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`.

```
Total number of nodes: 93857
```

	nodeLabels	nodesWithThatLabels	nodesWithThatLabelsPercent
0	[Git, Change]	72638	77.392203
1	[Git, Commit]	9946	10.596972
2	[File, Git]	5093	5.426340
3	[Author, Git, Person]	1183	1.260428
4	[Git, Tag]	1072	1.142163
5	[Json, Key]	668	0.711721
6	[Json, Value, Scalar]	603	0.642467
7	[Committer, Git, Person]	371	0.395282
8	[NPM, Dependency]	330	0.351599
9	[Type, TS, Primitive, ExternalType]	285	0.303653
10	[Type, TS, Declared, ExternalType]	272	0.289803
11	[TS, ExternalDeclaration]	215	0.229072
12	[Type, TS, Literal, ExternalType]	136	0.144901
13	[Json, Value, Object]	133	0.141705
14	[Type, TS, Union, ExternalType]	117	0.124658
15	[Type, TS, ObjectMember, ExternalType]	98	0.104414
16	[NPM, Script]	91	0.096956
17	[TS, Property]	65	0.069254
18	[TS, Function]	47	0.050076
19	[Type, Object, TS, ExternalType]	38	0.040487
20	[Type, TS, FunctionParameter, ExternalType]	37	0.039422
21	[File, Directory]	34	0.036225
22	[TS, Parameter]	33	0.035160
23	[Type, TS, Function, ExternalType]	32	0.034094
24	[Package, File, Json, NPM]	29	0.030898
25	[TS, ExternalModule]	25	0.026636
26	[Git, Branch]	25	0.026636
27	[TS, Variable]	24	0.025571
28	[Value, TS, Literal]	20	0.021309
29	[jQAssistant, Rule, Concept]	19	0.020244

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>
```

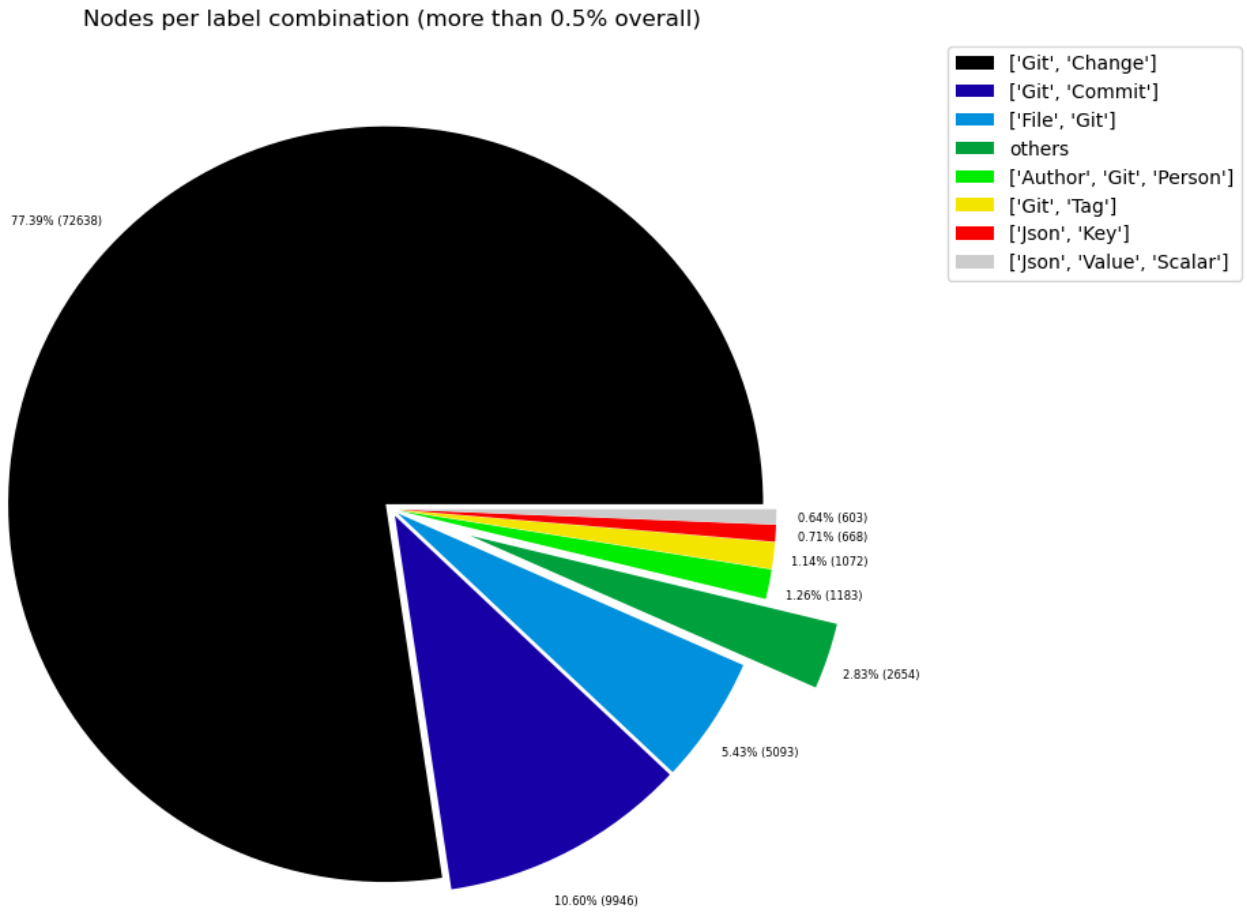


Table 1b - Lowest node count by label combination

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	0.001065
1	[File, TS, Scan]	1	0.001065
2	[TS, Method]	1	0.001065
3	[Value, TS, ObjectMember]	1	0.001065
4	[TS, Constructor]	1	0.001065
5	[TS, Class]	1	0.001065
6	[TS, Enum]	2	0.002131
7	[Value, Object, TS]	3	0.003196
8	[Type, TS, Tuple, ExternalType]	3	0.003196
9	[Value, TS, Function]	4	0.004262
10	[TS, TypeParameter]	4	0.004262
11	[Value, TS, Complex]	5	0.005327
12	[NPM, Engine]	6	0.006393
13	[Project, TS]	6	0.006393
14	[File, Local]	6	0.006393
15	[Value, TS, Call]	6	0.006393
16	[Value, TS, Member]	6	0.006393
17	[File, TS, Local, Module]	6	0.006393
18	[Type, TS, TypeParameterReference, ExternalType]	6	0.006393
19	[TS, EnumMember]	8	0.008524
20	[Type, TS, NotIdentified, ExternalType]	11	0.011720
21	[Json, Value, Array]	12	0.012785
22	[Value, TS, Declared]	13	0.013851
23	[TS, TypeAlias]	14	0.014916
24	[File, Directory, Local]	16	0.017047
25	[Type, TS, Intersection, ExternalType]	17	0.018113
26	[TS, Interface]	18	0.019178
27	[jQAssistant, Rule, Concept]	19	0.020244
28	[Value, TS, Literal]	20	0.021309
29	[TS, Variable]	24	0.025571

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>
```

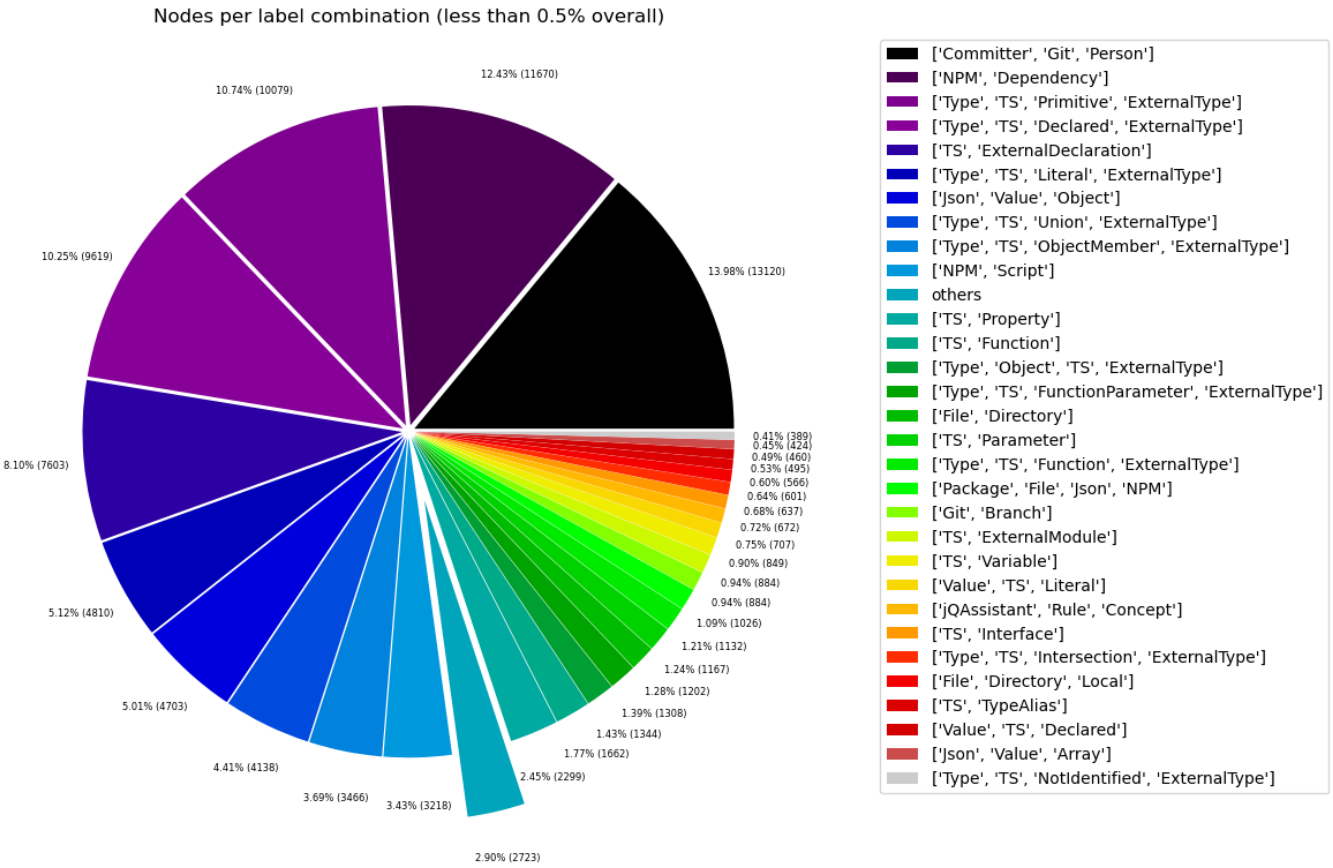


Table 1c - Highest node count by single label

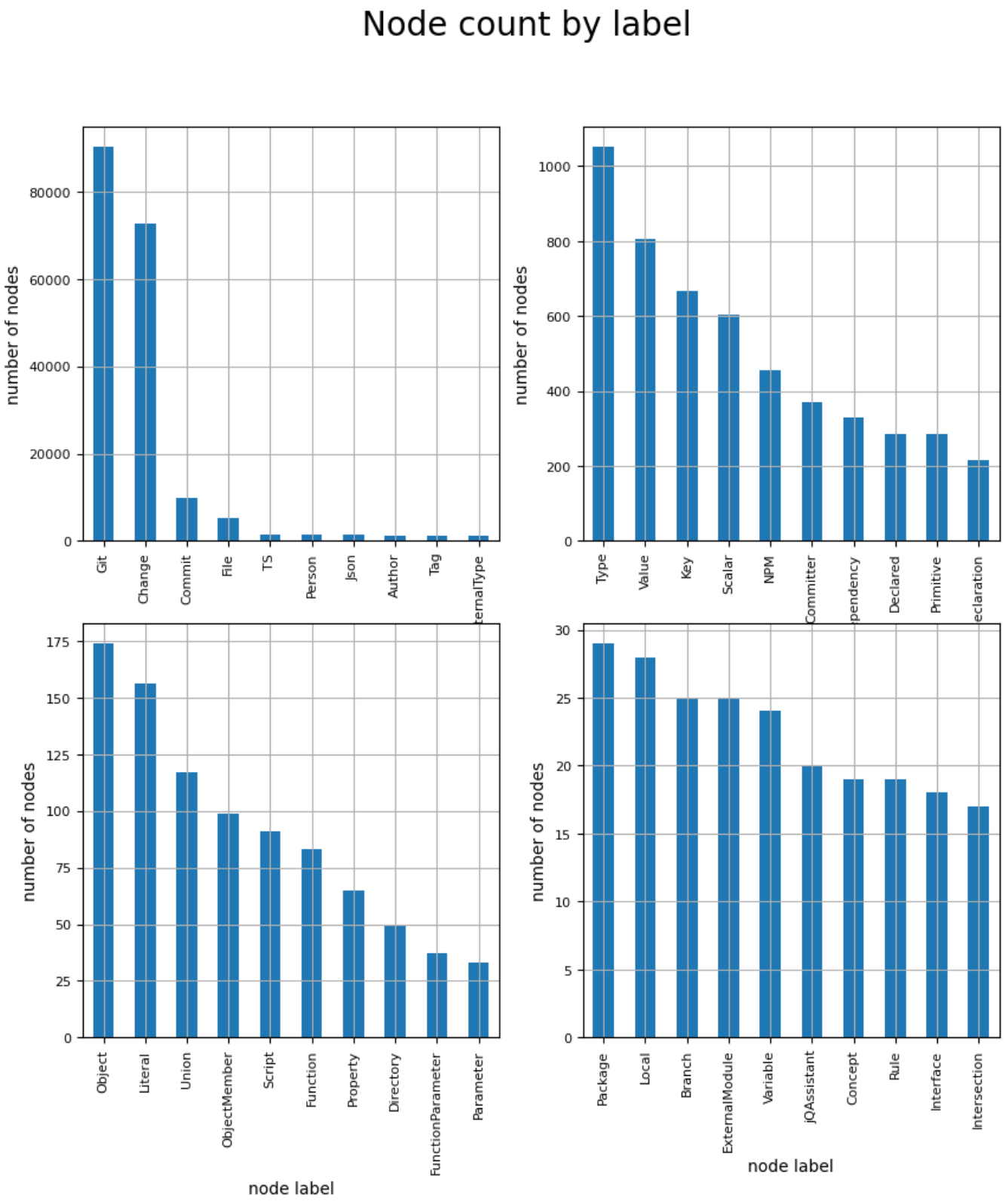
Lists the 40 labels with the highest number of nodes. Doesn't sum up to the total number of nodes or 100% because one node can have multiple labels. Helps to identify commonly used labels.

	nodeLabel	nodesWithThatLabel	nodesWithThatLabelPercent
0	Git	90328	96.240025
1	Change	72638	77.392203
2	Commit	9946	10.596972
3	File	5185	5.524362
4	TS	1581	1.684477
5	Person	1554	1.655710
6	Json	1445	1.539576
7	Author	1183	1.260428
8	Tag	1072	1.142163
9	ExternalType	1052	1.120854
10	Type	1052	1.120854
11	Value	806	0.858753
12	Key	668	0.711721
13	Scalar	603	0.642467
14	NPM	456	0.485845
15	Committer	371	0.395282
16	Dependency	330	0.351599
17	Declared	285	0.303653
18	Primitive	285	0.303653
19	ExternalDeclaration	215	0.229072
20	Object	174	0.185388
21	Literal	156	0.166210
22	Union	117	0.124658
23	ObjectMember	99	0.105480
24	Script	91	0.096956
25	Function	83	0.088432
26	Property	65	0.069254
27	Directory	50	0.053273
28	FunctionParameter	37	0.039422
29	Parameter	33	0.035160
30	Package	29	0.030898
31	Local	28	0.029833
32	Branch	25	0.026636
33	ExternalModule	25	0.026636
34	Variable	24	0.025571
35	jQAssistant	20	0.021309
36	Concept	19	0.020244
37	Rule	19	0.020244
38	Interface	18	0.019178
39	Intersection	17	0.018113

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: 261919
```

	relationshipType	nodesWithThatRelationshipType	nodesWithThatRelationshipTypePercent
0	CONTAINS_CHANGE	72638	27.733001
1	MODIFIES	72638	27.733001
2	UPDATES	48651	18.574827
3	COMMITTED	19892	7.594714
4	CREATES	16777	6.405415
5	HAS_PARENT	10954	4.182209
6	DELETES	9951	3.799266
7	RENAMES	2741	1.046507
8	HAS_NEW_NAME	1560	0.595604
9	ON_COMMIT	1072	0.409287
10	DEPENDS_ON	962	0.367289
11	HAS_KEY	668	0.255041
12	HAS_VALUE	668	0.255041
13	CONTAINS	589	0.224879
14	OF_TYPE	329	0.125611
15	EXPORTS	275	0.104994
16	REFERENCES	196	0.074832
17	DECLARES	185	0.070633
18	DECLARES_DEV_DEPENDENCY	169	0.064524
19	DECLARES_DEPENDENCY	161	0.061469
20	HAS_MEMBER	99	0.037798
21	HAS_TYPE_ARGUMENT	92	0.035125
22	DECLARES_SCRIPT	91	0.034744
23	RESOLVES_TO	80	0.030544
24	RETURNS	80	0.030544
25	HAS_PARAMETER	70	0.026726
26	CONTAINS_VALUE	51	0.019472
27	COPIES	43	0.016417
28	INITIALIZED_WITH	32	0.012218
29	COPY_OF	28	0.010690

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>
```

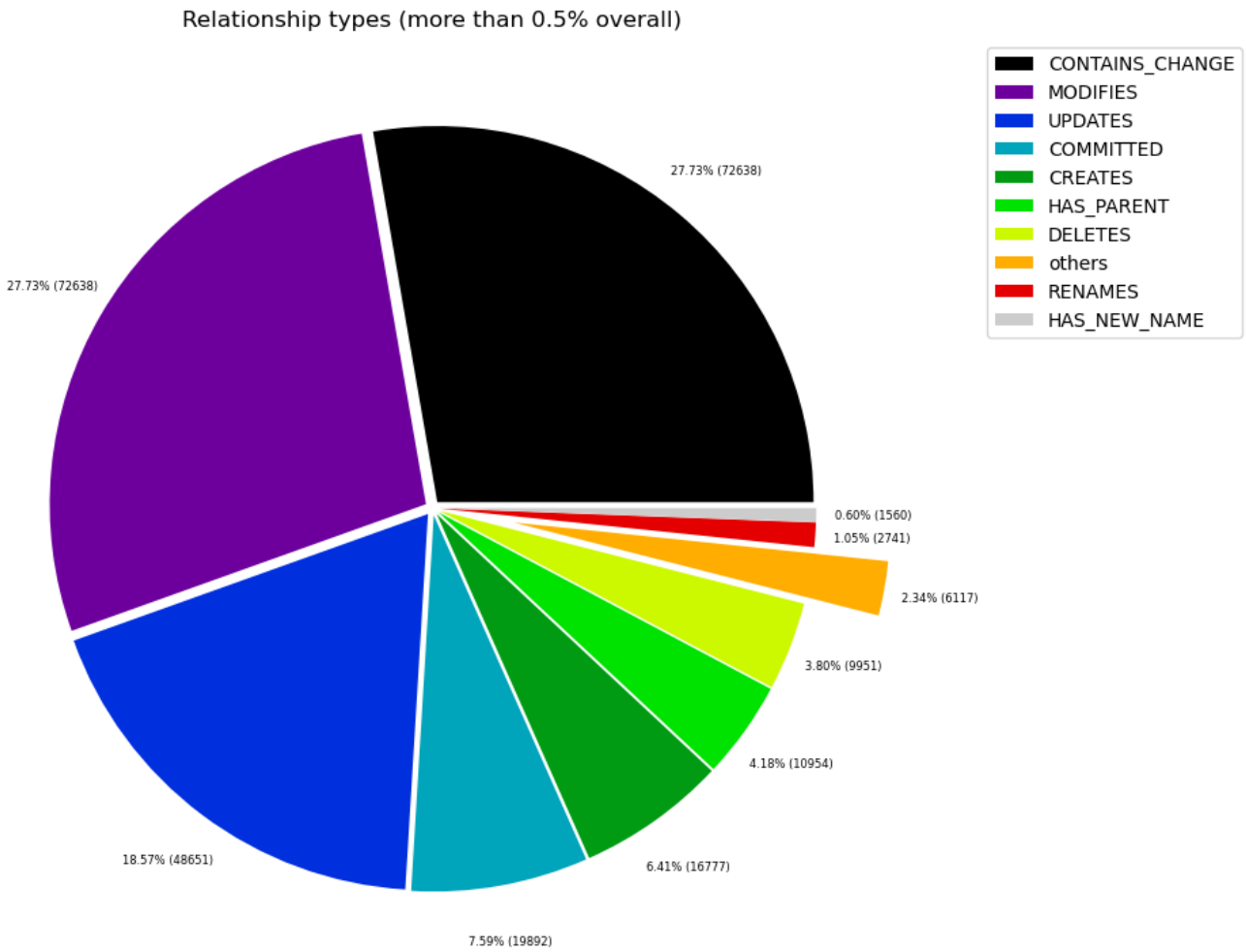


Table 2b - Lowest relationship count by type

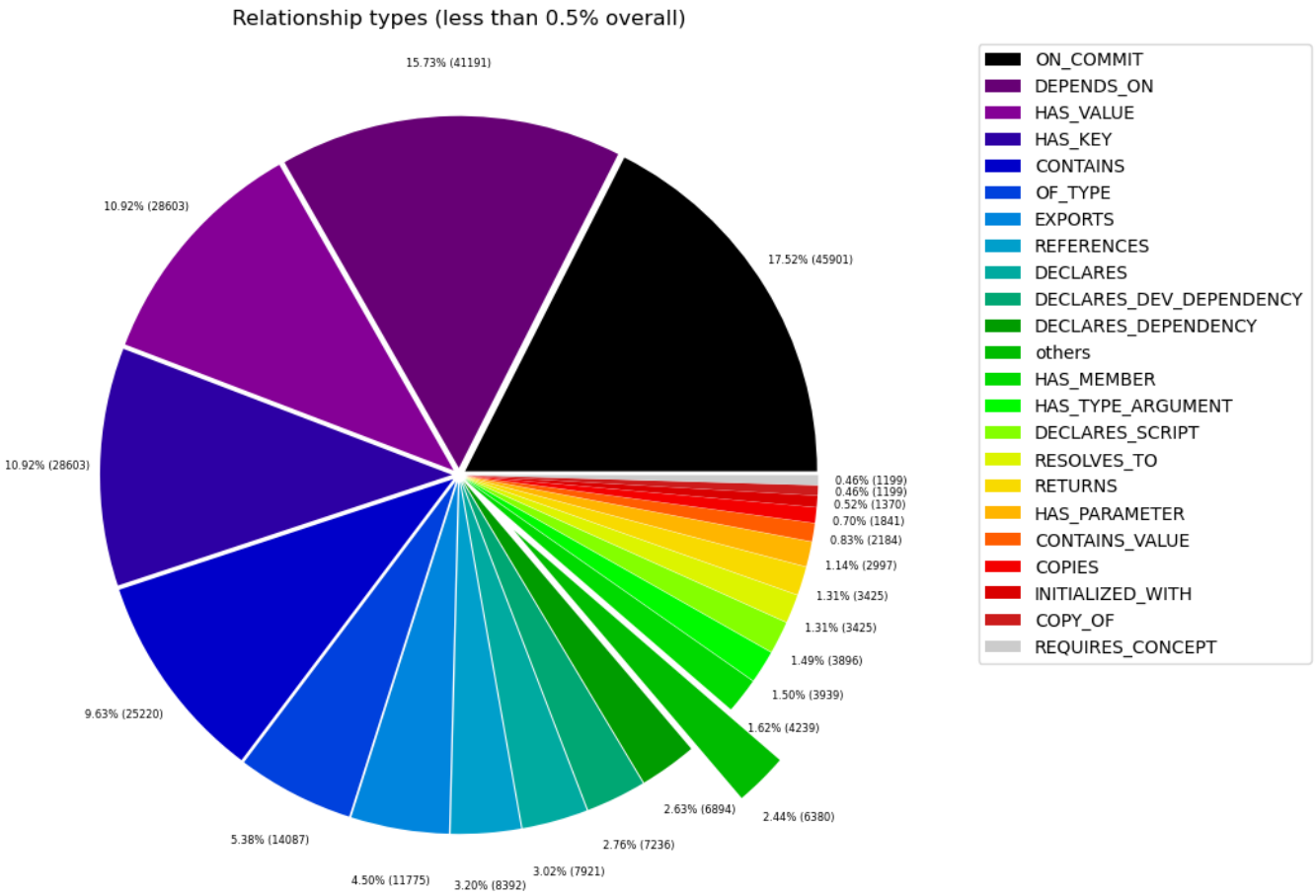
Lists the 30 relationships type with the lowest number of occurrences up to 0.5% of the total node count. This is essentially breaking down the "others" slice from the chart above.

	relationshipType	nodesWithThatRelationshipType	nodesWithThatRelationshipTypePercent
0	CONSTRAINED_BY	4	0.001527
1	REFERENCED_PROJECTS	5	0.001909
2	MEMBER	6	0.002291
3	HAS_ROOT	6	0.002291
4	HAS_NPM_PACKAGE	6	0.002291
5	HAS_CONFIG	6	0.002291
6	HAS_ARGUMENT	6	0.002291
7	DECLARES_ENGINE	6	0.002291
8	CONTAINS_PROJECT	6	0.002291
9	CALLS	6	0.002291
10	PARENT	6	0.002291
11	EXTENDS	7	0.002673
12	SIMILAR	10	0.003818
13	INCLUDES_CONCEPT	19	0.007254
14	USES	25	0.009545
15	HAS_HEAD	25	0.009545
16	REQUIRES_CONCEPT	28	0.010690
17	COPY_OF	28	0.010690
18	INITIALIZED_WITH	32	0.012218
19	COPIES	43	0.016417
20	CONTAINS_VALUE	51	0.019472
21	HAS_PARAMETER	70	0.026726
22	RETURNS	80	0.030544
23	RESOLVES_TO	80	0.030544
24	DECLARES_SCRIPT	91	0.034744
25	HAS_TYPE_ARGUMENT	92	0.035125
26	HAS_MEMBER	99	0.037798
27	DECLARES_DEPENDENCY	161	0.061469
28	DECLARES_DEV_DEPENDENCY	169	0.064524
29	DECLARES	185	0.070633

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, Commit]	CONTAINS_CHANGE	[Git, Change]	72638	9946	
1	[Git, Change]	MODIFIES	[File, Git]	72638	72638	
2	[Git, Change]	UPDATES	[File, Git]	48651	72638	
3	[Git, Change]	CREATES	[File, Git]	16777	72638	
4	[Git, Commit]	HAS_PARENT	[Git, Commit]	10954	9946	
5	[Git, Change]	DELETES	[File, Git]	9951	72638	
6	[Author, Git, Person]	COMMITTED	[Git, Commit]	9946	1183	
7	[Committer, Git, Person]	COMMITTED	[Git, Commit]	9946	371	
8	[Git, Change]	RENAMES	[File, Git]	2741	72638	
9	[File, Git]	HAS_NEW_NAME	[File, Git]	1560	5093	
10	[Git, Tag]	ON_COMMIT	[Git, Commit]	1072	1072	
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	5093	

Graph Density

```
total_number_of_nodes (vertices): 93857
total_number_of_relationships (edges): 261919
-> total directed graph density: 2.9732970100276703e-05
-> total directed graph density in percent: 0.0029732970100276703
```