]	133	0.134693
14	[Type, TS, Union, ExternalType]	119	0.120515
15	[Type, TS, ObjectMember, ExternalType]	101	0.102286
16	[NPM, Script]	91	0.092158
17	[TS, Property]	65	0.065827
18	[TS, Function]	47	0.047598
19	[Type, TS, FunctionParameter, ExternalType]	40	0.040509
20	[Type, Object, TS, ExternalType]	39	0.039496
21	[File, Directory]	34	0.034433
22	[Type, TS, Function, ExternalType]	34	0.034433
23	[TS, Parameter]	33	0.033420
24	[Git, Branch]	31	0.031395
25	[Package, File, Json, NPM]	29	0.029369
26	[TS, ExternalModule]	25	0.025318
27	[TS, Variable]	24	0.024306
28	[Value, TS, Literal]	20	0.020255
29	[jQAssistant, Rule, Concept]	19	0.019242

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
- ['Author', 'Git', 'Person']
- ['Git', 'Tag']
- ['Json', 'Key']
- ['Json', 'Value', 'Scalar']

77.98% (77001)
0.61% (603)
0.68% (668)
1.16% (1149)
1.21% (1190)
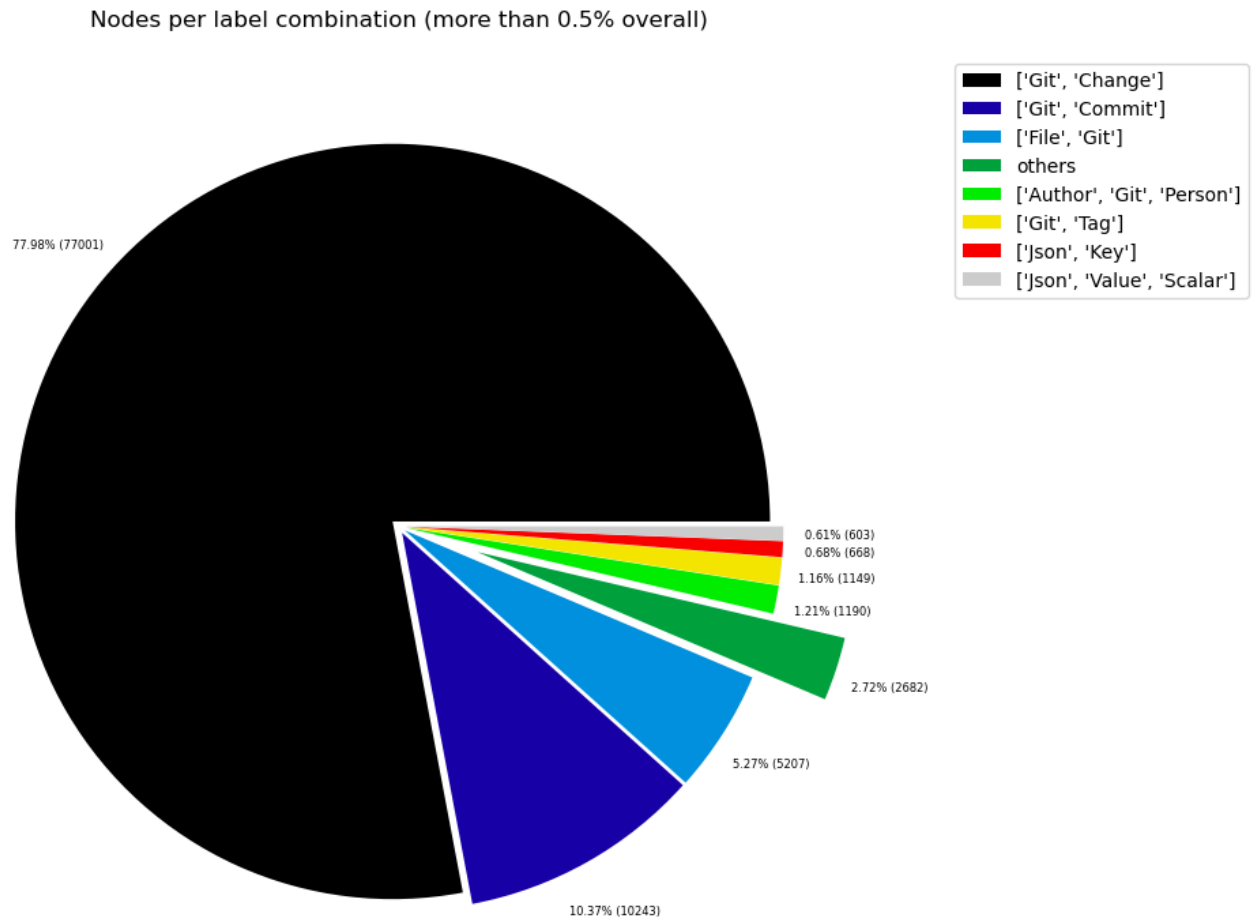2.72% (2682)
5.27% (5207)
10.37% (10243)

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	0.001013
1	[File, TS, Scan]	1	0.001013
2	[TS, Method]	1	0.001013
3	[Value, TS, ObjectMember]	1	0.001013
4	[TS, Constructor]	1	0.001013
5	[TS, Class]	1	0.001013
6	[TS, Enum]	2	0.002025
7	[Value, Object, TS]	3	0.003038
8	[Type, TS, Tuple, ExternalType]	3	0.003038
9	[Value, TS, Function]	4	0.004051
10	[TS, TypeParameter]	4	0.004051
11	[Value, TS, Complex]	5	0.005064
12	[NPM, Engine]	6	0.006076
13	[Project, TS]	6	0.006076
14	[File, Local]	6	0.006076
15	[Value, TS, Call]	6	0.006076
16	[Value, TS, Member]	6	0.006076
17	[File, TS, Local, Module]	6	0.006076
18	[Type, TS, TypeParameterReference, ExternalType]	6	0.006076
19	[TS, EnumMember]	8	0.008102
20	[Type, TS, NotIdentified, ExternalType]	11	0.011140
21	[Json, Value, Array]	12	0.012153
22	[Value, TS, Declared]	13	0.013165
23	[TS, TypeAlias]	16	0.016204
24	[File, Directory, Local]	16	0.016204
25	[TS, Interface]	17	0.017216
26	[Type, TS, Intersection, ExternalType]	17	0.017216
27	[jQAssistant, Rule, Concept]	19	0.019242
28	[Value, TS, Literal]	20	0.020255
29	[TS, Variable]	24	0.024306

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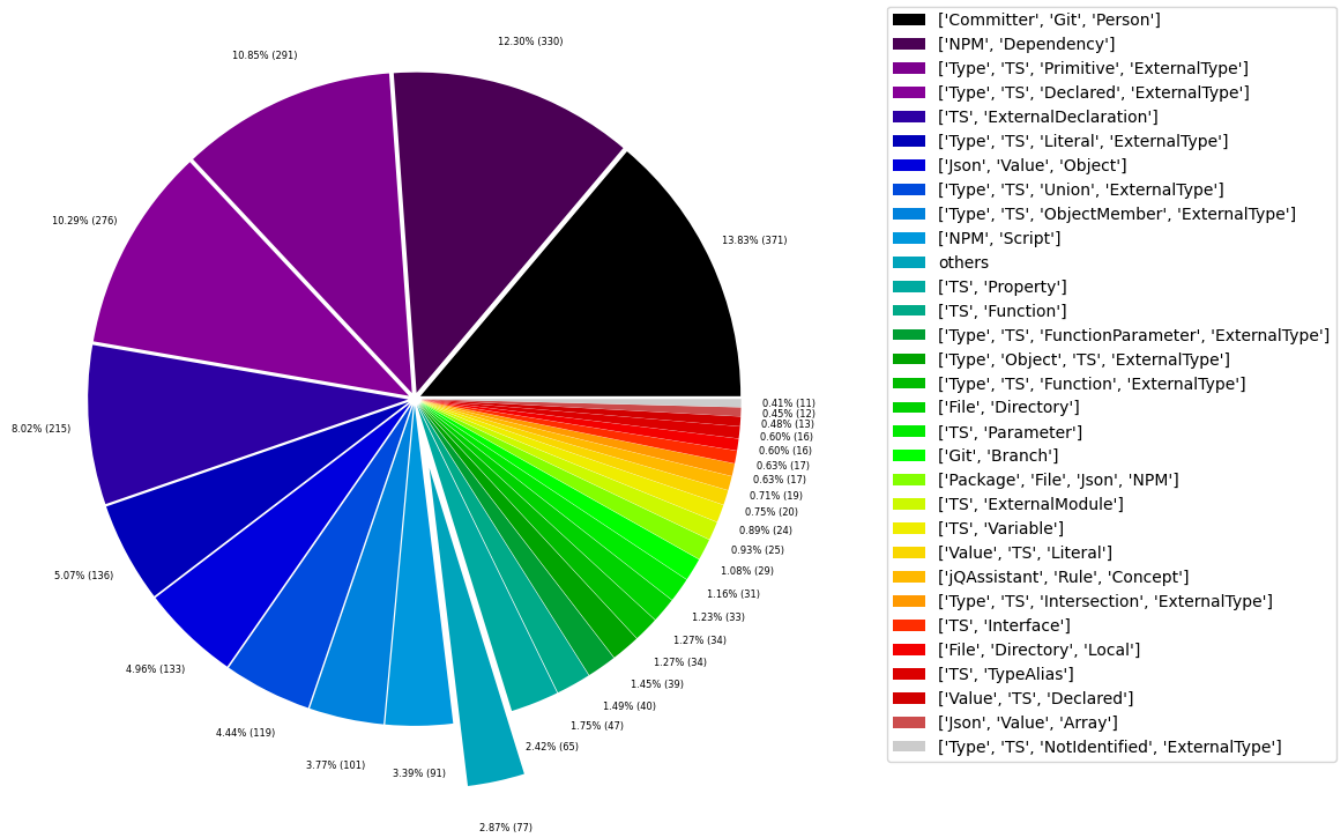- ['Type', 'TS', 'NotIdentified', 'ExternalType']

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.
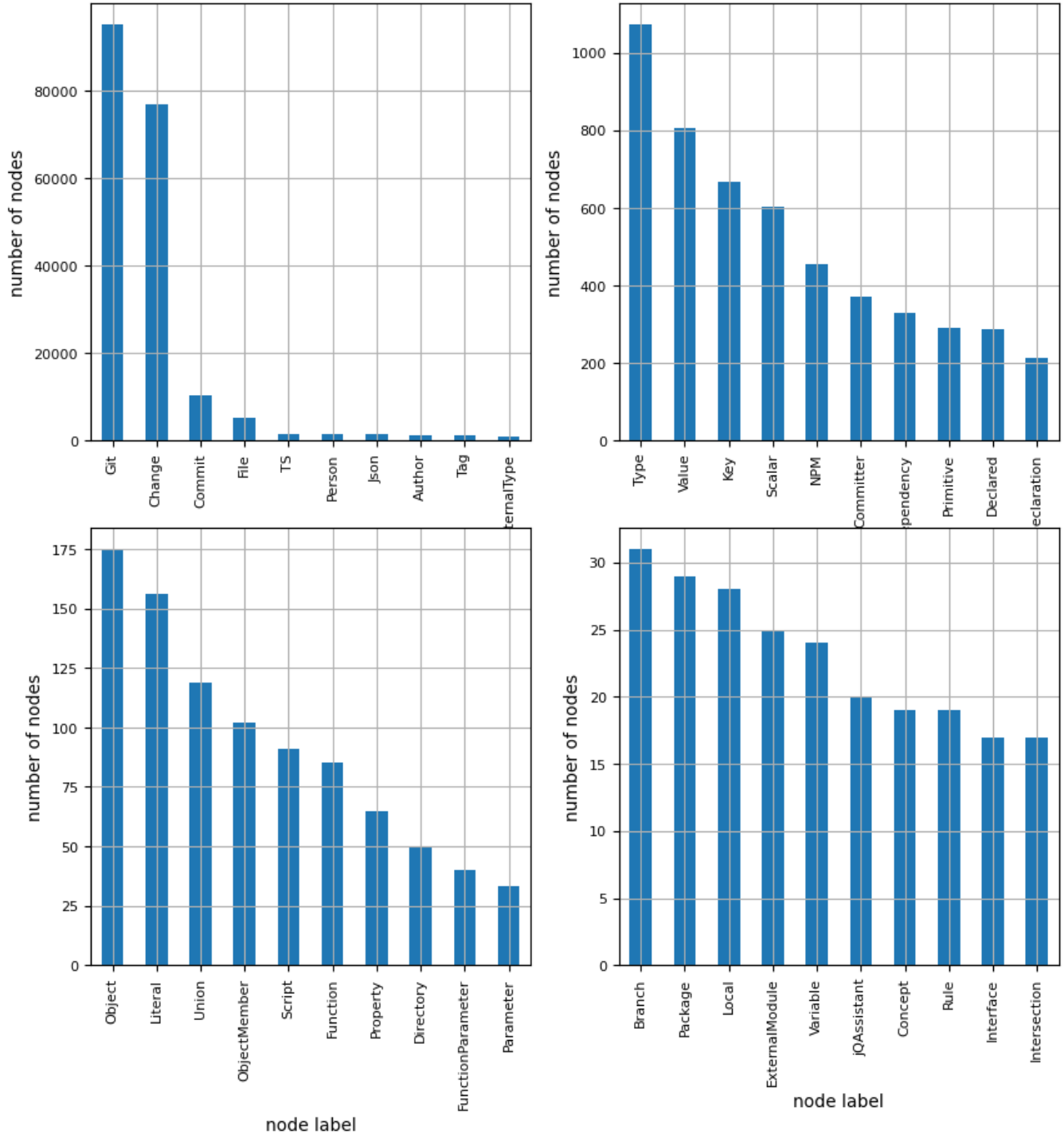
	nodeLabel	nodesWithThatLabel	nodesWithThatLabelPercent
0	Git	95192	96.403796
1	Change	77001	77.981224
2	Commit	10243	10.373394
3	File	5299	5.366456
4	TS	1603	1.623406
5	Person	1561	1.580872
6	Json	1445	1.463395
7	Author	1190	1.205149
8	Tag	1149	1.163627
9	ExternalType	1073	1.086659
10	Type	1073	1.086659
11	Value	806	0.816260
12	Key	668	0.676504
13	Scalar	603	0.610676
14	NPM	456	0.461805
15	Committer	371	0.375723
16	Dependency	330	0.334201
17	Primitive	291	0.294704
18	Declared	289	0.292679
19	ExternalDeclaration	215	0.217737
20	Object	175	0.177228
21	Literal	156	0.157986
22	Union	119	0.120515
23	ObjectMember	102	0.103298
24	Script	91	0.092158
25	Function	85	0.086082
26	Property	65	0.065827
27	Directory	50	0.050637
28	FunctionParameter	40	0.040509
29	Parameter	33	0.033420
30	Branch	31	0.031395
31	Package	29	0.029369
32	Local	28	0.028356
33	ExternalModule	25	0.025318
34	Variable	24	0.024306
35	jQAssistant	20	0.020255
36	Concept	19	0.019242
37	Rule	19	0.019242
38	Interface	17	0.017216
39	Intersection	17	0.017216

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: 276126
```

	relationshipType	nodesWithThatRelationshipType	nodesWithThatRelationshipTypePercent
0	CONTAINS_CHANGE	77001	27.886182
1	MODIFIES	77001	27.886182
2	UPDATES	50933	18.445565
3	COMMITTED	20486	7.419077
4	CREATES	18227	6.600972
5	HAS_PARENT	11272	4.082194
6	DELETES	10624	3.847519
7	RENAMES	2783	1.007873
8	HAS_NEW_NAME	1573	0.569667
9	ON_COMMIT	1149	0.416114
10	DEPENDS_ON	962	0.348392
11	HAS_KEY	668	0.241919
12	HAS_VALUE	668	0.241919
13	CONTAINS	593	0.214757
14	OF_TYPE	337	0.122046
15	EXPORTS	276	0.099954
16	REFERENCES	197	0.071344
17	DECLARES	186	0.067361
18	DECLARES_DEV_DEPENDENCY	169	0.061204
19	DECLARES_DEPENDENCY	161	0.058307
20	HAS_MEMBER	102	0.036940
21	HAS_TYPE_ARGUMENT	94	0.034042
22	DECLARES_SCRIPT	91	0.032956
23	RETURNS	82	0.029697
24	RESOLVES_TO	81	0.029334
25	HAS_PARAMETER	73	0.026437
26	CONTAINS_VALUE	51	0.018470
27	COPIES	43	0.015573
28	INITIALIZED_WITH	32	0.011589
29	HAS_HEAD	31	0.011227

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)

Legend	
■	CONTAINS_CHANGE
■	MODIFIES
■	UPDATES
■	COMMITTED
■	CREATES
■	HAS_PARENT
■	DELETES
■	others
■	RENAMES
■	HAS_NEW_NAME

27.89% (77001)

27.89% (77001)

0.57% (1573)

1.01% (2783)

2.25% (6226)

3.85% (10624)

4.08% (11272)
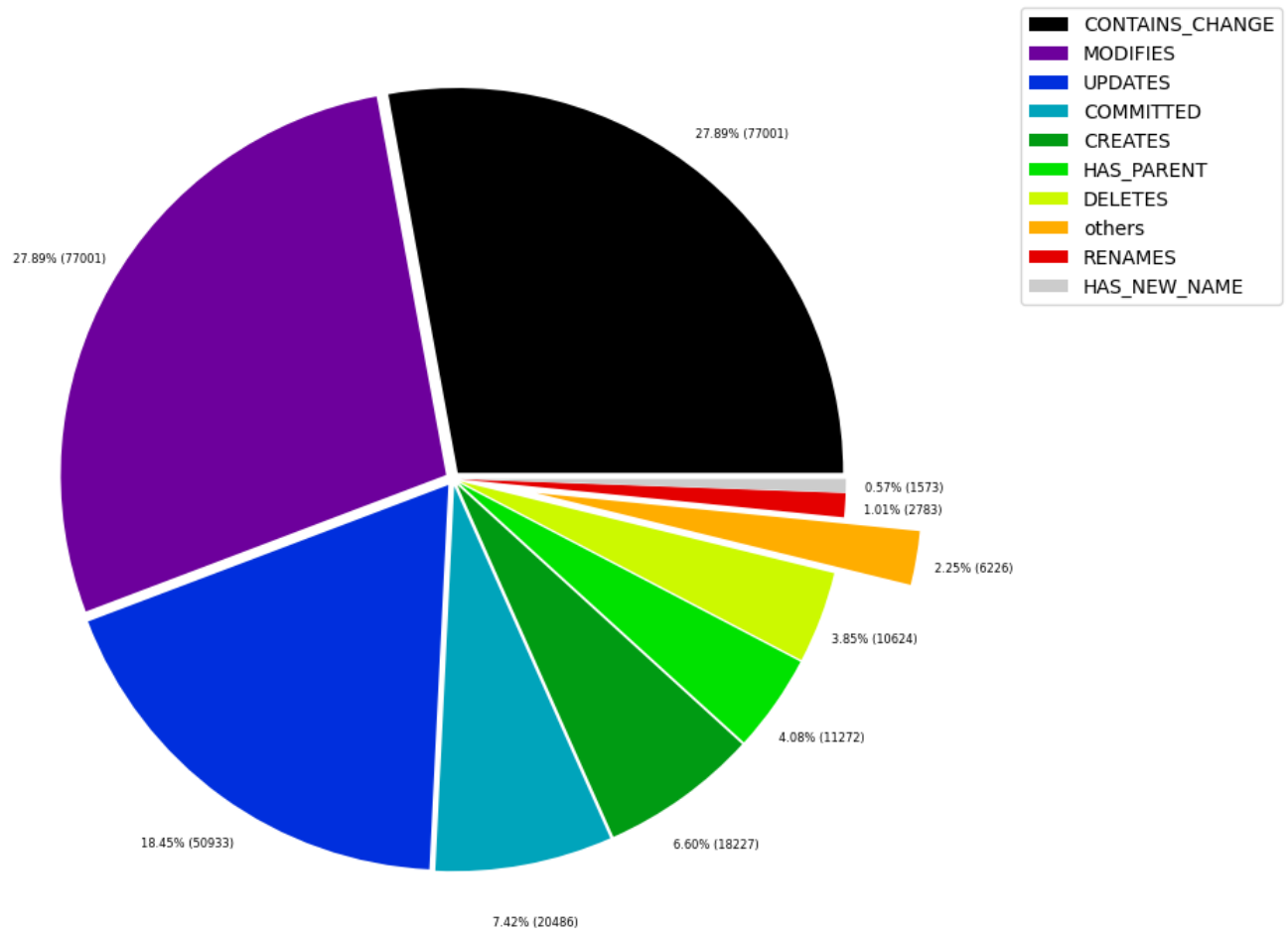
18.45% (50933)

6.60% (18227)

7.42% (20486)

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.
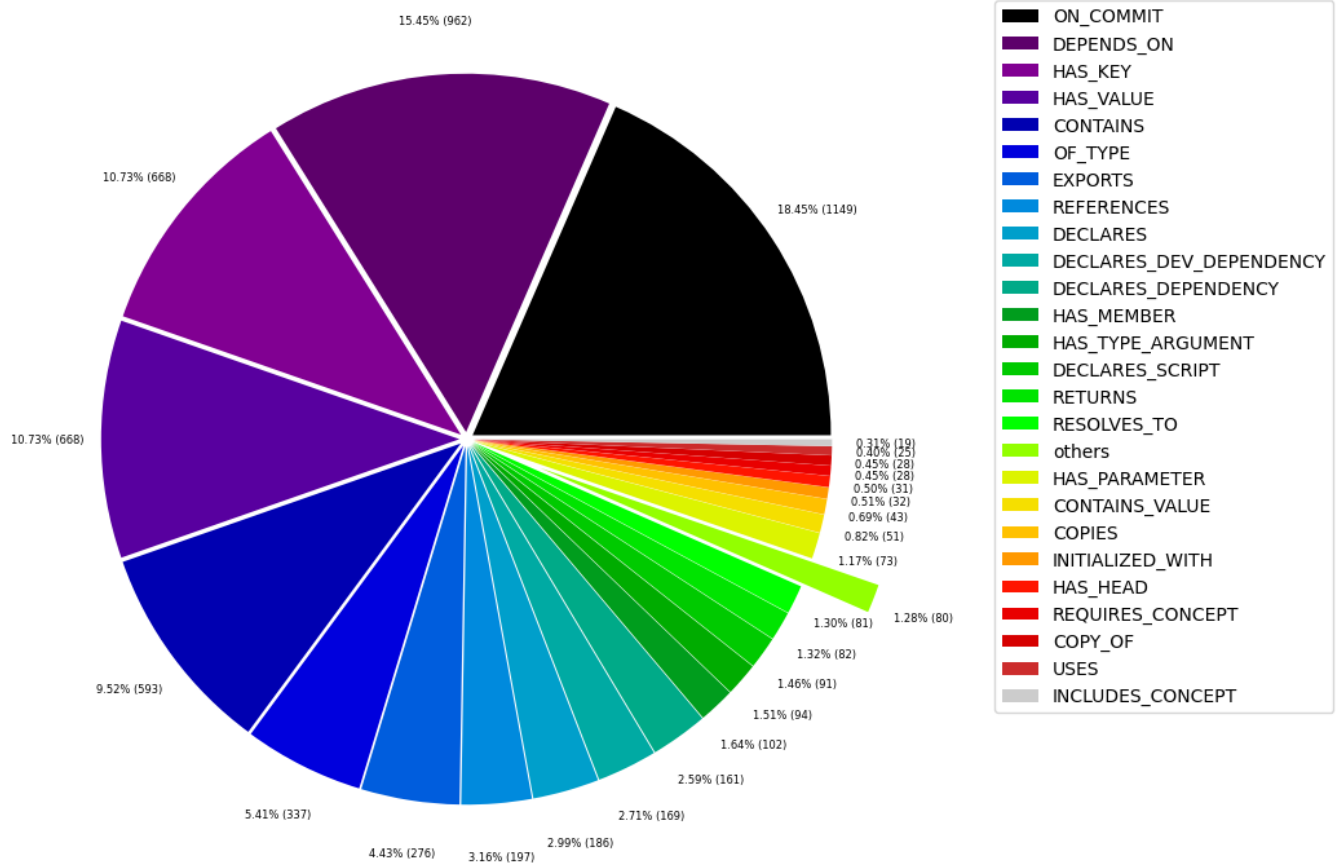
	relationshipType	nodesWithThatRelationshipType	nodesWithThatRelationshipTypePercent
0	PROVIDED_BY_NPM_DEPENDENCY	1	0.000362
1	CONSTRAINED_BY	4	0.001449
2	REFERENCED_PROJECTS	5	0.001811
3	PARENT	6	0.002173
4	CONTAINS_PROJECT	6	0.002173
5	DECLARES_ENGINE	6	0.002173
6	EXTENDS	6	0.002173
7	CALLS	6	0.002173
8	HAS_CONFIG	6	0.002173
9	HAS_NPM_PACKAGE	6	0.002173
10	HAS_ROOT	6	0.002173
11	MEMBER	6	0.002173
12	HAS_ARGUMENT	6	0.002173
13	SIMILAR	10	0.003622
14	INCLUDES_CONCEPT	19	0.006881
15	USES	25	0.009054
16	REQUIRES_CONCEPT	28	0.010140
17	COPY_OF	28	0.010140
18	HAS_HEAD	31	0.011227
19	INITIALIZED_WITH	32	0.011589
20	COPIES	43	0.015573
21	CONTAINS_VALUE	51	0.018470
22	HAS_PARAMETER	73	0.026437
23	RESOLVES_TO	81	0.029334
24	RETURNS	82	0.029697
25	DECLARES_SCRIPT	91	0.032956
26	HAS_TYPE_ARGUMENT	94	0.034042
27	HAS_MEMBER	102	0.036940
28	DECLARES_DEPENDENCY	161	0.058307
29	DECLARES_DEV_DEPENDENCY	169	0.061204

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>
```

15.45% (962)
18.45% (1149)
10.73% (668)
10.73% (668)
9.52% (593)
5.41% (337)
4.43% (276)
3.16% (197)
2.99% (186)
2.71% (169)
2.59% (161)
1.64% (102)
1.51% (94)
1.46% (91)
1.32% (82)
1.30% (81)
1.28% (80)
1.17% (73)
0.82% (51)
0.69% (43)
0.51% (32)
0.50% (31)
0.45% (28)
0.45% (28)
0.40% (25)
0.31% (19)

Legend:
- ON_COMMIT
- DEPENDS_ON
- HAS_KEY
- HAS_VALUE
- CONTAINS
- OF_TYPE
- EXPORTS
- REFERENCES
- DECLARES
- DECLARES_DEV_DEPENDENCY
- DECLARES_DEPENDENCY
- HAS_MEMBER
- HAS_TYPE_ARGUMENT
- DECLARES_SCRIPT
- RETURNS
- RESOLVES_TO
- others
- HAS_PARAMETER
- CONTAINS_VALUE
- COPIES
- INITIALIZED_WITH
- HAS_HEAD
- REQUIRES_CONCEPT
- COPY_OF
- USES
- INCLUDES_CONCEPT

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]	77001	10243	
1	[Git, Change]	MODIFIES	[File, Git]	77001	77001	
2	[Git, Change]	UPDATES	[File, Git]	50933	77001	
3	[Git, Change]	CREATES	[File, Git]	18227	77001	
4	[Git, Commit]	HAS_PARENT	[Git, Commit]	11272	10243	
5	[Git, Change]	DELETES	[File, Git]	10624	77001	
6	[Author, Git, Person]	COMMITTED	[Git, Commit]	10243	1190	
7	[Committer, Git, Person]	COMMITTED	[Git, Commit]	10243	371	
8	[Git, Change]	RENAMES	[File, Git]	2783	77001	
9	[File, Git]	HAS_NEW_NAME	[File, Git]	1573	5207	
10	[Git, Tag]	ON_COMMIT	[Git, Commit]	1149	1149	
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]	147	119	
19	[Type, TS, Declared, ExternalType]	REFERENCES	[TS, ExternalDeclaration]	142	276	
20	[TS, Function]	DEPENDS_ON	[TS, ExternalModule]	131	47	
21	[Type, TS, Union, ExternalType]	CONTAINS	[Type, TS, Literal, ExternalType]	119	119	
22	[Json, Key]	HAS_VALUE	[Json, Value, Object]	104	668	
23	[Type, Object, TS, ExternalType]	HAS_MEMBER	[Type, TS, ObjectMember, ExternalType]	101	39	
24	[Package, File, Json, NPM]	DECLARES_SCRIPT	[NPM, Script]	91	29	
25	[Type, TS, Union, ExternalType]	CONTAINS	[Type, TS, Declared, ExternalType]	70	119	
26	[File, Directory]	CONTAINS	[File, Directory]	63	34	
27	[TS, Interface]	DECLARES	[TS, Property]	61	17	
28	[File, Directory]	CONTAINS	[Package, File, Json, NPM]	58	34	
29	[File, Git]	RESOLVES_TO	[Package, File, Json, NPM]	57	5207	

Graph Density

```
total_number_of_nodes (vertices): 98743
total_number_of_relationships (edges): 276126
-> total directed graph density: 2.8320379218794587e-05
-> total directed graph density in percent: 0.0028320379218794585
```