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]	76400	77.924197
1	[Git, Commit]	10183	10.386153
2	[File, Git]	5185	5.288442
3	[Author, Git, Person]	1188	1.211701
4	[Git, Tag]	1141	1.163763
5	[Json, Key]	668	0.681327
6	[Json, Value, Scalar]	603	0.615030
7	[Committer, Git, Person]	371	0.378402
8	[NPM, Dependency]	330	0.336584
9	[Type, TS, Primitive, ExternalType]	291	0.296806
10	[Type, TS, Declared, ExternalType]	276	0.281506
11	[TS, ExternalDeclaration]	215	0.219289
12	[Type, TS, Literal, ExternalType]	136	0.138713
13	[Json, Value, Object]	133	0.135653
14	[Type, TS, Union, ExternalType]	119	0.121374
15	[Type, TS, ObjectMember, ExternalType]	101	0.103015
16	[NPM, Script]	91	0.092815
17	[TS, Property]	65	0.066297
18	[TS, Function]	47	0.047938
19	[Type, TS, FunctionParameter, ExternalType]	40	0.040798
20	[Type, Object, TS, ExternalType]	39	0.039778
21	[File, Directory]	34	0.034678
22	[Type, TS, Function, ExternalType]	34	0.034678
23	[TS, Parameter]	33	0.033658
24	[Package, File, Json, NPM]	29	0.029579
25	[TS, ExternalModule]	25	0.025499
26	[Git, Branch]	25	0.025499
27	[TS, Variable]	24	0.024479
28	[Value, TS, Literal]	20	0.020399
29	[jQAssistant, Rule, Concept]	19	0.019379

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>
```

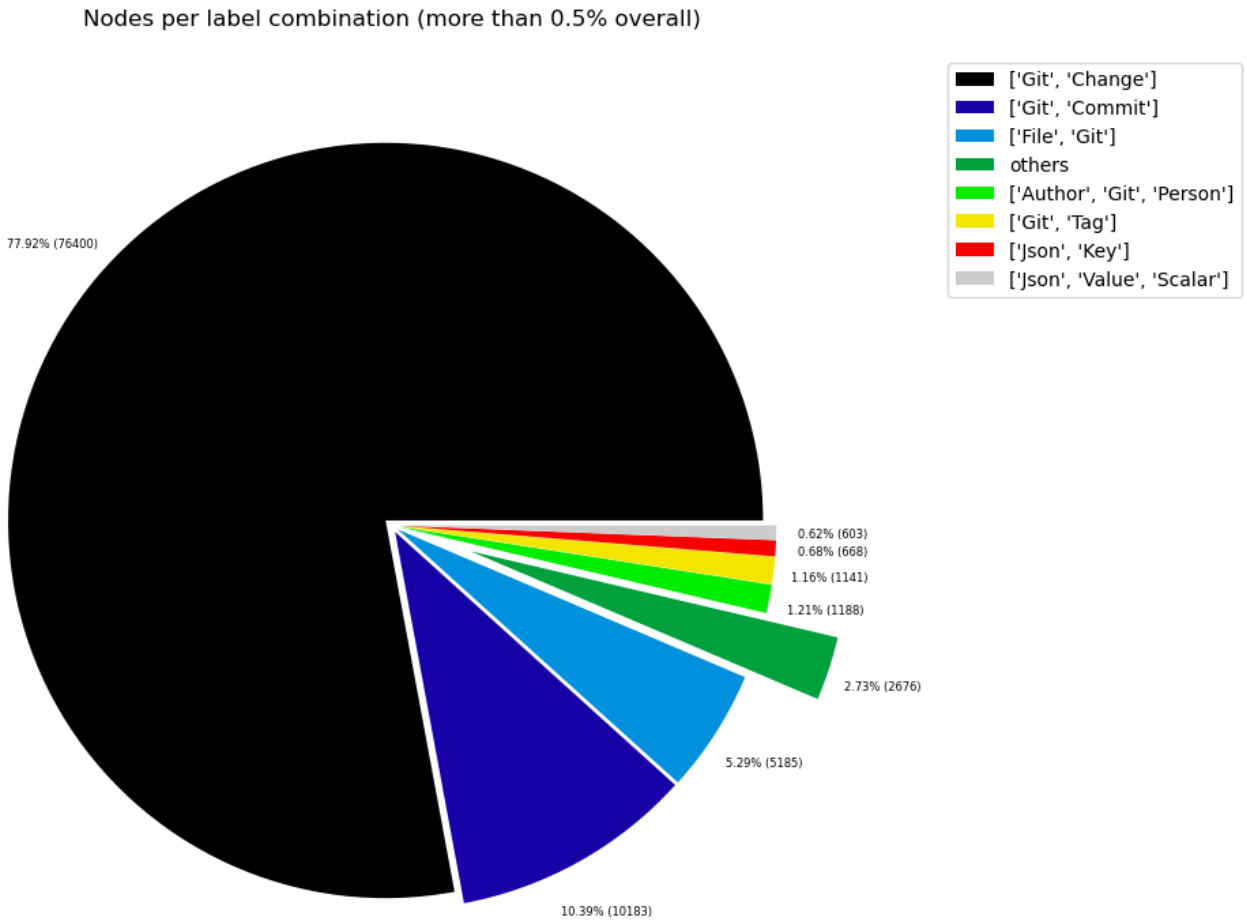

Table 1b - Lowest node count by label combination

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	0.001020
1	[File, TS, Scan]	1	0.001020
2	[TS, Method]	1	0.001020
3	[Value, TS, ObjectMember]	1	0.001020
4	[TS, Constructor]	1	0.001020
5	[TS, Class]	1	0.001020
6	[TS, Enum]	2	0.002040
7	[Value, Object, TS]	3	0.003060
8	[Type, TS, Tuple, ExternalType]	3	0.003060
9	[Value, TS, Function]	4	0.004080
10	[TS, TypeParameter]	4	0.004080
11	[Value, TS, Complex]	5	0.005100
12	[NPM, Engine]	6	0.006120
13	[Project, TS]	6	0.006120
14	[File, Local]	6	0.006120
15	[Value, TS, Call]	6	0.006120
16	[Value, TS, Member]	6	0.006120
17	[File, TS, Local, Module]	6	0.006120
18	[Type, TS, TypeParameterReference, ExternalType]	6	0.006120
19	[TS, EnumMember]	8	0.008160
20	[Type, TS, NotIdentified, ExternalType]	11	0.011219
21	[Json, Value, Array]	12	0.012239
22	[Value, TS, Declared]	13	0.013259
23	[TS, TypeAlias]	16	0.016319
24	[File, Directory, Local]	16	0.016319
25	[TS, Interface]	17	0.017339
26	[Type, TS, Intersection, ExternalType]	17	0.017339
27	[jQAssistant, Rule, Concept]	19	0.019379
28	[Value, TS, Literal]	20	0.020399
29	[TS, Variable]	24	0.024479

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>
```

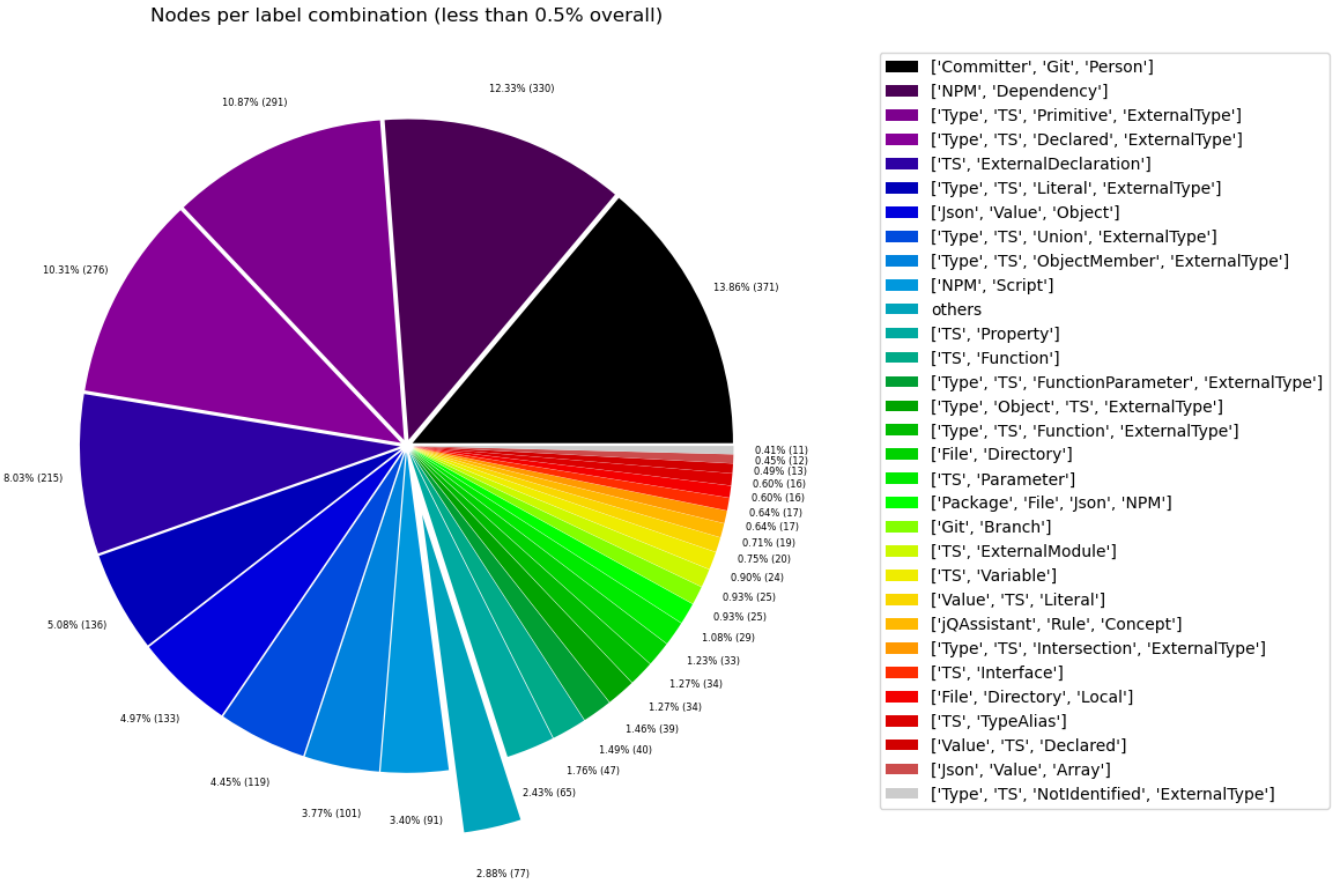

Table 1c - Highest node count by single label

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	94493	96.378157
1	Change	76400	77.924197
2	Commit	10183	10.386153
3	File	5277	5.382277
4	TS	1603	1.634980
5	Person	1559	1.590102
6	Json	1445	1.473828
7	Author	1188	1.211701
8	Tag	1141	1.163763
9	ExternalType	1073	1.094407
10	Type	1073	1.094407
11	Value	806	0.822080
12	Key	668	0.681327
13	Scalar	603	0.615030
14	NPM	456	0.465097
15	Committer	371	0.378402
16	Dependency	330	0.336584
17	Primitive	291	0.296806
18	Declared	289	0.294766
19	ExternalDeclaration	215	0.219289
20	Object	175	0.178491
21	Literal	156	0.159112
22	Union	119	0.121374
23	ObjectMember	102	0.104035
24	Script	91	0.092815
25	Function	85	0.086696
26	Property	65	0.066297
27	Directory	50	0.050998
28	FunctionParameter	40	0.040798
29	Parameter	33	0.033658
30	Package	29	0.029579
31	Local	28	0.028559
32	Branch	25	0.025499
33	ExternalModule	25	0.025499
34	Variable	24	0.024479
35	jQAssistant	20	0.020399
36	Concept	19	0.019379
37	Rule	19	0.019379
38	Interface	17	0.017339
39	Intersection	17	0.017339

Chart 1c - Highest node count by label

Shows the 40 labels with the highest number of nodes.

```
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```
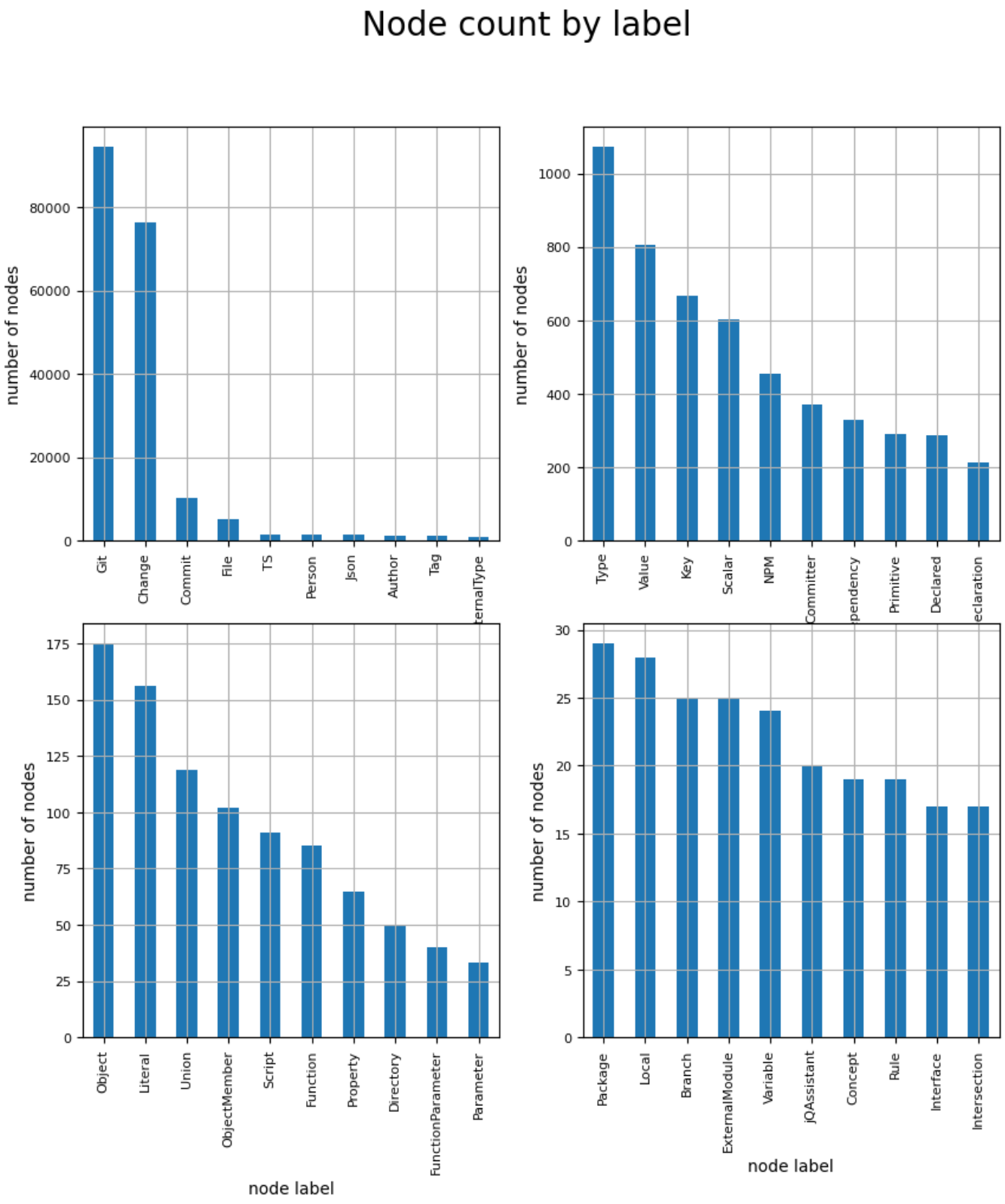



Relationship Types

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: 274123
```

	relationshipType	nodesWithThatRelationshipType	nodesWithThatRelationshipTypePercent
0	CONTAINS_CHANGE	76400	27.870700
1	MODIFIES	76400	27.870700
2	UPDATES	50435	18.398675
3	COMMITTED	20366	7.429512
4	CREATES	18178	6.631330
5	HAS_PARENT	11211	4.089770
6	DELETES	10568	3.855204
7	RENAMES	2781	1.014508
8	HAS_NEW_NAME	1572	0.573465
9	ON_COMMIT	1141	0.416237
10	DEPENDS_ON	962	0.350937
11	HAS_KEY	668	0.243686
12	HAS_VALUE	668	0.243686
13	CONTAINS	593	0.216326
14	OF_TYPE	337	0.122938
15	EXPORTS	276	0.100685
16	REFERENCES	197	0.071866
17	DECLARES	186	0.067853
18	DECLARES_DEV_DEPENDENCY	169	0.061651
19	DECLARES_DEPENDENCY	161	0.058733
20	HAS_MEMBER	102	0.037210
21	HAS_TYPE_ARGUMENT	94	0.034291
22	DECLARES_SCRIPT	91	0.033197
23	RETURNS	82	0.029914
24	RESOLVES_TO	81	0.029549
25	HAS_PARAMETER	73	0.026630
26	CONTAINS_VALUE	51	0.018605
27	COPIES	43	0.015686
28	INITIALIZED_WITH	32	0.011674
29	COPY_OF	28	0.010214

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>
```

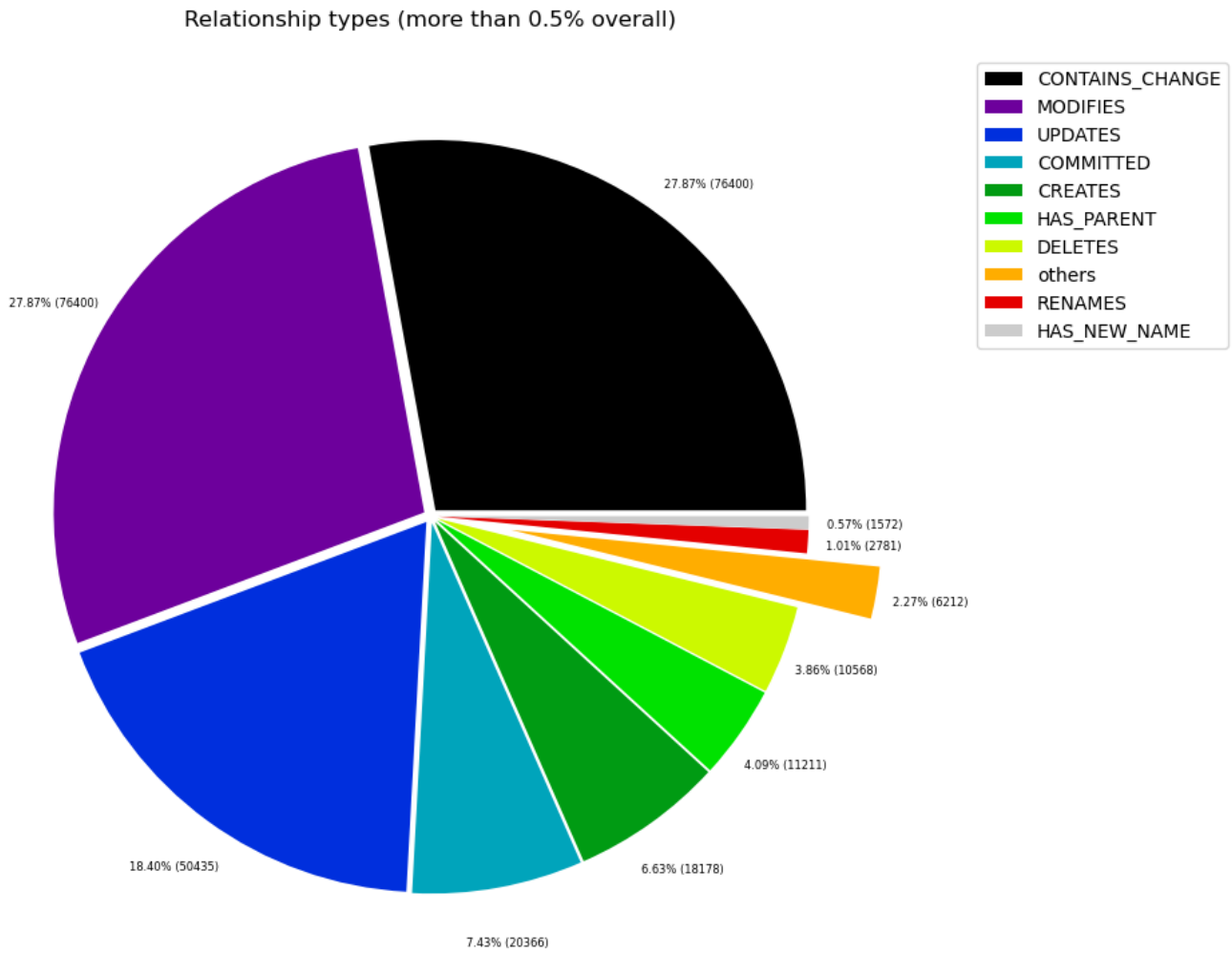


Table 2b - Lowest relationship count by type

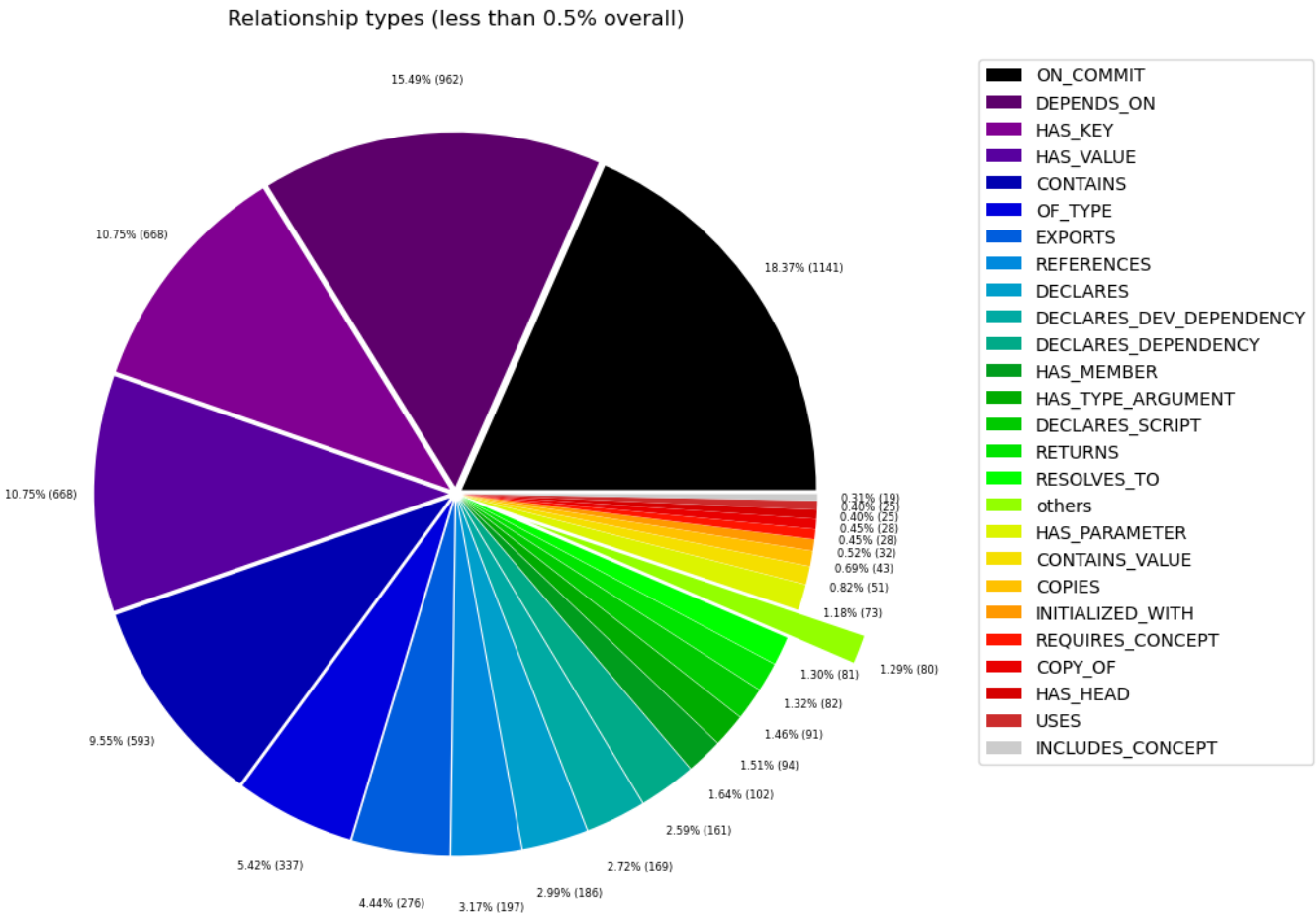
Lists the 30 relationships type with the lowest number of occurrences up to 0.5% of the total node count. This is essentially breaking down the "others" slice from the chart above.

	relationshipType	nodesWithThatRelationshipType	nodesWithThatRelationshipTypePercent
0	PROVIDED_BY_NPM_DEPENDENCY	1	0.000365
1	CONSTRAINED_BY	4	0.001459
2	REFERENCED_PROJECTS	5	0.001824
3	PARENT	6	0.002189
4	CONTAINS_PROJECT	6	0.002189
5	DECLARES_ENGINE	6	0.002189
6	EXTENDS	6	0.002189
7	CALLS	6	0.002189
8	HAS_CONFIG	6	0.002189
9	HAS_NPM_PACKAGE	6	0.002189
10	HAS_ROOT	6	0.002189
11	MEMBER	6	0.002189
12	HAS_ARGUMENT	6	0.002189
13	SIMILAR	10	0.003648
14	INCLUDES_CONCEPT	19	0.006931
15	USES	25	0.009120
16	HAS_HEAD	25	0.009120
17	REQUIRES_CONCEPT	28	0.010214
18	COPY_OF	28	0.010214
19	INITIALIZED_WITH	32	0.011674
20	COPIES	43	0.015686
21	CONTAINS_VALUE	51	0.018605
22	HAS_PARAMETER	73	0.026630
23	RESOLVES_TO	81	0.029549
24	RETURNS	82	0.029914
25	DECLARES_SCRIPT	91	0.033197
26	HAS_TYPE_ARGUMENT	94	0.034291
27	HAS_MEMBER	102	0.037210
28	DECLARES_DEPENDENCY	161	0.058733
29	DECLARES_DEV_DEPENDENCY	169	0.061651

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]	76400	10183	
1	[Git, Change]	MODIFIES	[File, Git]	76400	76400	
2	[Git, Change]	UPDATES	[File, Git]	50435	76400	
3	[Git, Change]	CREATES	[File, Git]	18178	76400	
4	[Git, Commit]	HAS_PARENT	[Git, Commit]	11211	10183	
5	[Git, Change]	DELETES	[File, Git]	10568	76400	
6	[Author, Git, Person]	COMMITTED	[Git, Commit]	10183	1188	
7	[Committer, Git, Person]	COMMITTED	[Git, Commit]	10183	371	
8	[Git, Change]	RENAMES	[File, Git]	2781	76400	
9	[File, Git]	HAS_NEW_NAME	[File, Git]	1572	5185	
10	[Git, Tag]	ON_COMMIT	[Git, Commit]	1141	1141	
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]	147	119	
19	[Type, TS, Declared, ExternalType]	REFERENCES	[TS, ExternalDeclaration]	142	276	
20	[TS, Function]	DEPENDS_ON	[TS, ExternalModule]	131	47	
21	[Type, TS, Union, ExternalType]	CONTAINS	[Type, TS, Literal, ExternalType]	119	119	
22	[Json, Key]	HAS_VALUE	[Json, Value, Object]	104	668	
23	[Type, Object, TS, ExternalType]	HAS_MEMBER	[Type, TS, ObjectMember, ExternalType]	101	39	
24	[Package, File, Json, NPM]	DECLARES_SCRIPT	[NPM, Script]	91	29	
25	[Type, TS, Union, ExternalType]	CONTAINS	[Type, TS, Declared, ExternalType]	70	119	
26	[File, Directory]	CONTAINS	[File, Directory]	63	34	
27	[TS, Interface]	DECLARES	[TS, Property]	61	17	
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): 98044
total_number_of_relationships (edges): 274123
-> total directed graph density: 2.8517264457369027e-05
-> total directed graph density in percent: 0.002851726445736903
```