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]	76312	77.929027
1	[Git, Commit]	10175	10.390605
2	[File, Git]	5185	5.294869
3	[Author, Git, Person]	1187	1.212152
4	[Git, Tag]	1139	1.163135
5	[Json, Key]	668	0.682155
6	[Json, Value, Scalar]	603	0.615777
7	[Committer, Git, Person]	371	0.378861
8	[NPM, Dependency]	330	0.336993
9	[Type, TS, Primitive, ExternalType]	285	0.291039
10	[Type, TS, Declared, ExternalType]	272	0.277764
11	[TS, ExternalDeclaration]	215	0.219556
12	[Type, TS, Literal, ExternalType]	136	0.138882
13	[Json, Value, Object]	133	0.135818
14	[Type, TS, Union, ExternalType]	117	0.119479
15	[Type, TS, ObjectMember, ExternalType]	98	0.100077
16	[NPM, Script]	91	0.092928
17	[TS, Property]	65	0.066377
18	[TS, Function]	47	0.047996
19	[Type, Object, TS, ExternalType]	38	0.038805
20	[Type, TS, FunctionParameter, ExternalType]	37	0.037784
21	[File, Directory]	34	0.034720
22	[TS, Parameter]	33	0.033699
23	[Type, TS, Function, ExternalType]	32	0.032678
24	[Package, File, Json, NPM]	29	0.029615
25	[Git, Branch]	27	0.027572
26	[TS, ExternalModule]	25	0.025530
27	[TS, Variable]	24	0.024509
28	[Value, TS, Literal]	20	0.020424
29	[jQAssistant, Rule, Concept]	19	0.019403

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>
```

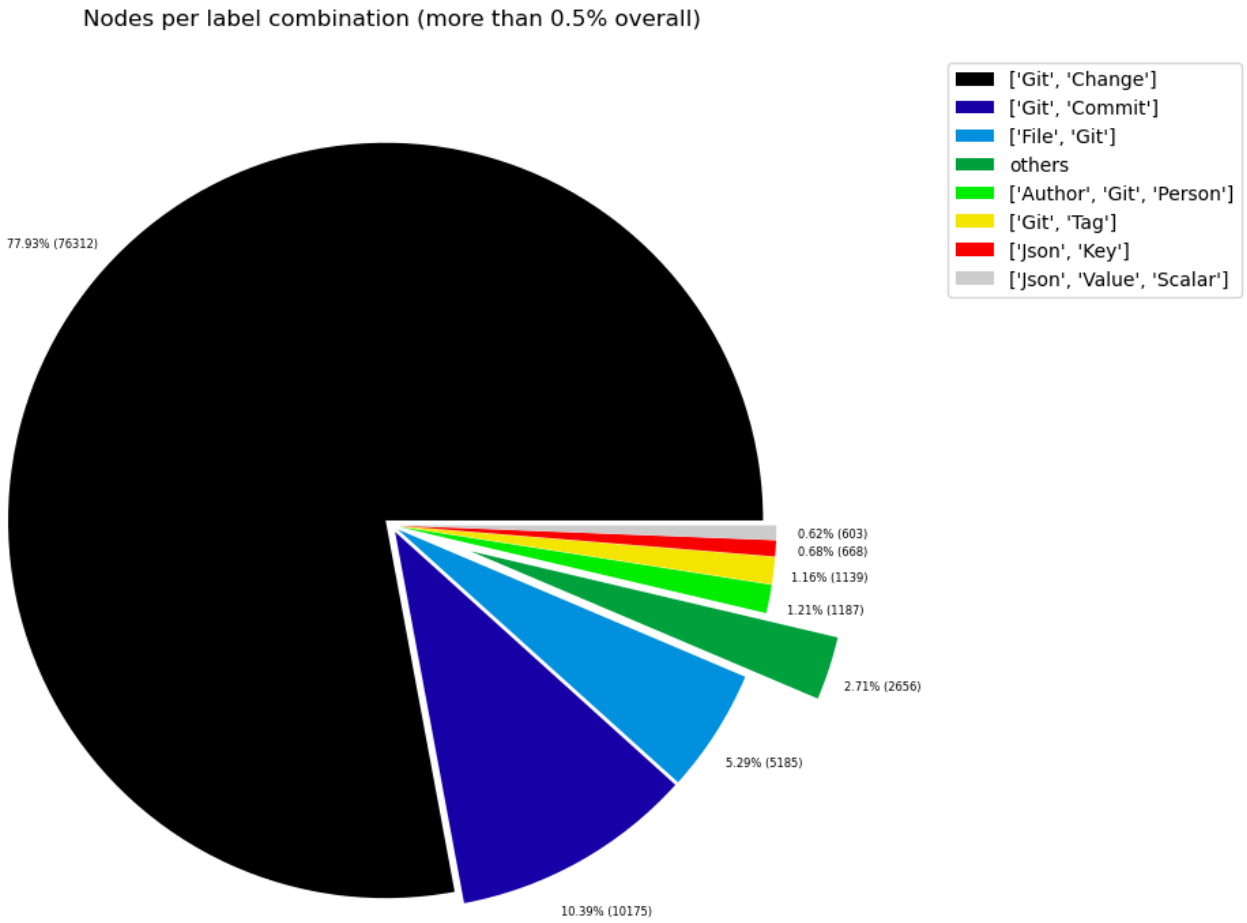


Table 1b - Lowest node count by label combination

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	0.001021
1	[File, TS, Scan]	1	0.001021
2	[TS, Method]	1	0.001021
3	[Value, TS, ObjectMember]	1	0.001021
4	[TS, Constructor]	1	0.001021
5	[TS, Class]	1	0.001021
6	[TS, Enum]	2	0.002042
7	[Value, Object, TS]	3	0.003064
8	[Type, TS, Tuple, ExternalType]	3	0.003064
9	[Value, TS, Function]	4	0.004085
10	[TS, TypeParameter]	4	0.004085
11	[Value, TS, Complex]	5	0.005106
12	[NPM, Engine]	6	0.006127
13	[Project, TS]	6	0.006127
14	[File, Local]	6	0.006127
15	[Value, TS, Call]	6	0.006127
16	[Value, TS, Member]	6	0.006127
17	[File, TS, Local, Module]	6	0.006127
18	[Type, TS, TypeParameterReference, ExternalType]	6	0.006127
19	[TS, EnumMember]	8	0.008170
20	[Type, TS, NotIdentified, ExternalType]	11	0.011233
21	[Json, Value, Array]	12	0.012254
22	[Value, TS, Declared]	13	0.013275
23	[TS, TypeAlias]	14	0.014297
24	[File, Directory, Local]	16	0.016339
25	[Type, TS, Intersection, ExternalType]	17	0.017360
26	[TS, Interface]	18	0.018381
27	[jQAssistant, Rule, Concept]	19	0.019403
28	[Value, TS, Literal]	20	0.020424
29	[TS, Variable]	24	0.024509

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>
```

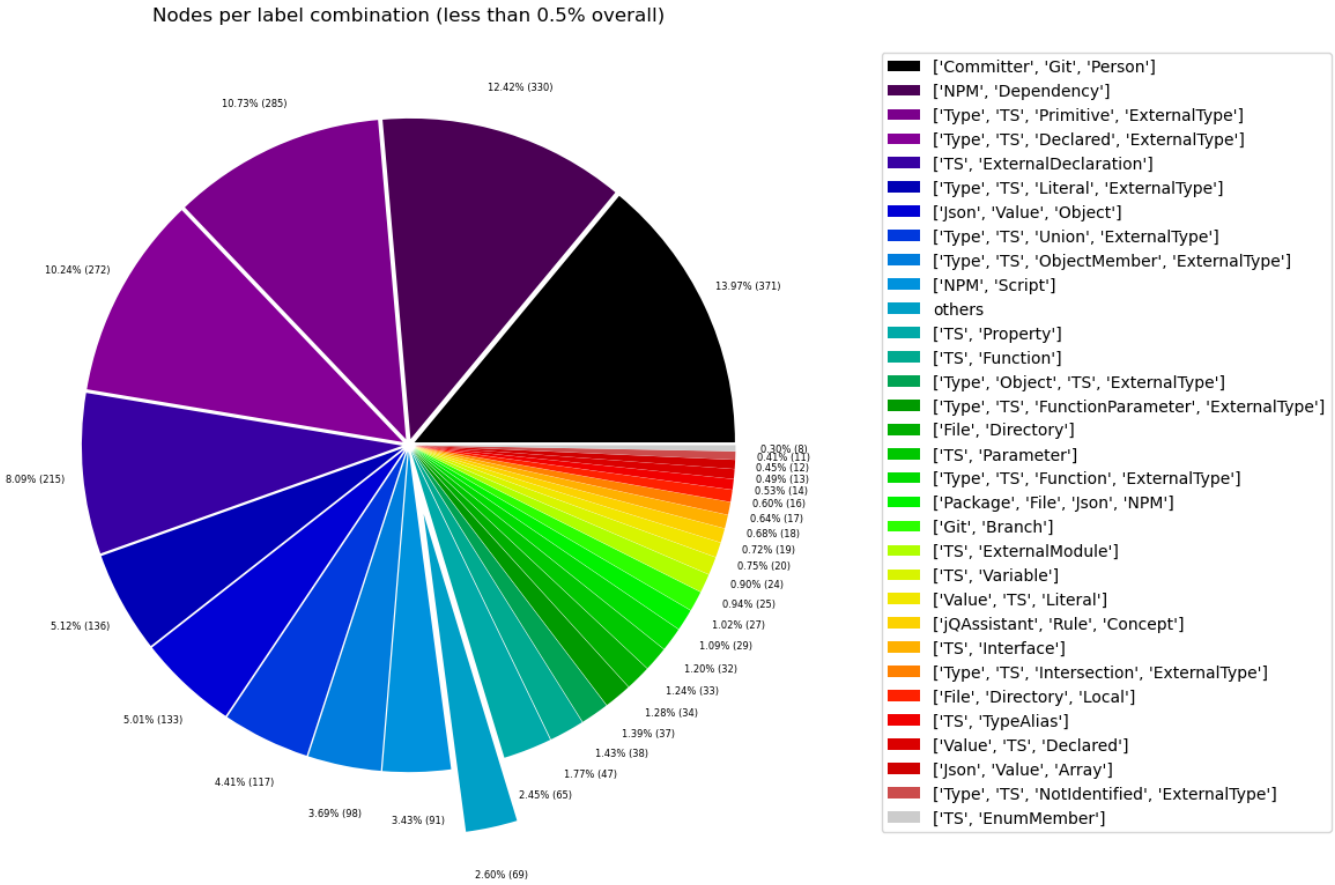


Table 1c - Highest node count by single label

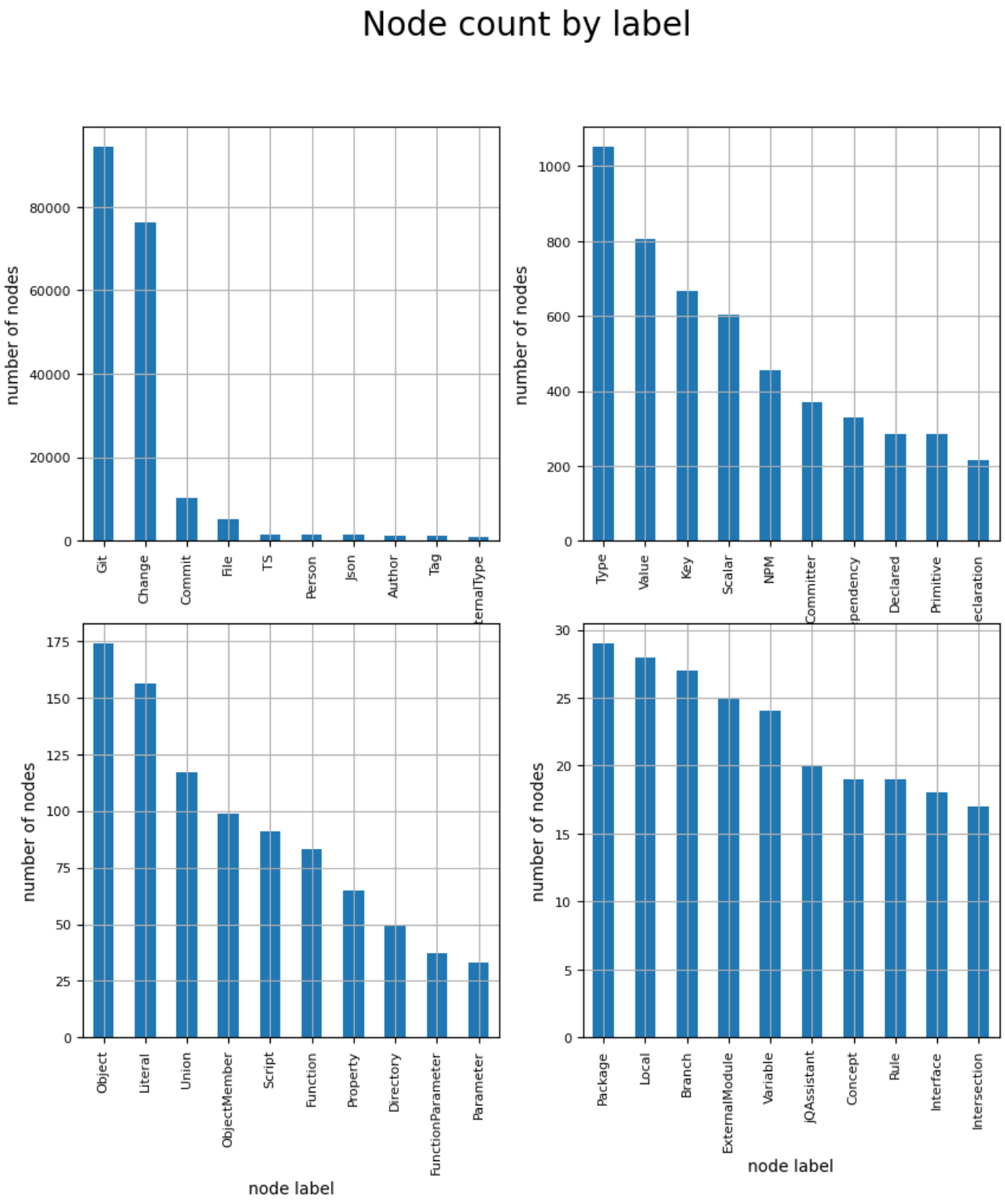
Lists the 40 labels with the highest number of nodes. Doesn't sum up to the total number of nodes or 100% because one node can have multiple labels. Helps to identify commonly used labels.

	nodeLabel	nodesWithThatLabel	nodesWithThatLabelPercent
0	Git	94396	96.396222
1	Change	76312	77.929027
2	Commit	10175	10.390605
3	File	5277	5.388818
4	TS	1581	1.614501
5	Person	1558	1.591014
6	Json	1445	1.475619
7	Author	1187	1.212152
8	Tag	1139	1.163135
9	ExternalType	1052	1.074292
10	Type	1052	1.074292
11	Value	806	0.823079
12	Key	668	0.682155
13	Scalar	603	0.615777
14	NPM	456	0.465662
15	Committer	371	0.378861
16	Dependency	330	0.336993
17	Declared	285	0.291039
18	Primitive	285	0.291039
19	ExternalDeclaration	215	0.219556
20	Object	174	0.177687
21	Literal	156	0.159306
22	Union	117	0.119479
23	ObjectMember	99	0.101098
24	Script	91	0.092928
25	Function	83	0.084759
26	Property	65	0.066377
27	Directory	50	0.051059
28	FunctionParameter	37	0.037784
29	Parameter	33	0.033699
30	Package	29	0.029615
31	Local	28	0.028593
32	Branch	27	0.027572
33	ExternalModule	25	0.025530
34	Variable	24	0.024509
35	jQAssistant	20	0.020424
36	Concept	19	0.019403
37	Rule	19	0.019403
38	Interface	18	0.018381
39	Intersection	17	0.017360

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: 273810
```

	relationshipType	nodesWithThatRelationshipType	nodesWithThatRelationshipTypePercent
0	CONTAINS_CHANGE	76312	27.870421
1	MODIFIES	76312	27.870421
2	UPDATES	50351	18.389029
3	COMMITTED	20350	7.432161
4	CREATES	18176	6.638180
5	HAS_PARENT	11202	4.091158
6	DELETES	10566	3.858880
7	RENAMES	2781	1.015668
8	HAS_NEW_NAME	1572	0.574121
9	ON_COMMIT	1139	0.415982
10	DEPENDS_ON	962	0.351339
11	HAS_KEY	668	0.243965
12	HAS_VALUE	668	0.243965
13	CONTAINS	589	0.215113
14	OF_TYPE	329	0.120156
15	EXPORTS	275	0.100435
16	REFERENCES	196	0.071582
17	DECLARES	185	0.067565
18	DECLARES_DEV_DEPENDENCY	169	0.061722
19	DECLARES_DEPENDENCY	161	0.058800
20	HAS_MEMBER	99	0.036156
21	HAS_TYPE_ARGUMENT	92	0.033600
22	DECLARES_SCRIPT	91	0.033235
23	RESOLVES_TO	81	0.029583
24	RETURNS	80	0.029217
25	HAS_PARAMETER	70	0.025565
26	CONTAINS_VALUE	51	0.018626
27	COPIES	43	0.015704
28	INITIALIZED_WITH	32	0.011687
29	COPY_OF	28	0.010226

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>
```

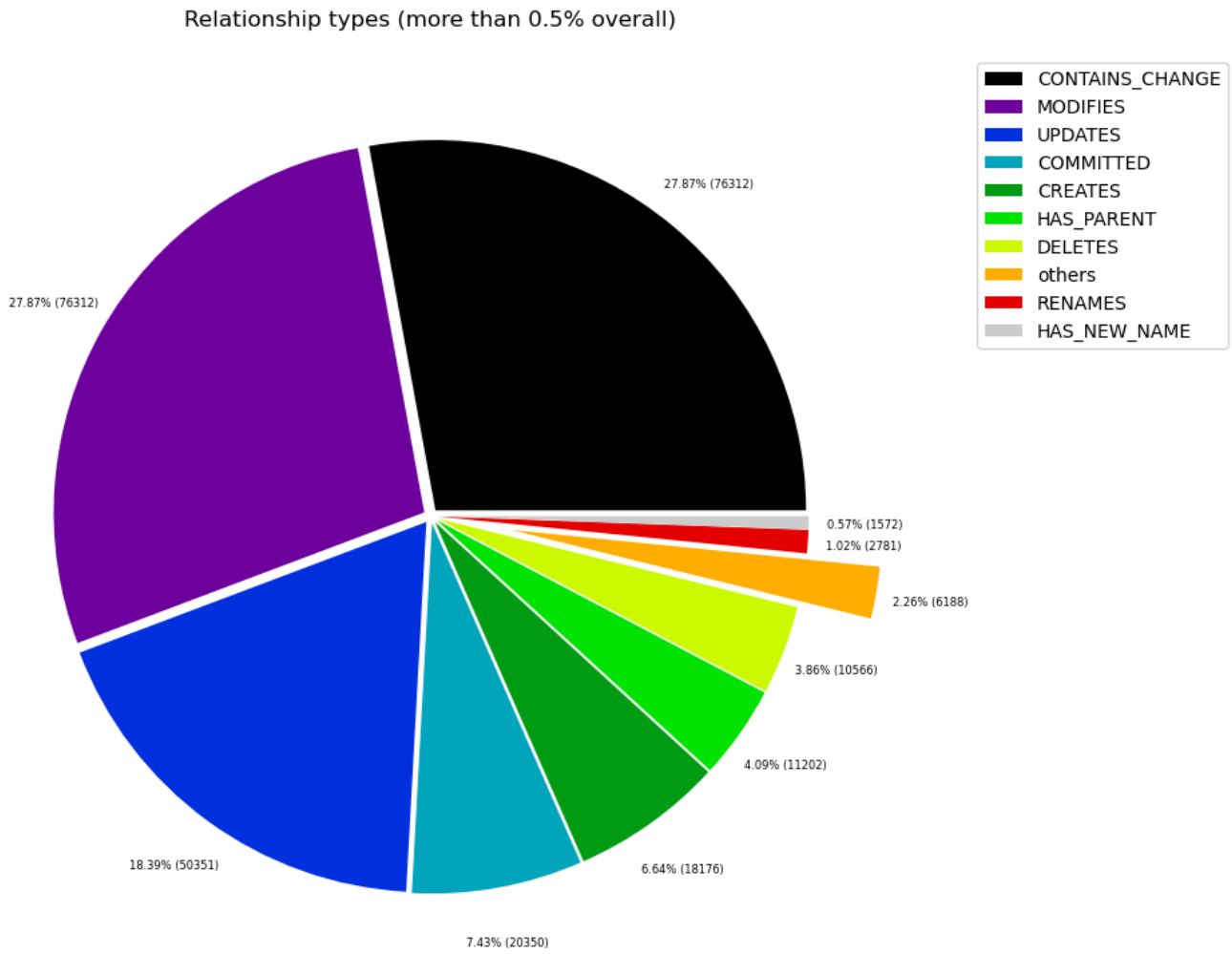


Table 2b - Lowest relationship count by type

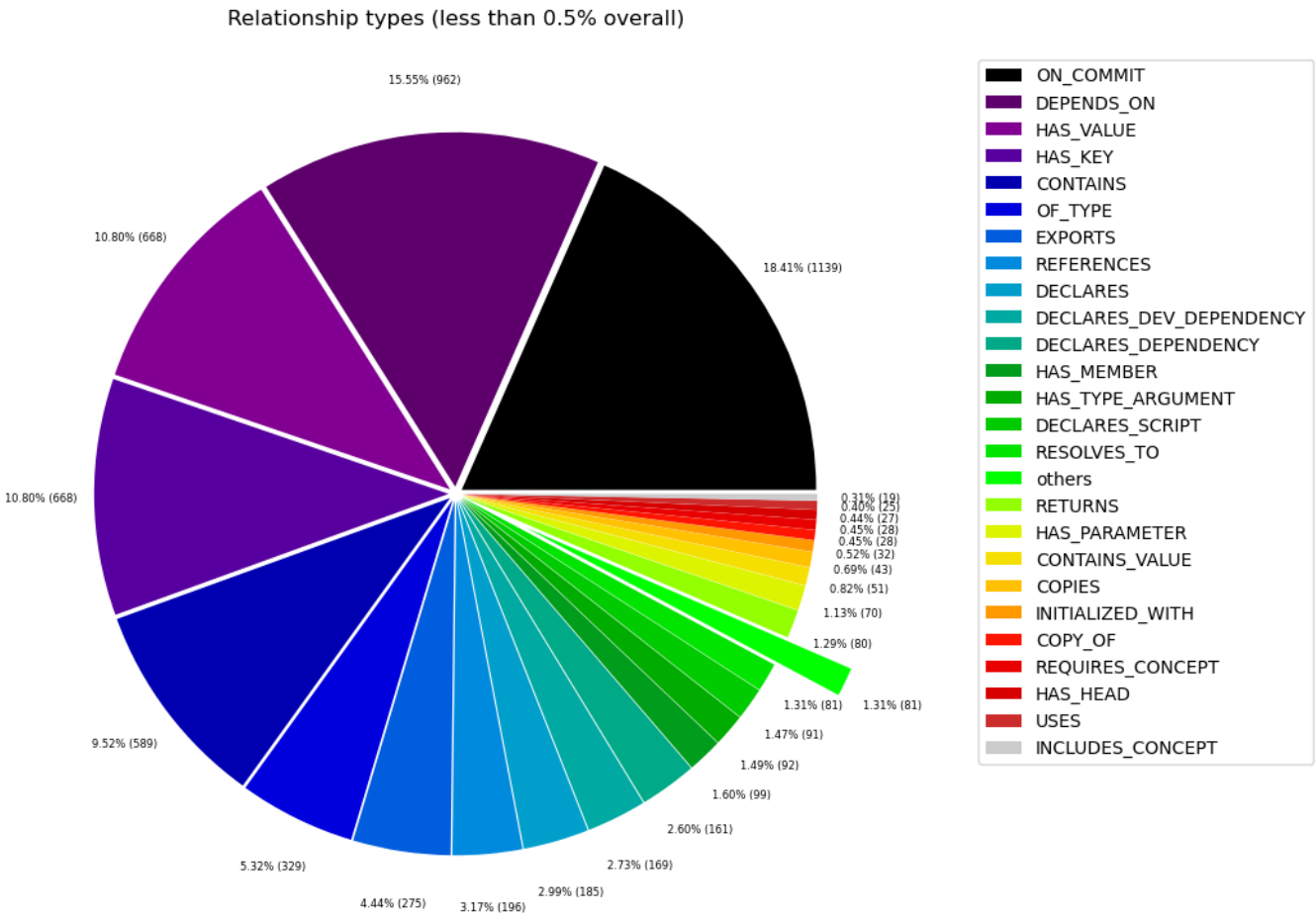
Lists the 30 relationships type with the lowest number of occurrences up to 0.5% of the total node count. This is essentially breaking down the "others" slice from the chart above.

	relationshipType	nodesWithThatRelationshipType	nodesWithThatRelationshipTypePercent
0	PROVIDED_BY_NPM_DEPENDENCY	1	0.000365
1	CONSTRAINED_BY	4	0.001461
2	REFERENCED_PROJECTS	5	0.001826
3	PARENT	6	0.002191
4	MEMBER	6	0.002191
5	HAS_ROOT	6	0.002191
6	HAS_NPM_PACKAGE	6	0.002191
7	HAS_CONFIG	6	0.002191
8	HAS_ARGUMENT	6	0.002191
9	DECLARES_ENGINE	6	0.002191
10	CONTAINS_PROJECT	6	0.002191
11	CALLS	6	0.002191
12	EXTENDS	7	0.002557
13	SIMILAR	10	0.003652
14	INCLUDES_CONCEPT	19	0.006939
15	USES	25	0.009130
16	HAS_HEAD	27	0.009861
17	REQUIRES_CONCEPT	28	0.010226
18	COPY_OF	28	0.010226
19	INITIALIZED_WITH	32	0.011687
20	COPIES	43	0.015704
21	CONTAINS_VALUE	51	0.018626
22	HAS_PARAMETER	70	0.025565
23	RETURNS	80	0.029217
24	RESOLVES_TO	81	0.029583
25	DECLARES_SCRIPT	91	0.033235
26	HAS_TYPE_ARGUMENT	92	0.033600
27	HAS_MEMBER	99	0.036156
28	DECLARES_DEPENDENCY	161	0.058800
29	DECLARES_DEV_DEPENDENCY	169	0.061722

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, Commit]	CONTAINS_CHANGE	[Git, Change]	76312	10175	
1	[Git, Change]	MODIFIES	[File, Git]	76312	76312	
2	[Git, Change]	UPDATES	[File, Git]	50351	76312	
3	[Git, Change]	CREATES	[File, Git]	18176	76312	
4	[Git, Commit]	HAS_PARENT	[Git, Commit]	11202	10175	
5	[Git, Change]	DELETES	[File, Git]	10566	76312	
6	[Author, Git, Person]	COMMITTED	[Git, Commit]	10175	1187	
7	[Committer, Git, Person]	COMMITTED	[Git, Commit]	10175	371	
8	[Git, Change]	RENAMES	[File, Git]	2781	76312	
9	[File, Git]	HAS_NEW_NAME	[File, Git]	1572	5185	
10	[Git, Tag]	ON_COMMIT	[Git, Commit]	1139	1139	
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	[File, TS, Local, Module, Mark4ModuleWeaklyCon...	DEPENDS_ON	[TS, ExternalDeclaration]	192	3	
16	[Package, File, Json, NPM]	DECLARES_DEV_DEPENDENCY	[NPM, Dependency]	169	29	
17	[Package, File, Json, NPM]	DECLARES_DEPENDENCY	[NPM, Dependency]	161	29	
18	[Type, TS, Union, ExternalType]	CONTAINS	[Type, TS, Primitive, ExternalType]	144	117	
19	[Type, TS, Declared, ExternalType]	REFERENCES	[TS, ExternalDeclaration]	141	272	
20	[TS, Function]	DEPENDS_ON	[TS, ExternalModule]	131	47	
21	[Type, TS, Union, ExternalType]	CONTAINS	[Type, TS, Literal, ExternalType]	119	117	
22	[Json, Key]	HAS_VALUE	[Json, Value, Object]	104	668	
23	[Type, Object, TS, ExternalType]	HAS_MEMBER	[Type, TS, ObjectMember, ExternalType]	98	38	
24	[Package, File, Json, NPM]	DECLARES_SCRIPT	[NPM, Script]	91	29	
25	[Type, TS, Union, ExternalType]	CONTAINS	[Type, TS, Declared, ExternalType]	69	117	
26	[File, Directory]	CONTAINS	[File, Directory]	63	34	
27	[TS, Interface]	DECLARES	[TS, Property]	61	18	
28	[File, Directory]	CONTAINS	[Package, File, Json, NPM]	58	34	
29	[File, Git]	RESOLVES_TO	[Package, File, Json, NPM]	57	5185	

Graph Density

```
total_number_of_nodes (vertices): 97925
total_number_of_relationships (edges): 273810
-> total directed graph density: 2.8553975319566808e-05
-> total directed graph density in percent: 0.002855397531956681
```