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]	77938	77.993375
1	[Git, Commit]	10308	10.315324
2	[File, Git]	5340	5.343794
3	[Git, Tag]	1198	1.198851
4	[Author, Git, Person]	1192	1.192847
5	[Json, Key]	668	0.668475
6	[Json, Value, Scalar]	603	0.603428
7	[Committer, Git, Person]	371	0.371264
8	[NPM, Dependency]	330	0.330234
9	[Type, TS, Primitive]	291	0.291207
10	[Type, TS, Declared]	276	0.276196
11	[TS, ExternalDeclaration]	215	0.215153
12	[Type, TS, Literal]	136	0.136097
13	[Json, Value, Object]	133	0.133094
14	[Type, TS, Union]	119	0.119085
15	[Type, TS, ObjectMember]	101	0.101072
16	[NPM, Script]	91	0.091065
17	[TS, Property]	65	0.065046
18	[TS, Function]	47	0.047033
19	[Type, TS, FunctionParameter]	40	0.040028
20	[Type, Object, TS]	39	0.039028
21	[File, Directory]	34	0.034024
22	[Type, TS, Function]	34	0.034024
23	[TS, Parameter]	33	0.033023
24	[Git, Branch]	30	0.030021
25	[Package, File, Json, NPM]	29	0.029021
26	[TS, ExternalModule]	25	0.025018
27	[TS, Variable]	24	0.024017
28	[Value, TS, Literal]	20	0.020014
29	[jQAssistant, Rule, Concept]	19	0.019013

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>
```

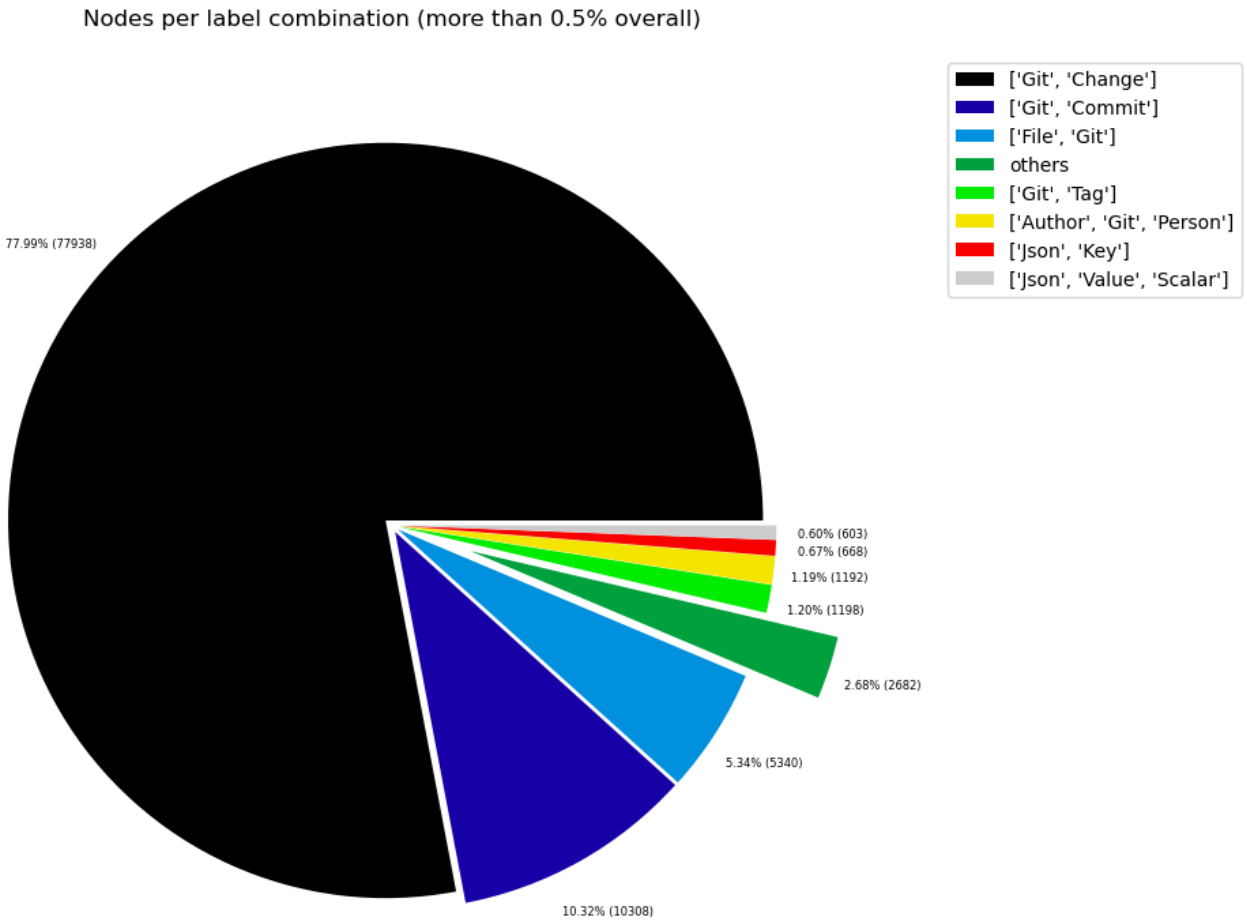


Table 1b - Lowest node count by label combination

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	0.001001
1	[File, TS, Scan]	1	0.001001
2	[TS, Method]	1	0.001001
3	[Repository, File, Git]	1	0.001001
4	[TS, Constructor]	1	0.001001
5	[Value, TS, ObjectMember]	1	0.001001
6	[TS, Class]	1	0.001001
7	[TS, Enum]	2	0.002001
8	[Value, Object, TS]	3	0.003002
9	[Type, TS, Tuple]	3	0.003002
10	[Value, TS, Function]	4	0.004003
11	[TS, TypeParameter]	4	0.004003
12	[Value, TS, Complex]	5	0.005004
13	[NPM, Engine]	6	0.006004
14	[Project, TS]	6	0.006004
15	[File, Local]	6	0.006004
16	[Value, TS, Call]	6	0.006004
17	[Value, TS, Member]	6	0.006004
18	[File, TS, Local, Module]	6	0.006004
19	[Type, TS, TypeParameterReference]	6	0.006004
20	[TS, EnumMember]	8	0.008006
21	[Type, TS, NotIdentified]	11	0.011008
22	[Json, Value, Array]	12	0.012009
23	[Value, TS, Declared]	13	0.013009
24	[TS, TypeAlias]	16	0.016011
25	[File, Directory, Local]	16	0.016011
26	[TS, Interface]	17	0.017012
27	[Type, TS, Intersection]	17	0.017012
28	[jQAssistant, Rule, Concept]	19	0.019013
29	[Value, TS, Literal]	20	0.020014

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>
```

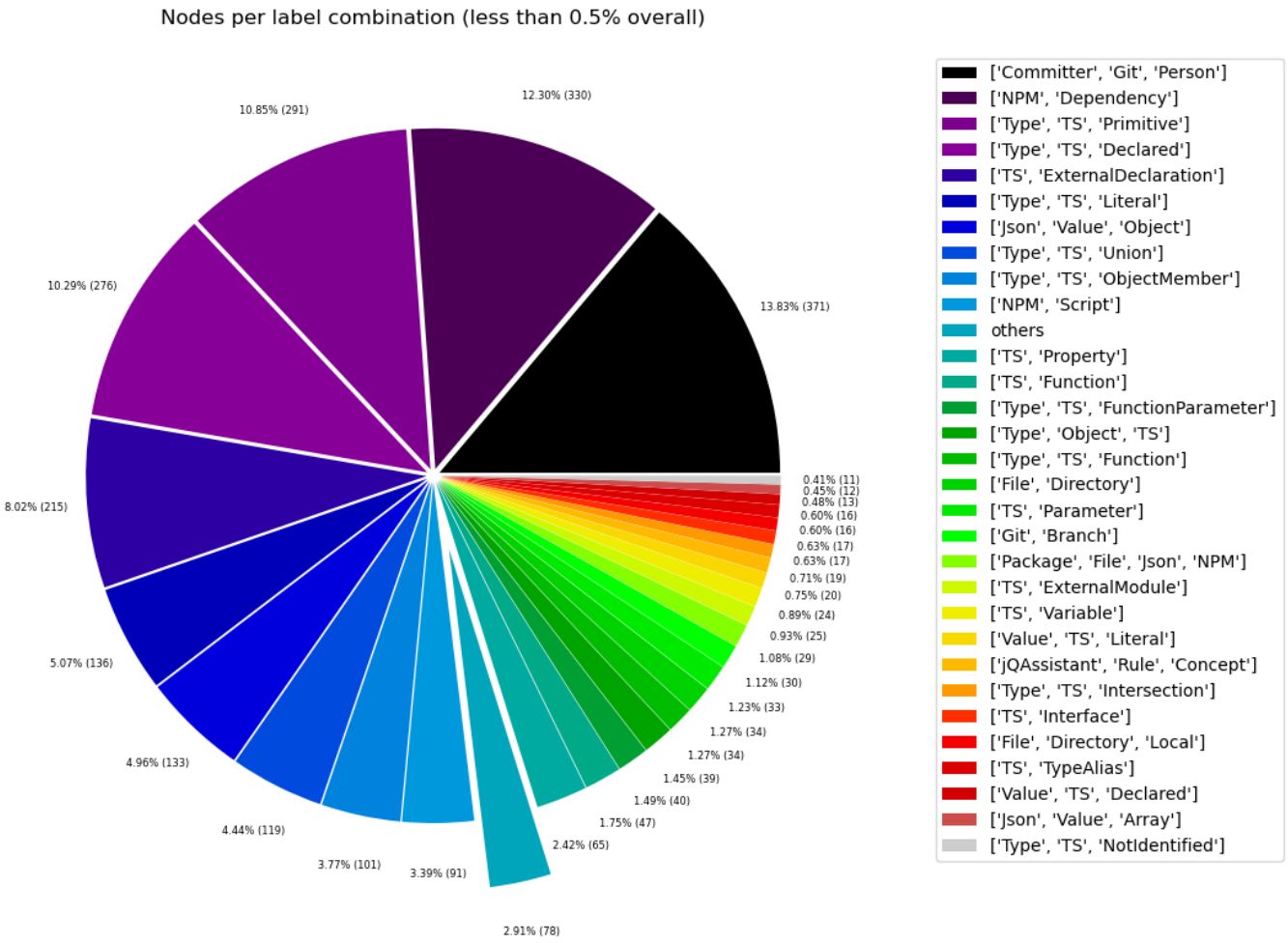


Table 1c - Highest node count by single label

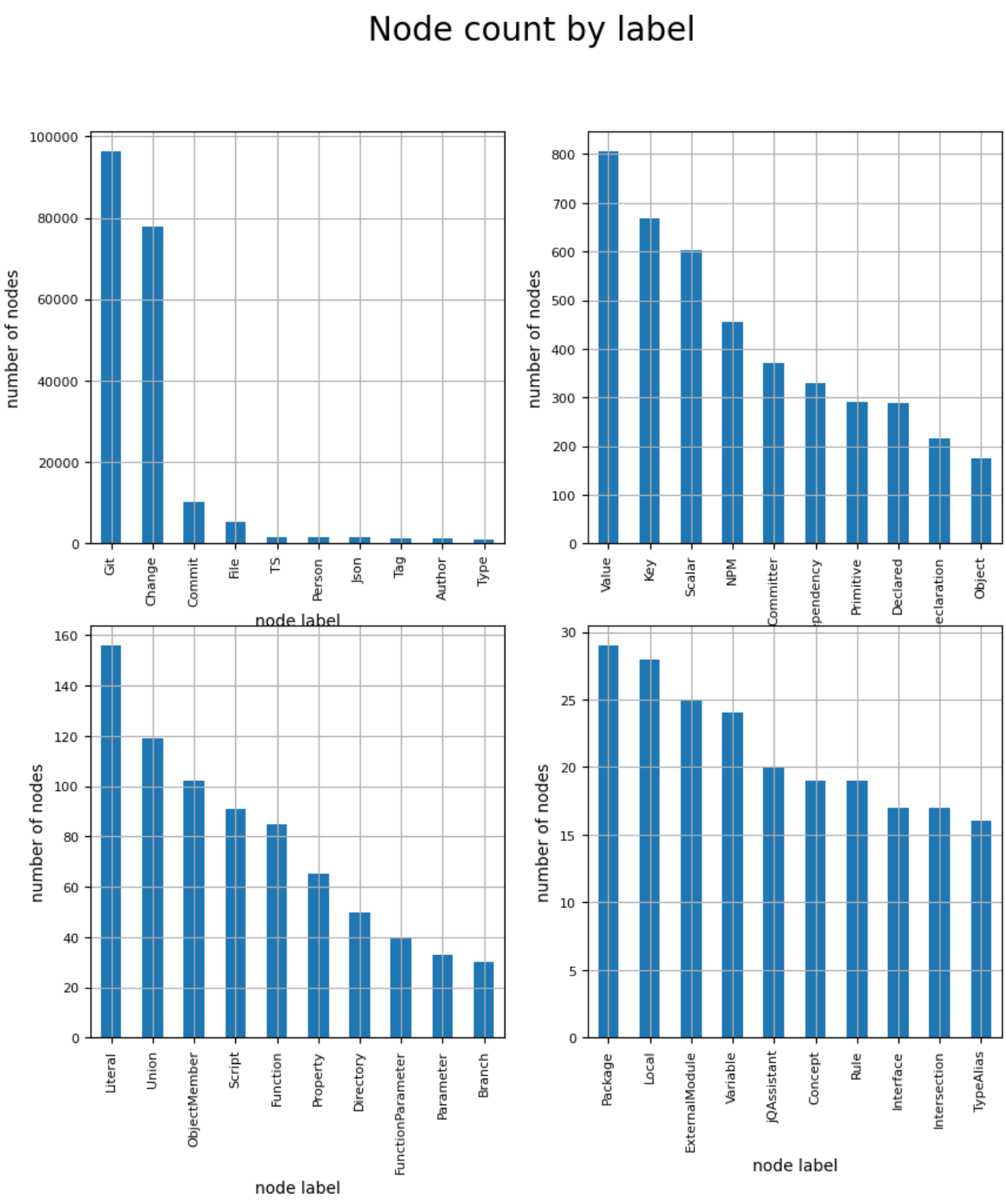
Lists the 40 labels with the highest number of nodes. Doesn't sum up to the total number of nodes or 100% because one node can have multiple labels. Helps to identify commonly used labels.

	nodeLabel	nodesWithThatLabel	nodesWithThatLabelPercent
0	Git	96378	96.446477
1	Change	77938	77.993375
2	Commit	10308	10.315324
3	File	5433	5.436860
4	TS	1603	1.604139
5	Person	1563	1.564111
6	Json	1445	1.446027
7	Tag	1198	1.198851
8	Author	1192	1.192847
9	Type	1073	1.073762
10	Value	806	0.806573
11	Key	668	0.668475
12	Scalar	603	0.603428
13	NPM	456	0.456324
14	Committer	371	0.371264
15	Dependency	330	0.330234
16	Primitive	291	0.291207
17	Declared	289	0.289205
18	ExternalDeclaration	215	0.215153
19	Object	175	0.175124
20	Literal	156	0.156111
21	Union	119	0.119085
22	ObjectMember	102	0.102072
23	Script	91	0.091065
24	Function	85	0.085060
25	Property	65	0.065046
26	Directory	50	0.050036
27	FunctionParameter	40	0.040028
28	Parameter	33	0.033023
29	Branch	30	0.030021
30	Package	29	0.029021
31	Local	28	0.028020
32	ExternalModule	25	0.025018
33	Variable	24	0.024017
34	jQAssistant	20	0.020014
35	Concept	19	0.019013
36	Rule	19	0.019013
37	Interface	17	0.017012
38	Intersection	17	0.017012
39	TypeAlias	16	0.016011

Chart 1c - Highest node count by label

Shows the 40 labels with the highest number of nodes.

```
<Figure size 640x480 with 0 Axes>
```



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: 297940
```

	relationshipType	nodesWithThatRelationshipType	nodesWithThatRelationshipTypePercent
0	CONTAINS_CHANGE	77938	26.158958
1	MODIFIES	77938	26.158958
2	UPDATES	51516	17.290730
3	COMMITTED	20616	6.919514
4	CREATES	18526	6.218030
5	HAS_PARENT	11339	3.805800
6	DELETES	10807	3.627240
7	HAS_COMMIT	10308	3.459757
8	HAS_FILE	5340	1.792307
9	RENAMES	2911	0.977042
10	HAS_NEW_NAME	1647	0.552796
11	HAS_TAG	1198	0.402094
12	ON_COMMIT	1198	0.402094
13	HAS_AUTHOR	1192	0.400081
14	DEPENDS_ON	959	0.321877
15	HAS_KEY	668	0.224206
16	HAS_VALUE	668	0.224206
17	CONTAINS	594	0.199369
18	HAS_COMMITTER	371	0.124522
19	OF_TYPE	337	0.113110
20	EXPORTS	276	0.092636
21	REFERENCES	197	0.066121
22	DECLARES	186	0.062429
23	DECLARES_DEV_DEPENDENCY	169	0.056723
24	DECLARES_DEPENDENCY	161	0.054038
25	HAS_MEMBER	102	0.034235
26	HAS_TYPE_ARGUMENT	94	0.031550
27	DECLARES_SCRIPT	91	0.030543
28	RETURNS	82	0.027522
29	HAS_PARAMETER	73	0.024502

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>
```

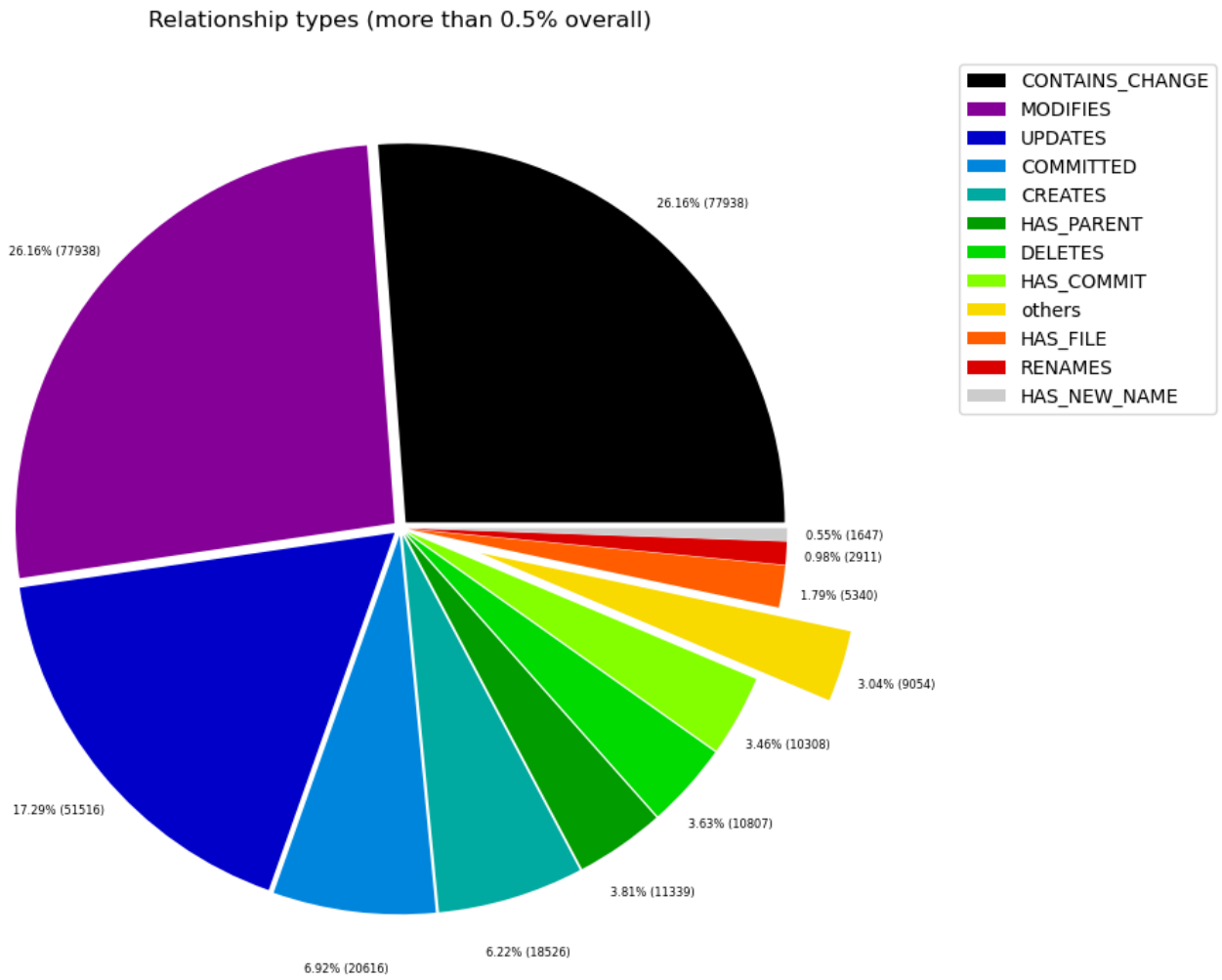


Table 2b - Lowest relationship count by type

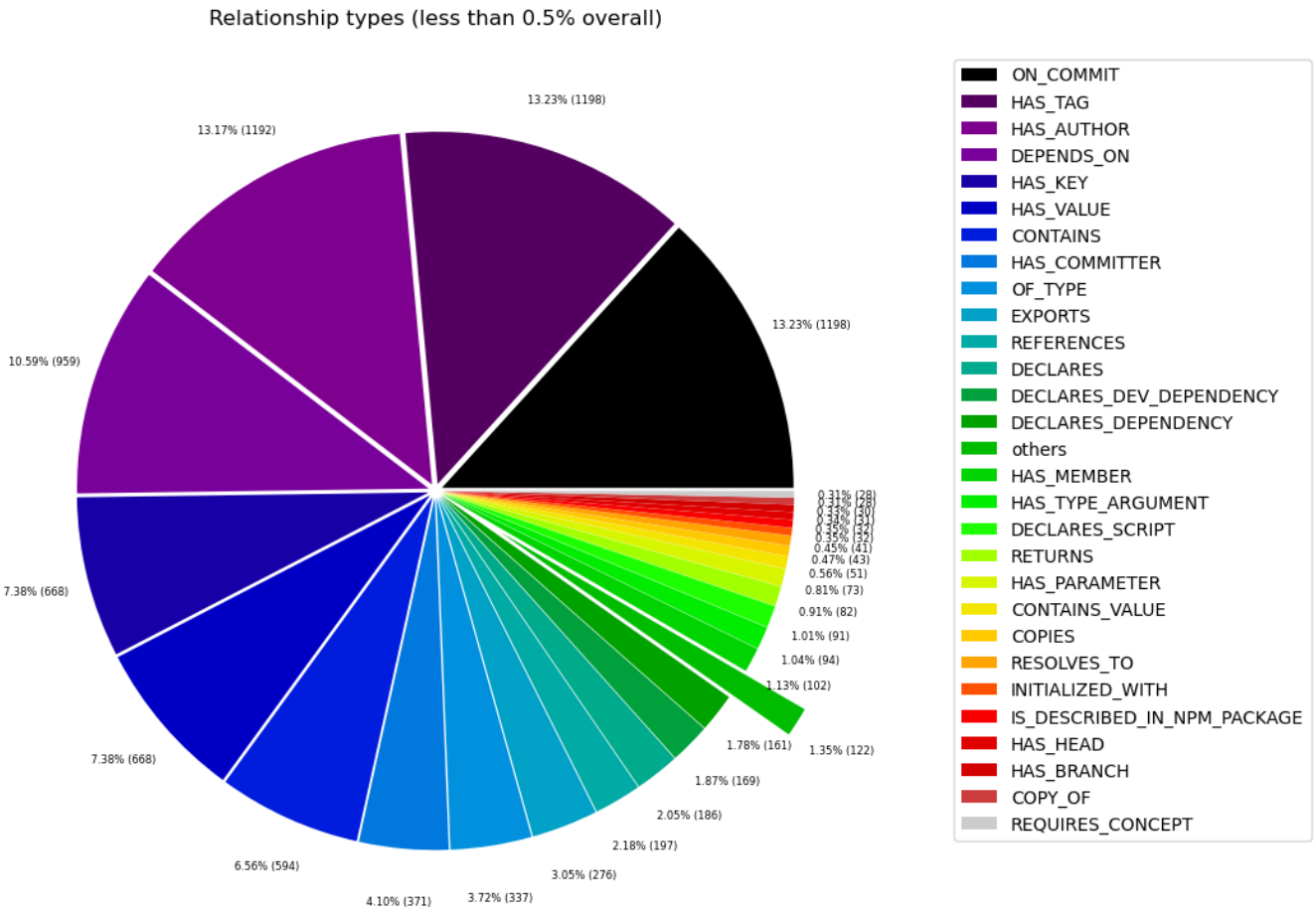
Lists the 30 relationships type with the lowest number of occurrences up to 0.5% of the total node count. This is essentially breaking down the "others" slice from the chart above.

	relationshipType	nodesWithThatRelationshipType	nodesWithThatRelationshipTypePercent
0	PROVIDED_BY_NPM_DEPENDENCY	1	0.000336
1	IS_IMPLEMENTED_IN	2	0.000671
2	CONSTRAINED_BY	4	0.001343
3	REFERENCED_PROJECTS	5	0.001678
4	CONTAINS_PROJECT	6	0.002014
5	DECLARES_ENGINE	6	0.002014
6	EXTENDS	6	0.002014
7	HAS_ARGUMENT	6	0.002014
8	CALLS	6	0.002014
9	HAS_NPM_PACKAGE	6	0.002014
10	HAS_ROOT	6	0.002014
11	MEMBER	6	0.002014
12	PARENT	6	0.002014
13	HAS_CONFIG	6	0.002014
14	SIMILAR	6	0.002014
15	INCLUDES_CONCEPT	19	0.006377
16	USES	25	0.008391
17	REQUIRES_CONCEPT	28	0.009398
18	COPY_OF	28	0.009398
19	HAS_BRANCH	30	0.010069
20	HAS_HEAD	31	0.010405
21	IS_DESCRIBED_IN_NPM_PACKAGE	32	0.010740
22	INITIALIZED_WITH	32	0.010740
23	RESOLVES_TO	41	0.013761
24	COPIES	43	0.014432
25	CONTAINS_VALUE	51	0.017118
26	HAS_PARAMETER	73	0.024502
27	RETURNS	82	0.027522
28	DECLARES_SCRIPT	91	0.030543
29	HAS_TYPE_ARGUMENT	94	0.031550

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	numberOfNodesT
0	[Git, Change]	MODIFIES	[File, Git]	77938	77938	
1	[Git, Commit]	CONTAINS_CHANGE	[Git, Change]	77938	10308	
2	[Git, Change]	UPDATES	[File, Git]	51516	77938	
3	[Git, Change]	CREATES	[File, Git]	18526	77938	
4	[Git, Commit]	HAS_PARENT	[Git, Commit]	11339	10308	
5	[Git, Change]	DELETES	[File, Git]	10807	77938	
6	[Repository, File, Git]	HAS_COMMIT	[Git, Commit]	10308	1	
7	[Author, Git, Person]	COMMITTED	[Git, Commit]	10308	1192	
8	[Committer, Git, Person]	COMMITTED	[Git, Commit]	10308	371	
9	[Repository, File, Git]	HAS_FILE	[File, Git]	5340	1	
10	[Git, Change]	RENAMES	[File, Git]	2911	77938	
11	[File, Git]	HAS_NEW_NAME	[File, Git]	1647	5340	
12	[Repository, File, Git]	HAS_TAG	[Git, Tag]	1198	1	
13	[Git, Tag]	ON_COMMIT	[Git, Commit]	1198	1198	
14	[Repository, File, Git]	HAS_AUTHOR	[Author, Git, Person]	1192	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): 99929
total_number_of_relationships (edges): 297940
-> total directed graph density: 2.9836651158660812e-05
-> total directed graph density in percent: 0.0029836651158660814
```