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]	80737	78.274485
1	[Git, Commit]	10512	10.191379
2	[File, Git]	5448	5.281834
3	[Git, Tag]	1284	1.244837
4	[Author, Git, Person]	1203	1.166308
5	[Json, Key]	668	0.647626
6	[Json, Value, Scalar]	603	0.584608
7	[Committer, Git, Person]	371	0.359684
8	[NPM, Dependency]	338	0.327691
9	[Type, TS, Primitive]	291	0.282124
10	[Type, TS, Declared]	276	0.267582
11	[TS, ExternalDeclaration]	215	0.208442
12	[Type, TS, Literal]	136	0.131852
13	[Json, Value, Object]	133	0.128943
14	[Type, TS, Union]	119	0.115370
15	[Type, TS, ObjectMember]	101	0.097919
16	[NPM, Script]	91	0.088224
17	[TS, Property]	65	0.063017
18	[TS, Function]	47	0.045566
19	[Type, TS, FunctionParameter]	40	0.038780
20	[Type, Object, TS]	39	0.037810
21	[File, Directory]	34	0.032963
22	[Type, TS, Function]	34	0.032963
23	[TS, Parameter]	33	0.031993
24	[Git, Branch]	31	0.030054
25	[Package, File, Json, NPM]	29	0.028115
26	[TS, ExternalModule]	25	0.024237
27	[TS, Variable]	24	0.023268
28	[Value, TS, Literal]	20	0.019390
29	[jQAssistant, Rule, Concept]	19	0.018420

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>
```

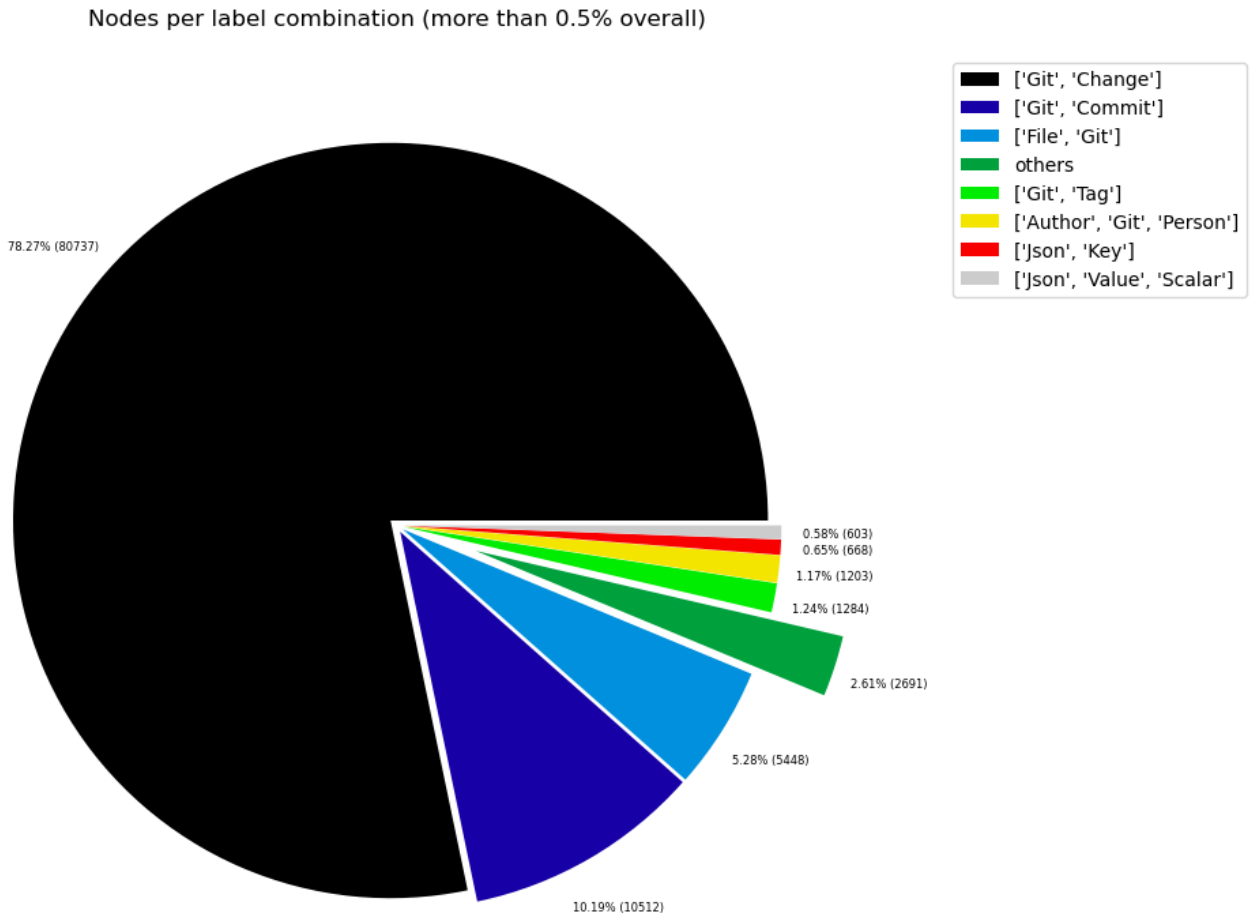

Table 1b - Lowest node count by label combination

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	0.000969
1	[File, TS, Scan]	1	0.000969
2	[TS, Method]	1	0.000969
3	[Repository, File, Git]	1	0.000969
4	[TS, Constructor]	1	0.000969
5	[Value, TS, ObjectMember]	1	0.000969
6	[TS, Class]	1	0.000969
7	[TS, Enum]	2	0.001939
8	[Value, Object, TS]	3	0.002908
9	[Type, TS, Tuple]	3	0.002908
10	[Value, TS, Function]	4	0.003878
11	[TS, TypeParameter]	4	0.003878
12	[Value, TS, Complex]	5	0.004847
13	[NPM, Engine]	6	0.005817
14	[Project, TS]	6	0.005817
15	[File, Local]	6	0.005817
16	[Value, TS, Call]	6	0.005817
17	[Value, TS, Member]	6	0.005817
18	[File, TS, Local, Module]	6	0.005817
19	[Type, TS, TypeParameterReference]	6	0.005817
20	[TS, EnumMember]	8	0.007756
21	[Type, TS, NotIdentified]	11	0.010664
22	[Json, Value, Array]	12	0.011634
23	[Value, TS, Declared]	13	0.012603
24	[TS, TypeAlias]	16	0.015512
25	[File, Directory, Local]	16	0.015512
26	[TS, Interface]	17	0.016481
27	[Type, TS, Intersection]	17	0.016481
28	[jQAssistant, Rule, Concept]	19	0.018420
29	[Value, TS, Literal]	20	0.019390

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>
```

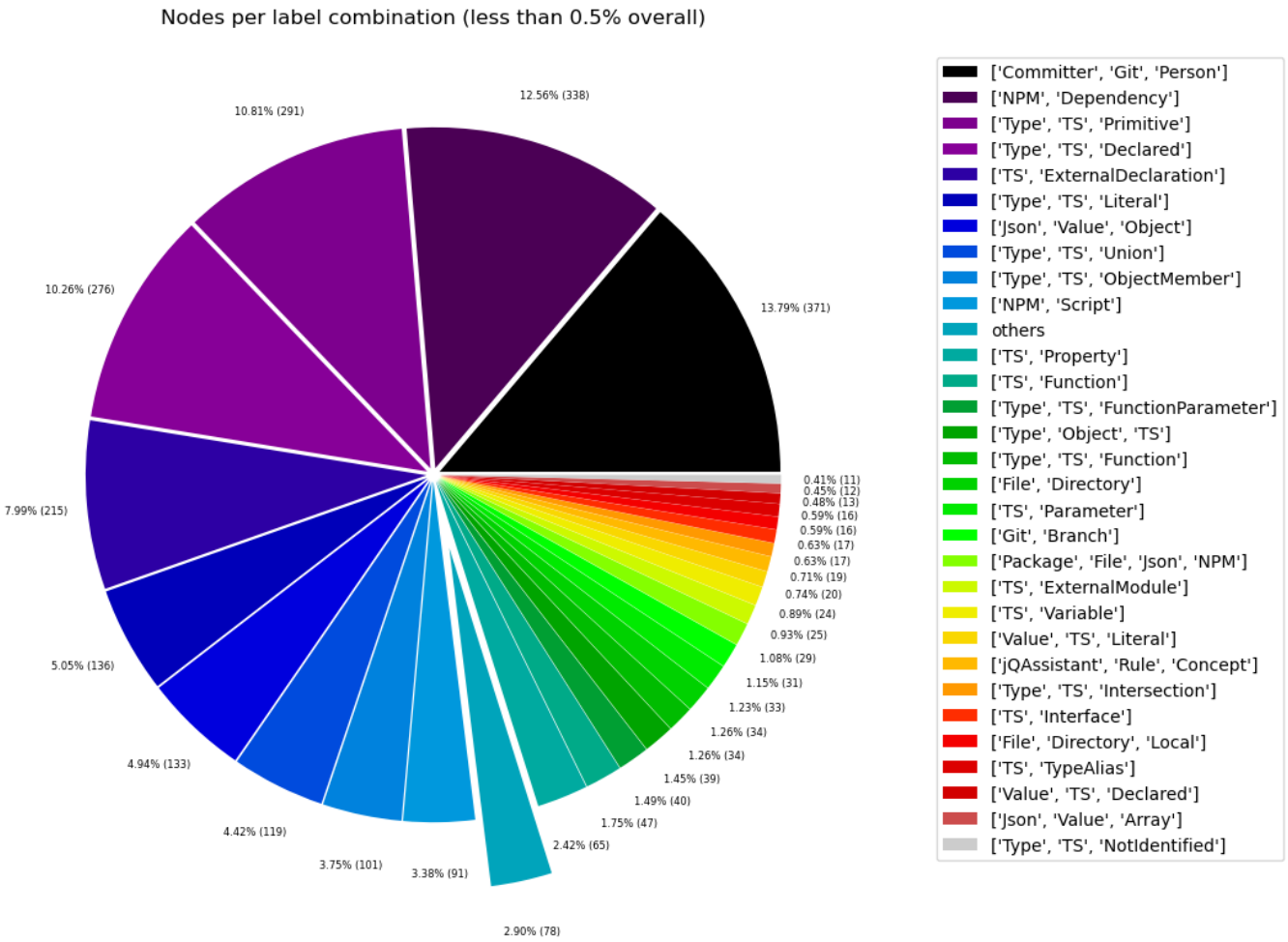

Table 1c - Highest node count by single label

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	99587	96.549551
1	Change	80737	78.274485
2	Commit	10512	10.191379
3	File	5541	5.371997
4	TS	1603	1.554108
5	Person	1574	1.525992
6	Json	1445	1.400927
7	Tag	1284	1.244837
8	Author	1203	1.166308
9	Type	1073	1.040273
10	Value	806	0.781417
11	Key	668	0.647626
12	Scalar	603	0.584608
13	NPM	464	0.449848
14	Committer	371	0.359684
15	Dependency	338	0.327691
16	Primitive	291	0.282124
17	Declared	289	0.280185
18	ExternalDeclaration	215	0.208442
19	Object	175	0.169662
20	Literal	156	0.151242
21	Union	119	0.115370
22	ObjectMember	102	0.098889
23	Script	91	0.088224
24	Function	85	0.082407
25	Property	65	0.063017
26	Directory	50	0.048475
27	FunctionParameter	40	0.038780
28	Parameter	33	0.031993
29	Branch	31	0.030054
30	Package	29	0.028115
31	Local	28	0.027146
32	ExternalModule	25	0.024237
33	Variable	24	0.023268
34	jQAssistant	20	0.019390
35	Concept	19	0.018420
36	Rule	19	0.018420
37	Interface	17	0.016481
38	Intersection	17	0.016481
39	TypeAlias	16	0.015512

Chart 1c - Highest node count by label

Shows the 40 labels with the highest number of nodes.

```
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```
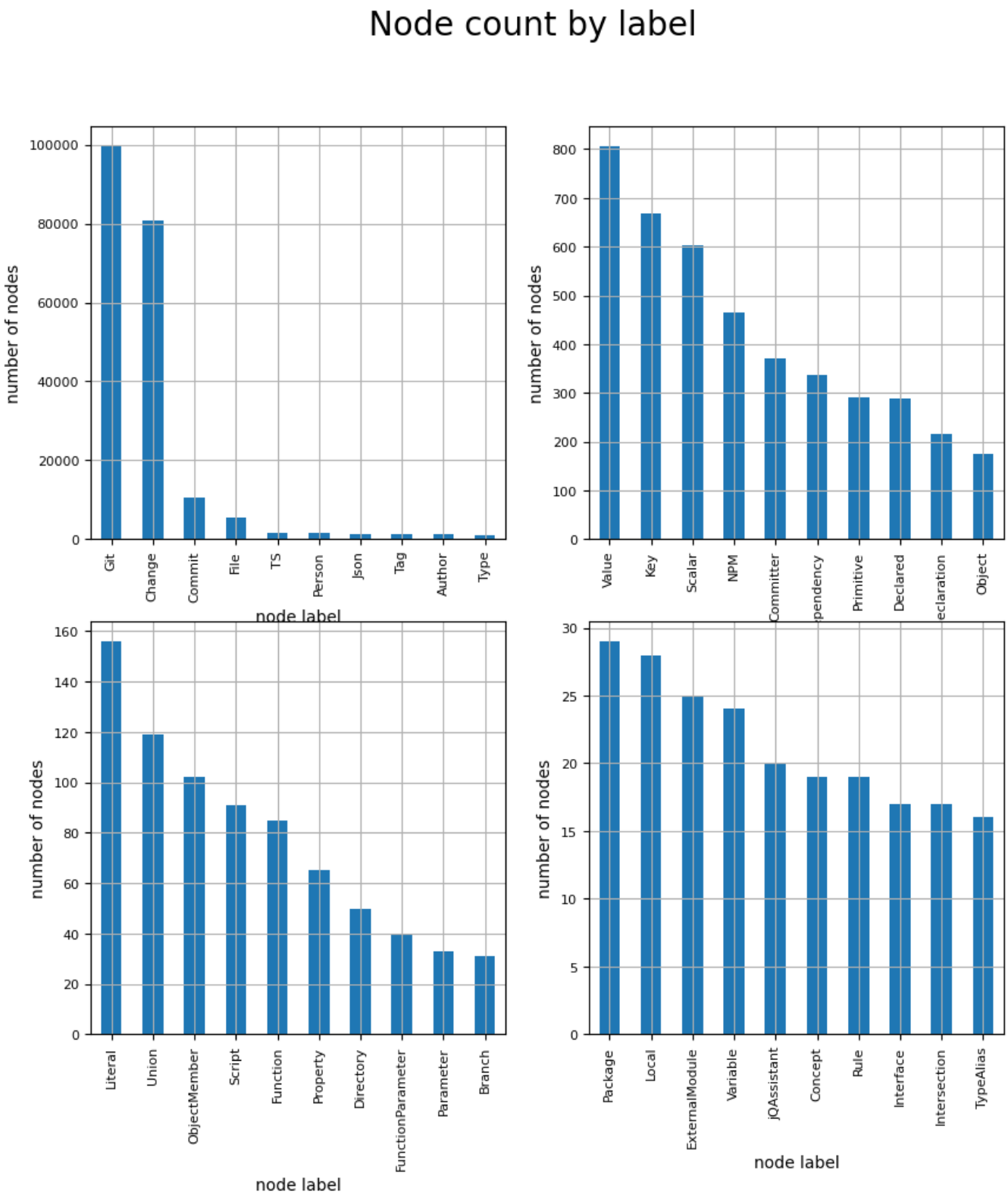



Relationship Types

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: 308057
```

	relationshipType	nodesWithThatRelationshipType	nodesWithThatRelationshipTypePercent
0	CONTAINS_CHANGE	80737	26.208461
1	MODIFIES	80737	26.208461
2	UPDATES	52795	17.138062
3	COMMITTED	21024	6.824711
4	CREATES	19562	6.350124
5	HAS_PARENT	11552	3.749955
6	DELETES	11551	3.749631
7	HAS_COMMIT	10512	3.412356
8	HAS_FILE	5448	1.768504
9	RENAMES	3171	1.029355
10	HAS_NEW_NAME	1718	0.557689
11	HAS_TAG	1284	0.416806
12	ON_COMMIT	1284	0.416806
13	HAS_AUTHOR	1203	0.390512
14	DEPENDS_ON	959	0.311306
15	HAS_KEY	668	0.216843
16	HAS_VALUE	668	0.216843
17	CONTAINS	594	0.192821
18	HAS_COMMITTER	371	0.120432
19	OF_TYPE	337	0.109395
20	EXPORTS	276	0.089594
21	REFERENCES	197	0.063949
22	DECLARES	186	0.060378
23	DECLARES_DEV_DEPENDENCY	169	0.054860
24	DECLARES_DEPENDENCY	161	0.052263
25	HAS_MEMBER	102	0.033111
26	HAS_TYPE_ARGUMENT	94	0.030514
27	DECLARES_SCRIPT	91	0.029540
28	RETURNS	82	0.026618
29	HAS_PARAMETER	73	0.023697

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>
```

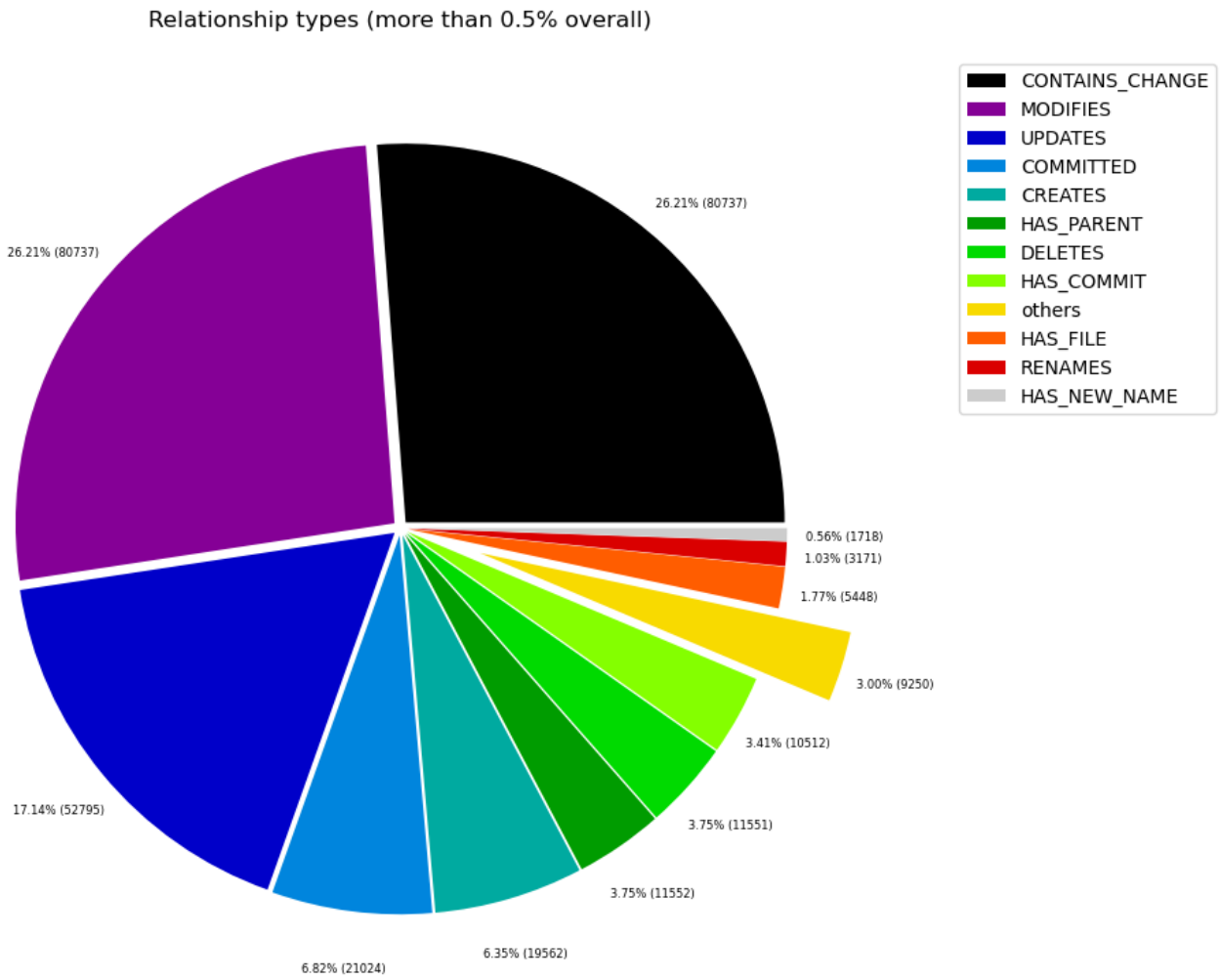


Table 2b - Lowest relationship count by type

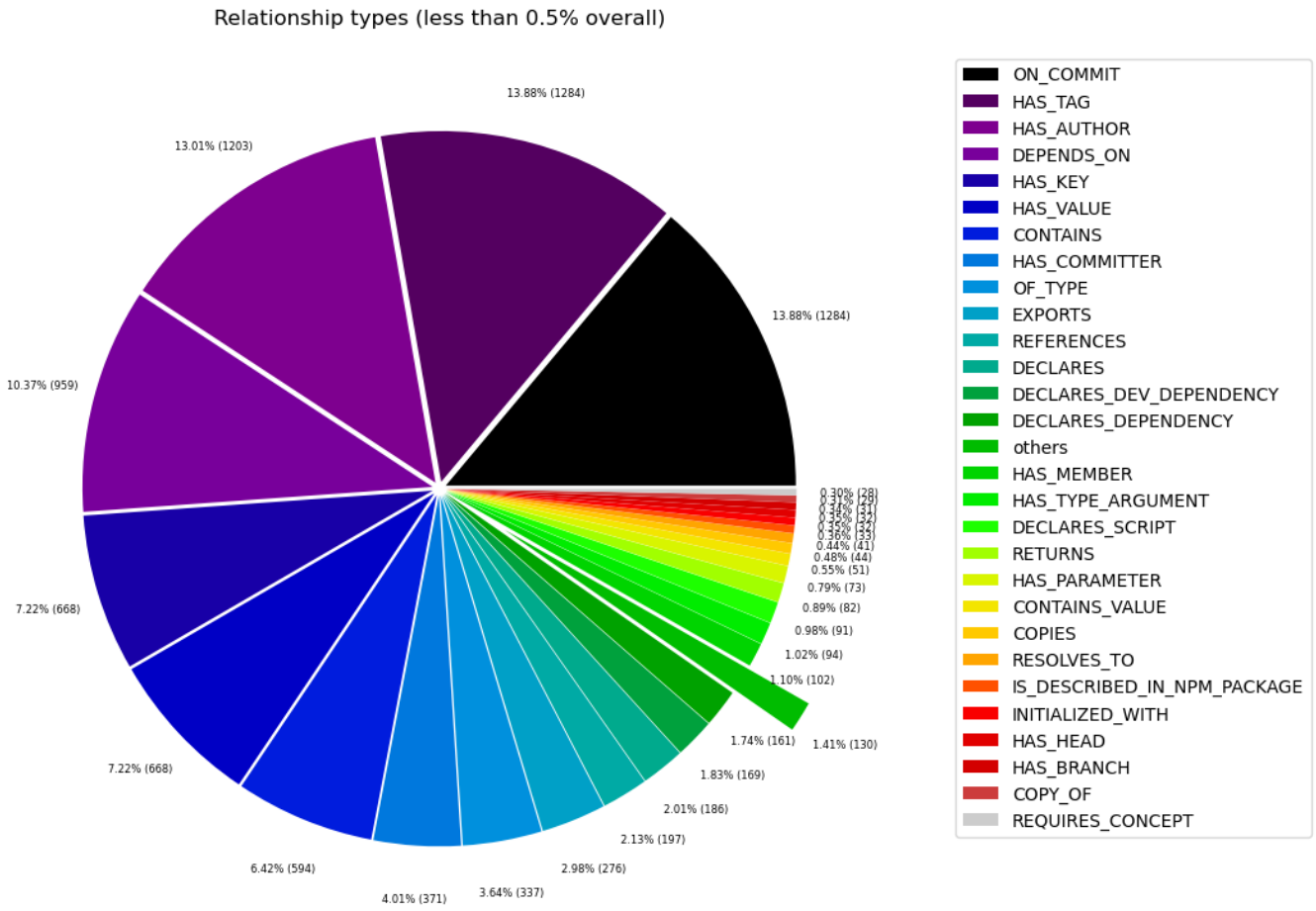
Lists the 30 relationships type with the lowest number of occurrences up to 0.5% of the total node count. This is essentially breaking down the "others" slice from the chart above.

	relationshipType	nodesWithThatRelationshipType	nodesWithThatRelationshipTypePercent
0	PROVIDED_BY_NPM_DEPENDENCY	1	0.000325
1	IS_IMPLEMENTED_IN	2	0.000649
2	CONSTRAINED_BY	4	0.001298
3	REFERENCED_PROJECTS	5	0.001623
4	CONTAINS_PROJECT	6	0.001948
5	DECLARES_ENGINE	6	0.001948
6	EXTENDS	6	0.001948
7	HAS_ARGUMENT	6	0.001948
8	CALLS	6	0.001948
9	HAS_NPM_PACKAGE	6	0.001948
10	HAS_ROOT	6	0.001948
11	MEMBER	6	0.001948
12	PARENT	6	0.001948
13	HAS_CONFIG	6	0.001948
14	SIMILAR	6	0.001948
15	DECLARES_PEER_DEPENDENCY	8	0.002597
16	INCLUDES_CONCEPT	19	0.006168
17	USES	25	0.008115
18	REQUIRES_CONCEPT	28	0.009089
19	COPY_OF	29	0.009414
20	HAS_BRANCH	31	0.010063
21	INITIALIZED_WITH	32	0.010388
22	HAS_HEAD	32	0.010388
23	IS_DESCRIBED_IN_NPM_PACKAGE	33	0.010712
24	RESOLVES_TO	41	0.013309
25	COPIES	44	0.014283
26	CONTAINS_VALUE	51	0.016555
27	HAS_PARAMETER	73	0.023697
28	RETURNS	82	0.026618
29	DECLARES_SCRIPT	91	0.029540

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>
```



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, Change]	MODIFIES	[File, Git]	80737	80737	
1	[Git, Commit]	CONTAINS_CHANGE	[Git, Change]	80737	10512	
2	[Git, Change]	UPDATES	[File, Git]	52795	80737	
3	[Git, Change]	CREATES	[File, Git]	19562	80737	
4	[Git, Commit]	HAS_PARENT	[Git, Commit]	11552	10512	
5	[Git, Change]	DELETES	[File, Git]	11551	80737	
6	[Repository, File, Git]	HAS_COMMIT	[Git, Commit]	10512	1	
7	[Author, Git, Person]	COMMITTED	[Git, Commit]	10512	1203	
8	[Committer, Git, Person]	COMMITTED	[Git, Commit]	10512	371	
9	[Repository, File, Git]	HAS_FILE	[File, Git]	5448	1	
10	[Git, Change]	RENAMES	[File, Git]	3171	80737	
11	[File, Git]	HAS_NEW_NAME	[File, Git]	1718	5448	
12	[Repository, File, Git]	HAS_TAG	[Git, Tag]	1284	1	
13	[Git, Tag]	ON_COMMIT	[Git, Commit]	1284	1284	
14	[Repository, File, Git]	HAS_AUTHOR	[Author, Git, Person]	1203	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]	371	1	
18	[TS, Function]	DEPENDS_ON	[TS, ExternalDeclaration]	285	47	
19	[TS, ExternalModule]	EXPORTS	[TS, ExternalDeclaration]	215	25	
20	[File, TS, Local, Module, Mark4ModuleWeaklyCon...	DEPENDS_ON	[TS, ExternalDeclaration]	192	2	
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]	142	276	
25	[TS, Function]	DEPENDS_ON	[TS, ExternalModule]	131	47	
26	[Type, TS, Union]	CONTAINS	[Type, TS, Literal]	119	119	
27	[Json, Key]	HAS_VALUE	[Json, Value, Object]	104	668	
28	[Type, Object, TS]	HAS_MEMBER	[Type, TS, ObjectMember]	101	39	
29	[Package, File, Json, NPM]	DECLARES_SCRIPT	[NPM, Script]	91	29	

Graph Density

```
total_number_of_nodes (vertices): 103146
total_number_of_relationships (edges): 308057
-> total directed graph density: 2.8955462807627423e-05
-> total directed graph density in percent: 0.002895546280762742
```