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: 94014
```

	nodeLabels	nodesWithThatLabels	nodesWithThatLabelsPercent
0	[Git, Change]	72770	77.403365
1	[Git, Commit]	9963	10.597358
2	[File, Git]	5096	5.420469
3	[Author, Git, Person]	1183	1.258323
4	[Git, Tag]	1076	1.144510
5	[Json, Key]	668	0.710532
6	[Json, Value, Scalar]	603	0.641394
7	[Committer, Git, Person]	371	0.394622
8	[NPM, Dependency]	330	0.351012
9	[Type, TS, Primitive, ExternalType]	285	0.303146
10	[Type, TS, Declared, ExternalType]	272	0.289319
11	[TS, ExternalDeclaration]	215	0.228689
12	[Type, TS, Literal, ExternalType]	136	0.144659
13	[Json, Value, Object]	133	0.141468
14	[Type, TS, Union, ExternalType]	117	0.124450
15	[Type, TS, ObjectMember, ExternalType]	98	0.104240
16	[NPM, Script]	91	0.096794
17	[TS, Property]	65	0.069139
18	[TS, Function]	47	0.049993
19	[Type, Object, TS, ExternalType]	38	0.040420
20	[Type, TS, FunctionParameter, ExternalType]	37	0.039356
21	[File, Directory]	34	0.036165
22	[TS, Parameter]	33	0.035101
23	[Type, TS, Function, ExternalType]	32	0.034037
24	[Package, File, Json, NPM]	29	0.030846
25	[Git, Branch]	26	0.027655
26	[TS, ExternalModule]	25	0.026592
27	[TS, Variable]	24	0.025528
28	[Value, TS, Literal]	20	0.021273
29	[jQAssistant, Rule, Concept]	19	0.020210

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>
```

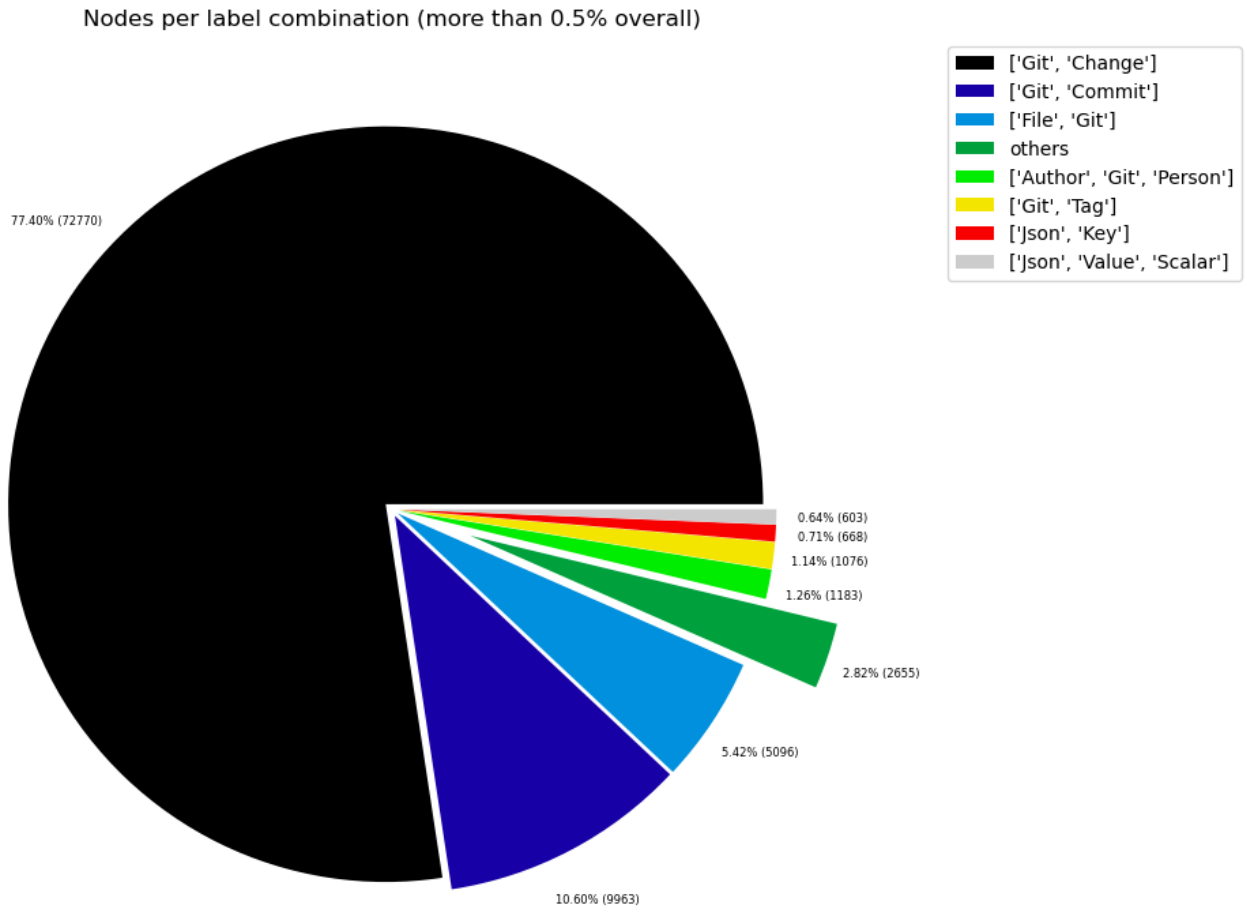


Table 1b - Lowest node count by label combination

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	0.001064
1	[File, TS, Scan]	1	0.001064
2	[TS, Method]	1	0.001064
3	[Value, TS, ObjectMember]	1	0.001064
4	[TS, Constructor]	1	0.001064
5	[TS, Class]	1	0.001064
6	[TS, Enum]	2	0.002127
7	[Value, Object, TS]	3	0.003191
8	[Type, TS, Tuple, ExternalType]	3	0.003191
9	[Value, TS, Function]	4	0.004255
10	[TS, TypeParameter]	4	0.004255
11	[Value, TS, Complex]	5	0.005318
12	[NPM, Engine]	6	0.006382
13	[Project, TS]	6	0.006382
14	[File, Local]	6	0.006382
15	[Value, TS, Call]	6	0.006382
16	[Value, TS, Member]	6	0.006382
17	[File, TS, Local, Module]	6	0.006382
18	[Type, TS, TypeParameterReference, ExternalType]	6	0.006382
19	[TS, EnumMember]	8	0.008509
20	[Type, TS, NotIdentified, ExternalType]	11	0.011700
21	[Json, Value, Array]	12	0.012764
22	[Value, TS, Declared]	13	0.013828
23	[TS, TypeAlias]	14	0.014891
24	[File, Directory, Local]	16	0.017019
25	[Type, TS, Intersection, ExternalType]	17	0.018082
26	[TS, Interface]	18	0.019146
27	[jQAssistant, Rule, Concept]	19	0.020210
28	[Value, TS, Literal]	20	0.021273
29	[TS, Variable]	24	0.025528

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>
```

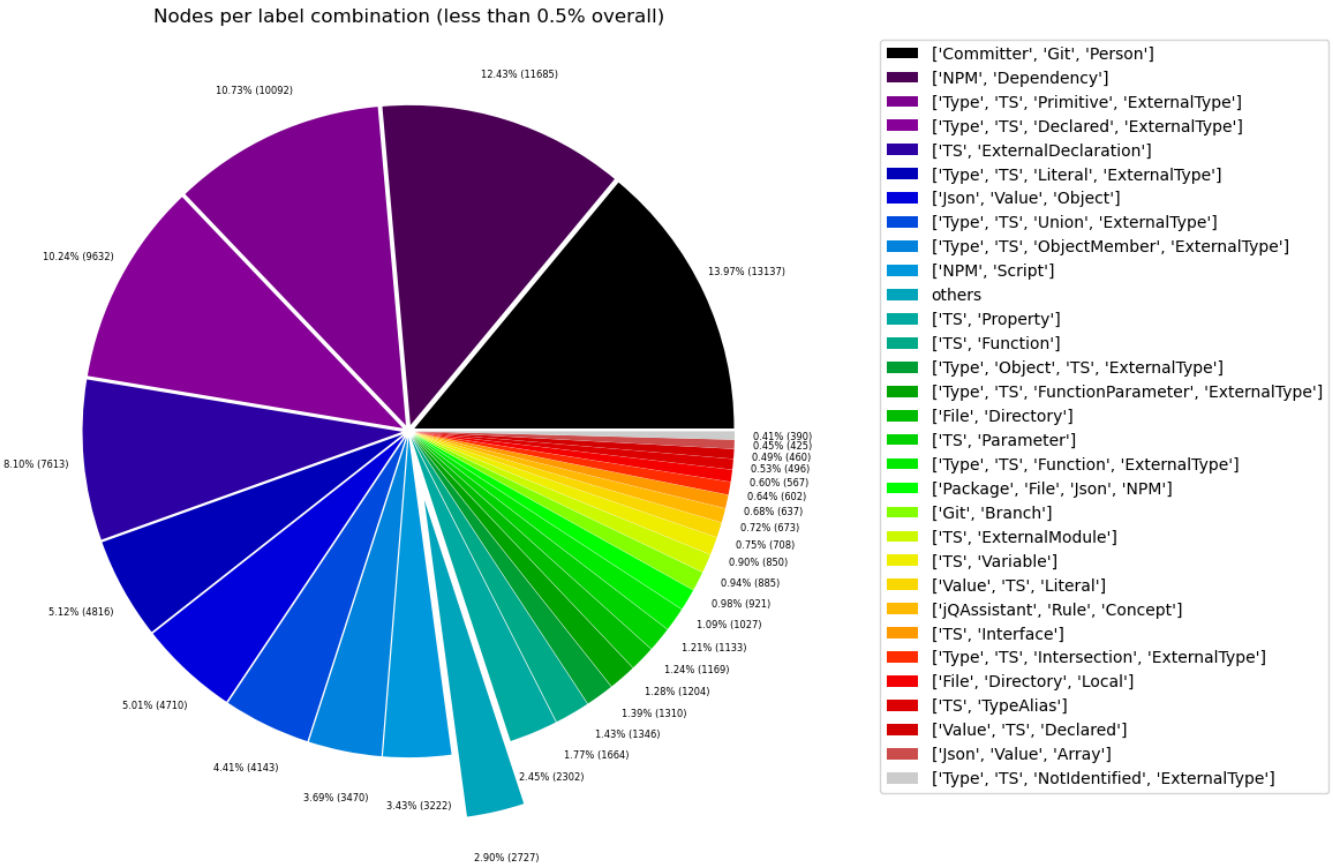


Table 1c - Highest node count by single label

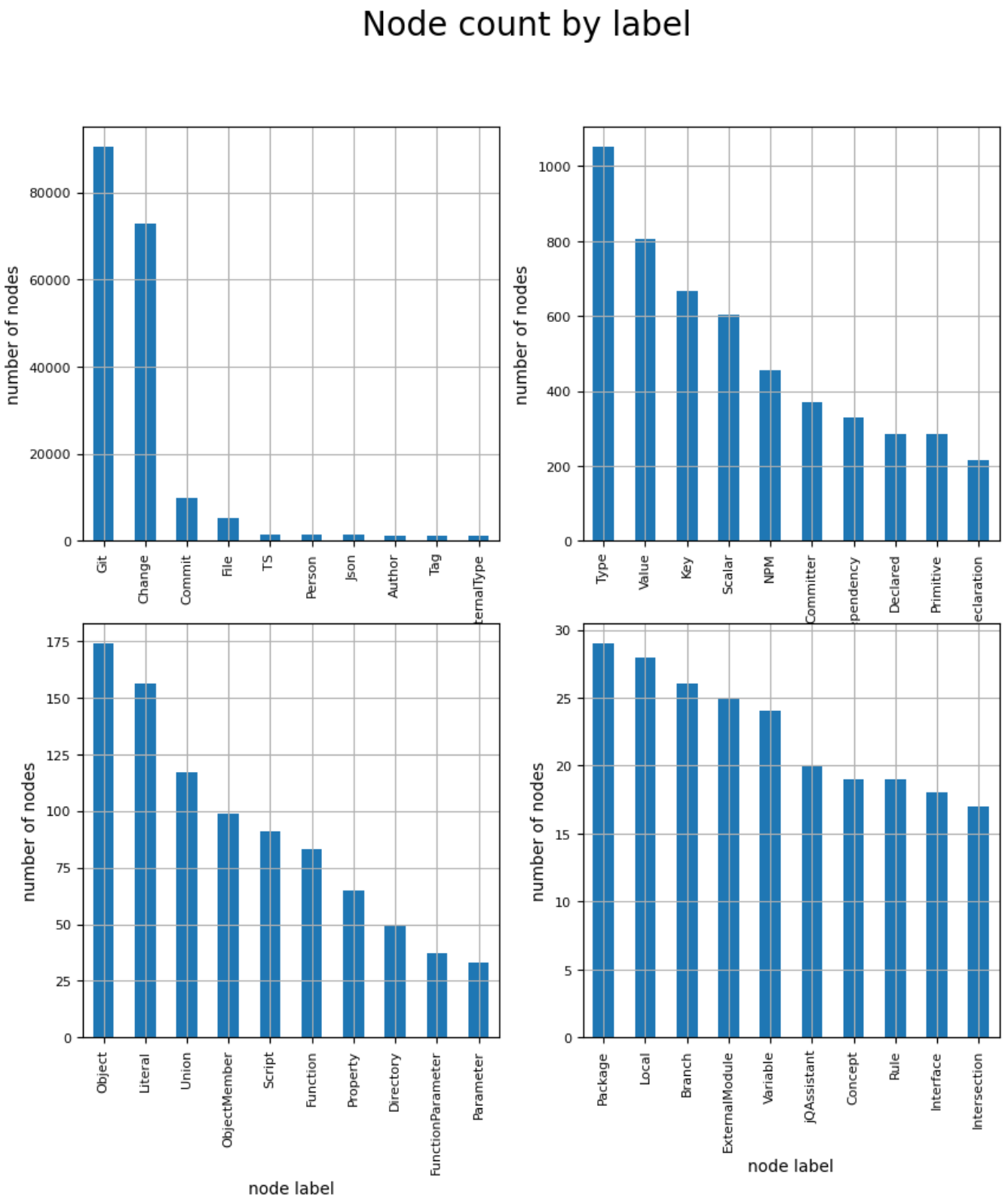
Lists the 40 labels with the highest number of nodes. Doesn't sum up to the total number of nodes or 100% because one node can have multiple labels. Helps to identify commonly used labels.

	nodeLabel	nodesWithThatLabel	nodesWithThatLabelPercent
0	Git	90485	96.246304
1	Change	72770	77.403365
2	Commit	9963	10.597358
3	File	5188	5.518327
4	TS	1581	1.681664
5	Person	1554	1.652945
6	Json	1445	1.537005
7	Author	1183	1.258323
8	Tag	1076	1.144510
9	ExternalType	1052	1.118982
10	Type	1052	1.118982
11	Value	806	0.857319
12	Key	668	0.710532
13	Scalar	603	0.641394
14	NPM	456	0.485034
15	Committer	371	0.394622
16	Dependency	330	0.351012
17	Declared	285	0.303146
18	Primitive	285	0.303146
19	ExternalDeclaration	215	0.228689
20	Object	174	0.185079
21	Literal	156	0.165933
22	Union	117	0.124450
23	ObjectMember	99	0.105303
24	Script	91	0.096794
25	Function	83	0.088285
26	Property	65	0.069139
27	Directory	50	0.053184
28	FunctionParameter	37	0.039356
29	Parameter	33	0.035101
30	Package	29	0.030846
31	Local	28	0.029783
32	Branch	26	0.027655
33	ExternalModule	25	0.026592
34	Variable	24	0.025528
35	jQAssistant	20	0.021273
36	Concept	19	0.020210
37	Rule	19	0.020210
38	Interface	18	0.019146
39	Intersection	17	0.018082

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: 262373
```

	relationshipType	nodesWithThatRelationshipType	nodesWithThatRelationshipTypePercent
0	CONTAINS_CHANGE	72770	27.735323
1	MODIFIES	72770	27.735323
2	UPDATES	48771	18.588422
3	COMMITTED	19926	7.594531
4	CREATES	16781	6.395856
5	HAS_PARENT	10973	4.182214
6	DELETES	9959	3.795741
7	RENAMES	2741	1.044696
8	HAS_NEW_NAME	1560	0.594573
9	ON_COMMIT	1076	0.410103
10	DEPENDS_ON	962	0.366654
11	HAS_KEY	668	0.254599
12	HAS_VALUE	668	0.254599
13	CONTAINS	589	0.224490
14	OF_TYPE	329	0.125394
15	EXPORTS	275	0.104813
16	REFERENCES	196	0.074703
17	DECLARES	185	0.070510
18	DECLARES_DEV_DEPENDENCY	169	0.064412
19	DECLARES_DEPENDENCY	161	0.061363
20	HAS_MEMBER	99	0.037733
21	HAS_TYPE_ARGUMENT	92	0.035065
22	DECLARES_SCRIPT	91	0.034683
23	RESOLVES_TO	80	0.030491
24	RETURNS	80	0.030491
25	HAS_PARAMETER	70	0.026680
26	CONTAINS_VALUE	51	0.019438
27	COPIES	43	0.016389
28	INITIALIZED_WITH	32	0.012196
29	COPY_OF	28	0.010672

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>
```

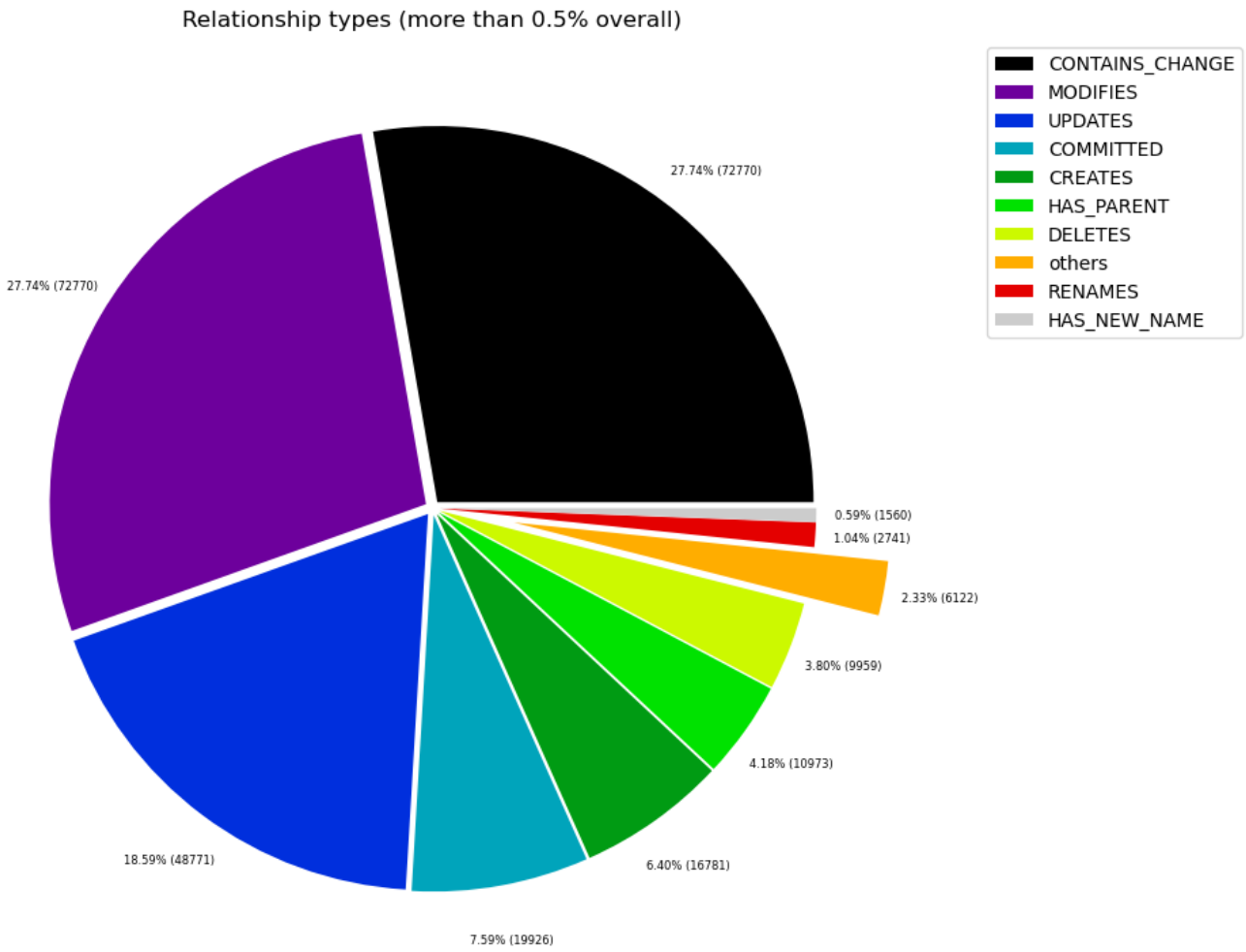


Table 2b - Lowest relationship count by type

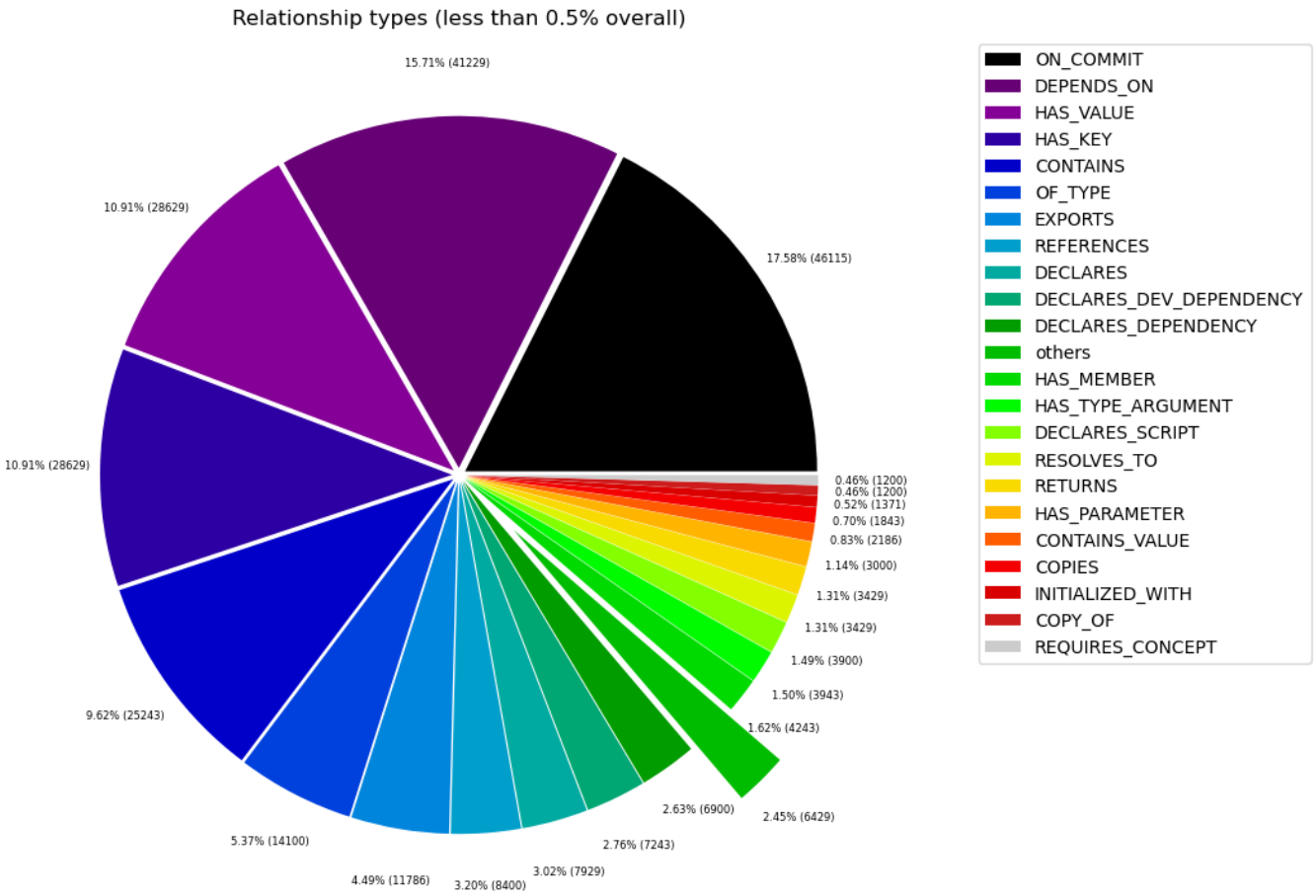
Lists the 30 relationships type with the lowest number of occurrences up to 0.5% of the total node count. This is essentially breaking down the "others" slice from the chart above.

	relationshipType	nodesWithThatRelationshipType	nodesWithThatRelationshipTypePercent
0	CONSTRAINED_BY	4	0.001525
1	REFERENCED_PROJECTS	5	0.001906
2	MEMBER	6	0.002287
3	HAS_ROOT	6	0.002287
4	HAS_NPM_PACKAGE	6	0.002287
5	HAS_CONFIG	6	0.002287
6	HAS_ARGUMENT	6	0.002287
7	DECLARES_ENGINE	6	0.002287
8	CONTAINS_PROJECT	6	0.002287
9	CALLS	6	0.002287
10	PARENT	6	0.002287
11	EXTENDS	7	0.002668
12	SIMILAR	10	0.003811
13	INCLUDES_CONCEPT	19	0.007242
14	USES	25	0.009528
15	HAS_HEAD	26	0.009910
16	REQUIRES_CONCEPT	28	0.010672
17	COPY_OF	28	0.010672
18	INITIALIZED_WITH	32	0.012196
19	COPIES	43	0.016389
20	CONTAINS_VALUE	51	0.019438
21	HAS_PARAMETER	70	0.026680
22	RETURNS	80	0.030491
23	RESOLVES_TO	80	0.030491
24	DECLARES_SCRIPT	91	0.034683
25	HAS_TYPE_ARGUMENT	92	0.035065
26	HAS_MEMBER	99	0.037733
27	DECLARES_DEPENDENCY	161	0.061363
28	DECLARES_DEV_DEPENDENCY	169	0.064412
29	DECLARES	185	0.070510

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]	72770	9963	
1	[Git, Change]	MODIFIES	[File, Git]	72770	72770	
2	[Git, Change]	UPDATES	[File, Git]	48771	72770	
3	[Git, Change]	CREATES	[File, Git]	16781	72770	
4	[Git, Commit]	HAS_PARENT	[Git, Commit]	10973	9963	
5	[Author, Git, Person]	COMMITTED	[Git, Commit]	9963	1183	
6	[Committer, Git, Person]	COMMITTED	[Git, Commit]	9963	371	
7	[Git, Change]	DELETES	[File, Git]	9959	72770	
8	[Git, Change]	RENAMES	[File, Git]	2741	72770	
9	[File, Git]	HAS_NEW_NAME	[File, Git]	1560	5096	
10	[Git, Tag]	ON_COMMIT	[Git, Commit]	1076	1076	
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]	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	5096	

Graph Density

```
total_number_of_nodes (vertices): 94014
total_number_of_relationships (edges): 262373
-> total directed graph density: 2.9685112469653865e-05
-> total directed graph density in percent: 0.0029685112469653866
```