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: 90727
```

	nodeLabels	nodesWithThatLabels	nodesWithThatLabelsPercent
0	[Git, Change]	71594	78.911460
1	[Git, Commit]	9827	10.831395
2	[File, Git]	5042	5.557331
3	[Author, Git, Person]	1181	1.301707
4	[Git, Tag]	1045	1.151807
5	[Committer, Git, Person]	371	0.408919
6	[Type, TS, Primitive, ExternalType]	291	0.320742
7	[Type, TS, Declared, ExternalType]	286	0.315231
8	[TS, ExternalDeclaration]	211	0.232566
9	[Type, TS, Literal, ExternalType]	136	0.149900
10	[Type, TS, Union, ExternalType]	120	0.132265
11	[Type, TS, ObjectMember, ExternalType]	98	0.108016
12	[TS, Property]	65	0.071644
13	[TS, Function]	47	0.051804
14	[Type, TS, Object, ExternalType]	38	0.041884
15	[Type, TS, FunctionParameter, ExternalType]	38	0.041884
16	[TS, Parameter]	33	0.036373
17	[Type, TS, Function, ExternalType]	33	0.036373
18	[TS, ExternalModule]	25	0.027555
19	[TS, Variable]	24	0.026453
20	[Git, Branch]	22	0.024249
21	[TS, Literal, Value]	20	0.022044
22	[jQAssistant, Rule, Concept]	19	0.020942
23	[TS, Interface]	18	0.019840
24	[Type, TS, Intersection, ExternalType]	17	0.018738
25	[File, Local, Directory]	16	0.017635
26	[TS, TypeAlias]	14	0.015431
27	[TS, Declared, Value]	13	0.014329
28	[Type, TS, NotIdentified, ExternalType]	11	0.012124
29	[TS, EnumMember]	8	0.008818

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>
```

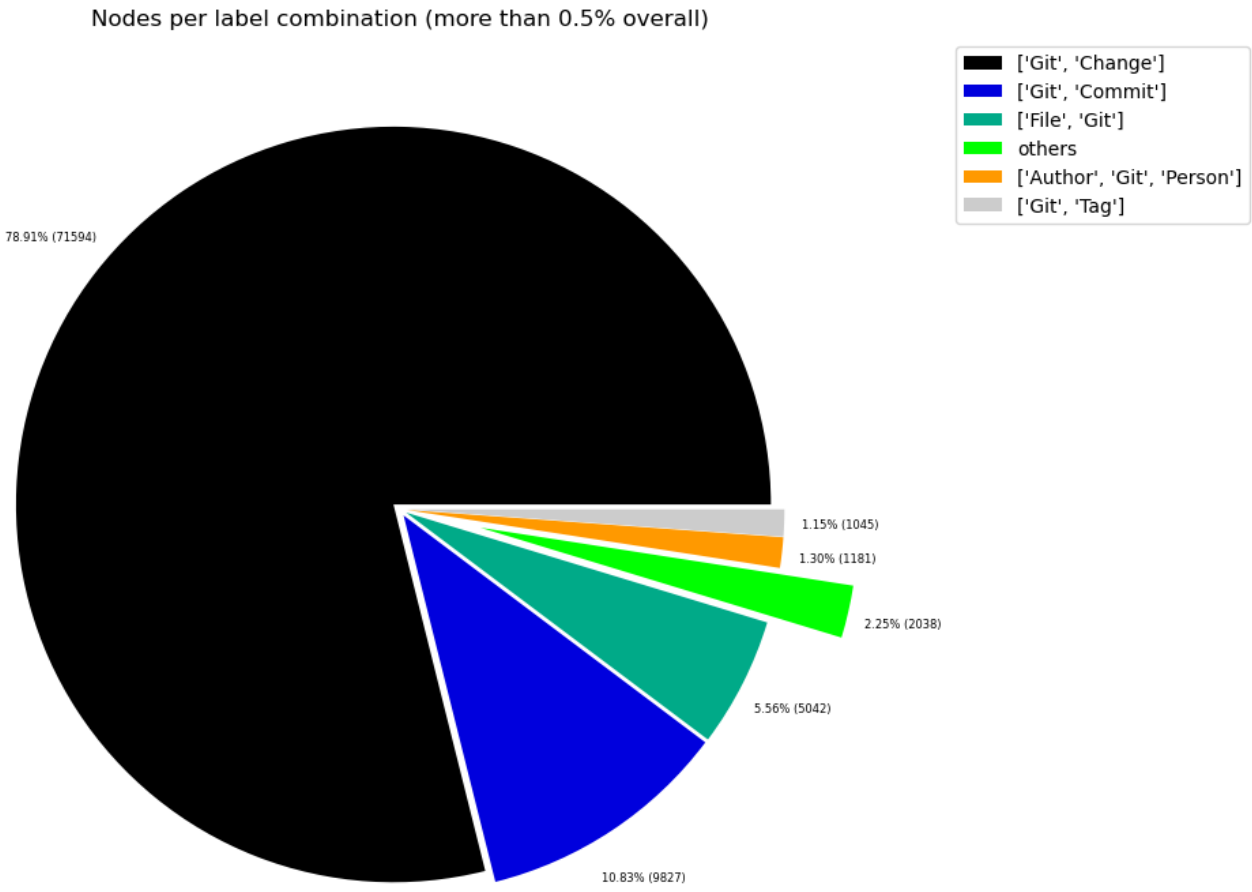


Table 1b - Lowest node count by label combination

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	0.001102
1	[File, TS, Scan]	1	0.001102
2	[TS, Class]	1	0.001102
3	[File, Directory]	1	0.001102
4	[TS, Method]	1	0.001102
5	[TS, ObjectMember, Value]	1	0.001102
6	[TS, Constructor]	1	0.001102
7	[TS, Enum]	2	0.002204
8	[TS, Object, Value]	3	0.003307
9	[Type, TS, Tuple, ExternalType]	3	0.003307
10	[TS, Function, Value]	4	0.004409
11	[TS, TypeParameter]	4	0.004409
12	[TS, Value, Complex]	5	0.005511
13	[Type, TS, TypeParameterReference, ExternalType]	6	0.006613
14	[File, TS, Local, Module]	6	0.006613
15	[File, Local]	6	0.006613
16	[Project, TS]	6	0.006613
17	[TS, Value, Member]	6	0.006613
18	[TS, Value, Call]	6	0.006613
19	[TS, EnumMember]	8	0.008818
20	[Type, TS, NotIdentified, ExternalType]	11	0.012124
21	[TS, Declared, Value]	13	0.014329
22	[TS, TypeAlias]	14	0.015431
23	[File, Local, Directory]	16	0.017635
24	[Type, TS, Intersection, ExternalType]	17	0.018738
25	[TS, Interface]	18	0.019840
26	[jQAssistant, Rule, Concept]	19	0.020942
27	[TS, Literal, Value]	20	0.022044
28	[Git, Branch]	22	0.024249
29	[TS, Variable]	24	0.026453

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>
```

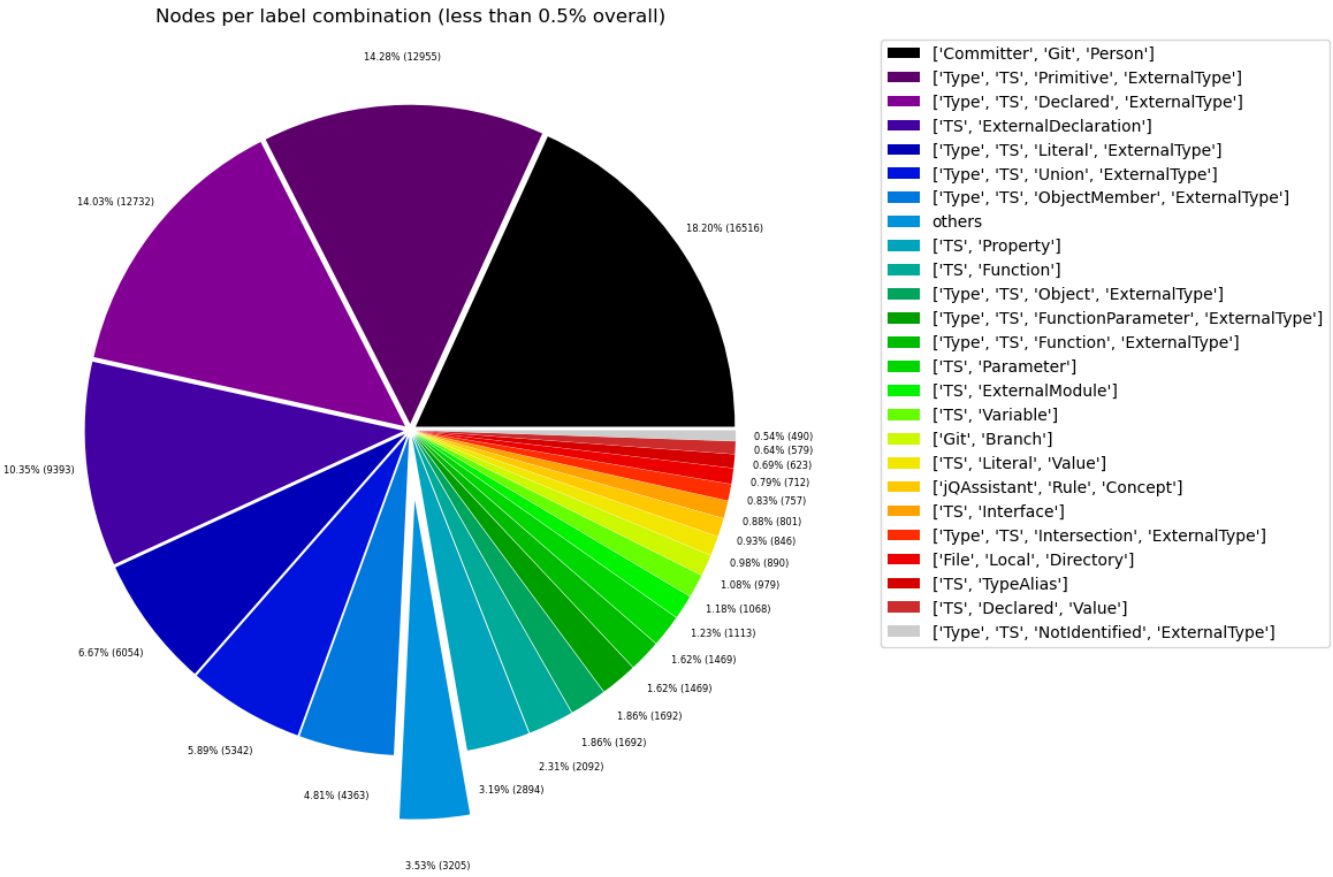


Table 1c - Highest node count by single label

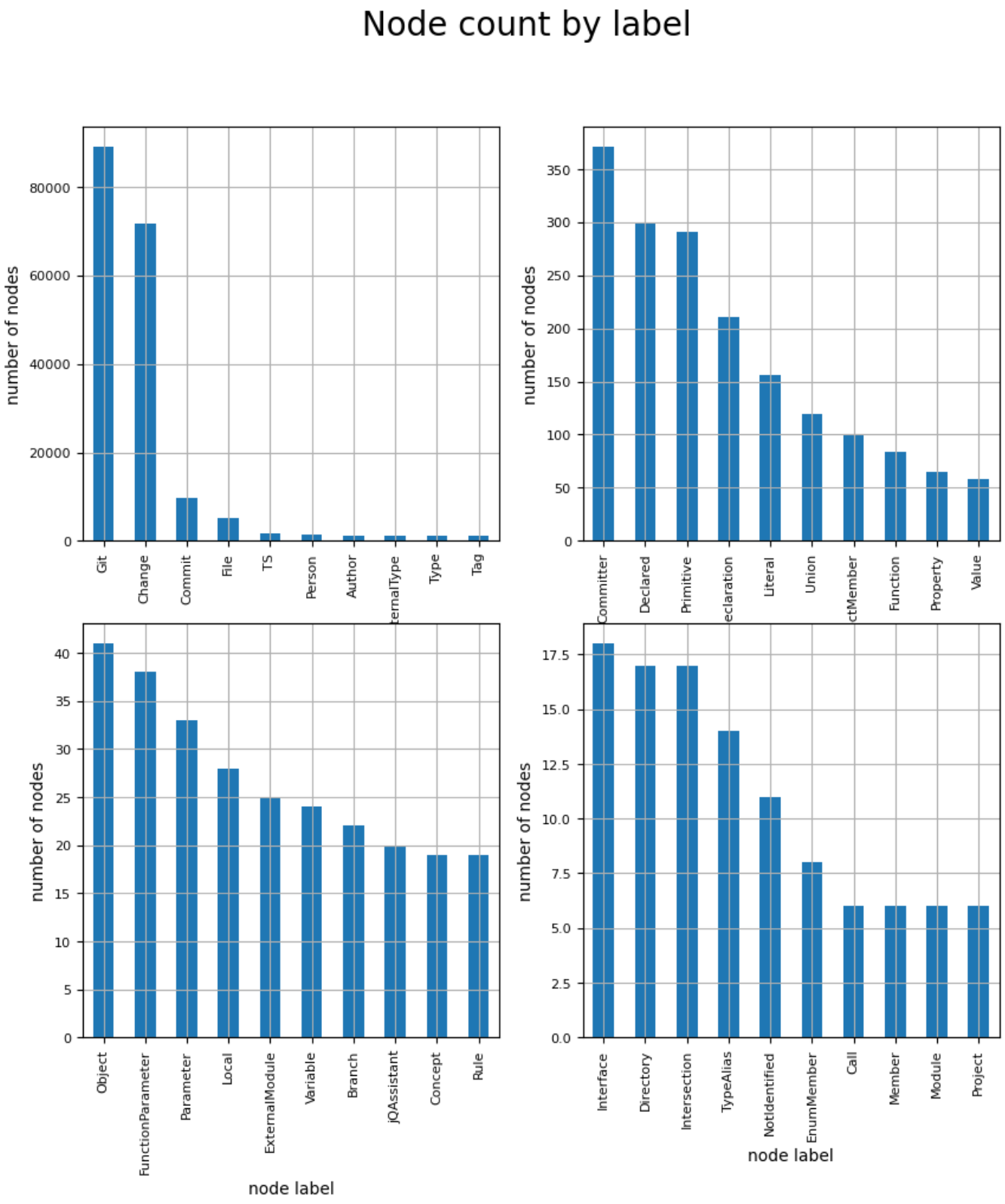
Lists the 40 labels with the highest number of nodes. Doesn't sum up to the total number of nodes or 100% because one node can have multiple labels. Helps to identify commonly used labels.

	nodeLabel	nodesWithThatLabel	nodesWithThatLabelPercent
0	Git	89082	98.186868
1	Change	71594	78.911460
2	Commit	9827	10.831395
3	File	5072	5.590398
4	TS	1602	1.765737
5	Person	1552	1.710626
6	Author	1181	1.301707
7	ExternalType	1077	1.187078
8	Type	1077	1.187078
9	Tag	1045	1.151807
10	Committer	371	0.408919
11	Declared	299	0.329560
12	Primitive	291	0.320742
13	ExternalDeclaration	211	0.232566
14	Literal	156	0.171944
15	Union	120	0.132265
16	ObjectMember	99	0.109119
17	Function	84	0.092585
18	Property	65	0.071644
19	Value	58	0.063928
20	Object	41	0.045191
21	FunctionParameter	38	0.041884
22	Parameter	33	0.036373
23	Local	28	0.030862
24	ExternalModule	25	0.027555
25	Variable	24	0.026453
26	Branch	22	0.024249
27	jQAssistant	20	0.022044
28	Concept	19	0.020942
29	Rule	19	0.020942
30	Interface	18	0.019840
31	Directory	17	0.018738
32	Intersection	17	0.018738
33	TypeAlias	14	0.015431
34	NotIdentified	11	0.012124
35	EnumMember	8	0.008818
36	Call	6	0.006613
37	Member	6	0.006613
38	Module	6	0.006613
39	Project	6	0.006613

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: 256271
```

	relationshipType	nodesWithThatRelationshipType	nodesWithThatRelationshipTypePercent
0	CONTAINS_CHANGE	71594	27.936832
1	MODIFIES	71594	27.936832
2	UPDATES	47761	18.636912
3	COMMITTED	19654	7.669225
4	CREATES	16653	6.498199
5	HAS_PARENT	10821	4.222483
6	DELETES	9884	3.856855
7	RENAMES	2704	1.055133
8	HAS_NEW_NAME	1542	0.601707
9	ON_COMMIT	1045	0.407771
10	DEPENDS_ON	953	0.371872
11	CONTAINS	465	0.181449
12	OF_TYPE	330	0.128770
13	EXPORTS	271	0.105747
14	REFERENCES	198	0.077262
15	DECLARES	185	0.072189
16	HAS_MEMBER	99	0.038631
17	HAS_TYPE_ARGUMENT	99	0.038631
18	RETURNS	81	0.031607
19	HAS_PARAMETER	71	0.027705
20	INITIALIZED_WITH	32	0.012487
21	COPIES	29	0.011316
22	REQUIRES_CONCEPT	28	0.010926
23	USES	25	0.009755
24	RESOLVES_TO	23	0.008975
25	HAS_HEAD	22	0.008585
26	COPY_OF	21	0.008194
27	INCLUDES_CONCEPT	19	0.007414
28	SIMILAR	10	0.003902
29	EXTENDS	7	0.002731

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>
```

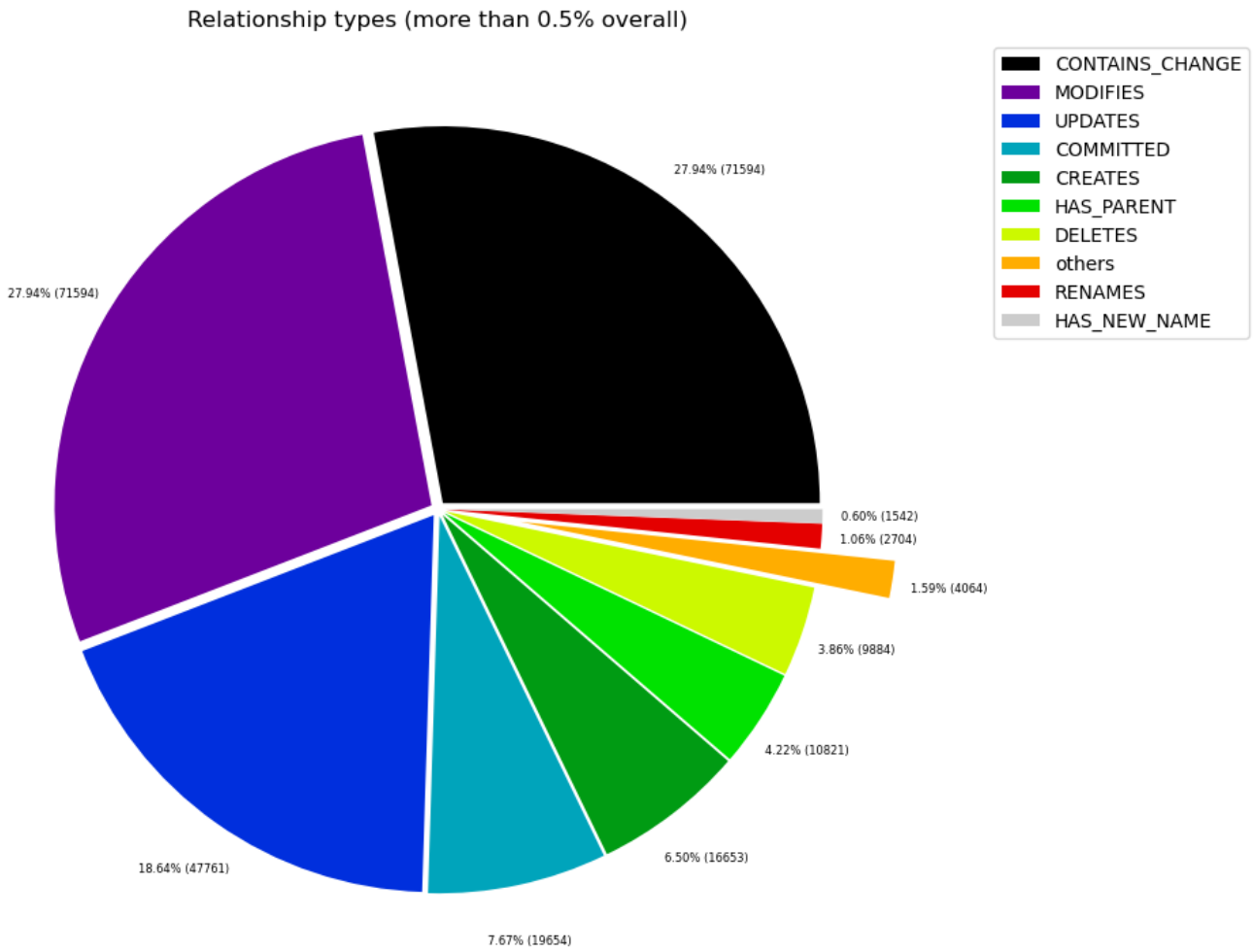


Table 2b - Lowest relationship count by type

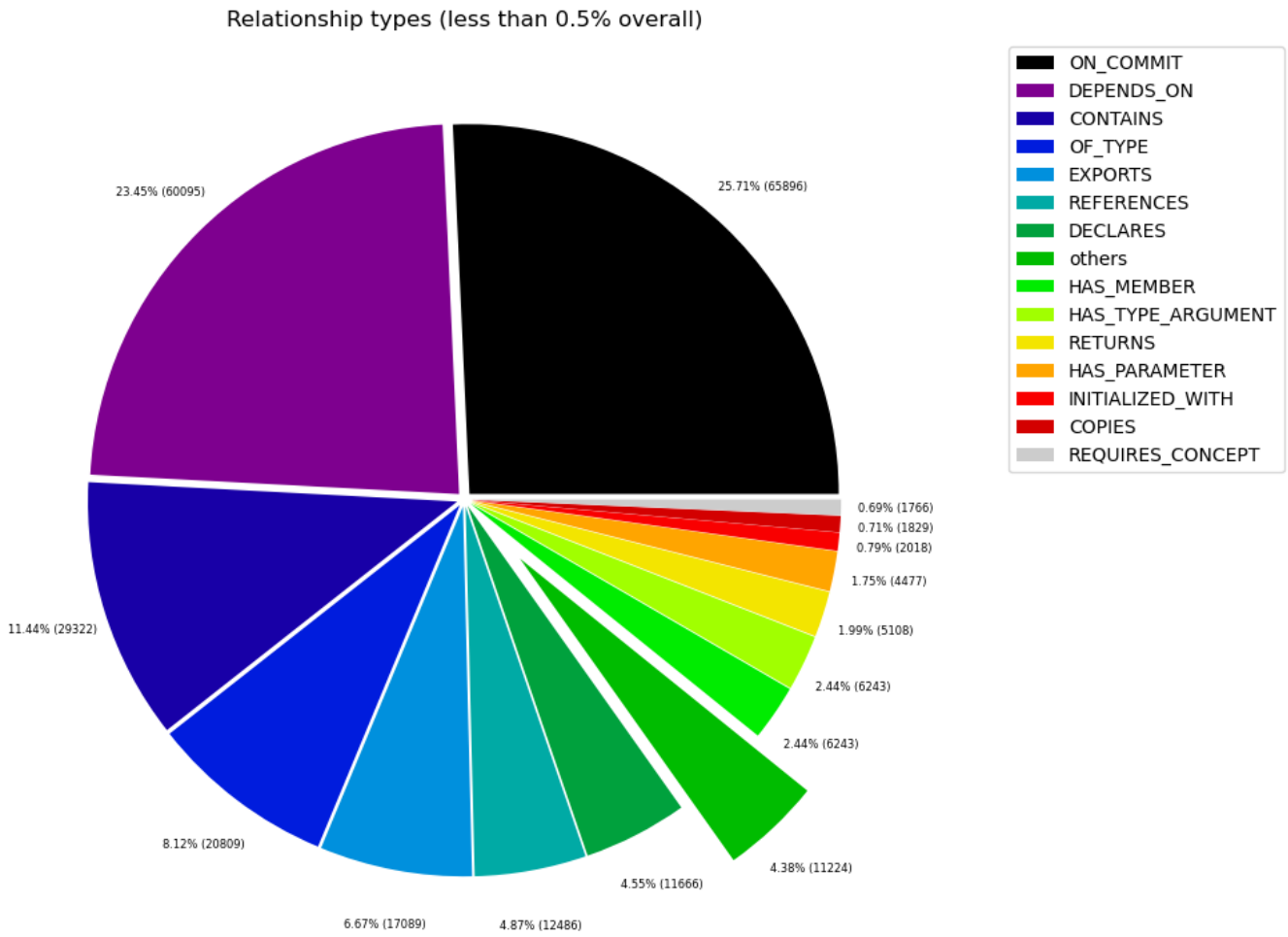
Lists the 30 relationships type with the lowest number of occurrences up to 0.5% of the total node count. This is essentially breaking down the "others" slice from the chart above.

	relationshipType	nodesWithThatRelationshipType	nodesWithThatRelationshipTypePercent
0	CONSTRAINED_BY	4	0.001561
1	REFERENCED_PROJECTS	5	0.001951
2	MEMBER	6	0.002341
3	HAS_ROOT	6	0.002341
4	HAS_CONFIG	6	0.002341
5	HAS_ARGUMENT	6	0.002341
6	CONTAINS_PROJECT	6	0.002341
7	CALLS	6	0.002341
8	PARENT	6	0.002341
9	EXTENDS	7	0.002731
10	SIMILAR	10	0.003902
11	INCLUDES_CONCEPT	19	0.007414
12	COPY_OF	21	0.008194
13	HAS_HEAD	22	0.008585
14	RESOLVES_TO	23	0.008975
15	USES	25	0.009755
16	REQUIRES_CONCEPT	28	0.010926
17	COPIES	29	0.011316
18	INITIALIZED_WITH	32	0.012487
19	HAS_PARAMETER	71	0.027705
20	RETURNS	81	0.031607
21	HAS_TYPE_ARGUMENT	99	0.038631
22	HAS_MEMBER	99	0.038631
23	DECLARES	185	0.072189
24	REFERENCES	198	0.077262
25	EXPORTS	271	0.105747
26	OF_TYPE	330	0.128770
27	CONTAINS	465	0.181449
28	DEPENDS_ON	953	0.371872
29	ON_COMMIT	1045	0.407771

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	numberOfNodesWithSam
0	[Git, Commit]	CONTAINS_CHANGE	[Git, Change]	71594	9827	
1	[Git, Change]	MODIFIES	[File, Git]	71594	71594	
2	[Git, Change]	UPDATES	[File, Git]	47761	71594	
3	[Git, Change]	CREATES	[File, Git]	16653	71594	
4	[Git, Commit]	HAS_PARENT	[Git, Commit]	10821	9827	
5	[Git, Change]	DELETES	[File, Git]	9884	71594	
6	[Author, Git, Person]	COMMITTED	[Git, Commit]	9827	1181	
7	[Committer, Git, Person]	COMMITTED	[Git, Commit]	9827	371	
8	[Git, Change]	RENAMES	[File, Git]	2704	71594	
9	[File, Git]	HAS_NEW_NAME	[File, Git]	1542	5042	
10	[Git, Tag]	ON_COMMIT	[Git, Commit]	1045	1045	
11	[TS, Function]	DEPENDS_ON	[TS, ExternalDeclaration]	280	47	
12	[TS, ExternalModule]	EXPORTS	[TS, ExternalDeclaration]	211	25	
13	[File, TS, Local, Module, Mark4ModuleWeaklyCon...	DEPENDS_ON	[TS, ExternalDeclaration]	188	3	
14	[Type, TS, Union, ExternalType]	CONTAINS	[Type, TS, Primitive, ExternalType]	149	120	
15	[Type, TS, Declared, ExternalType]	REFERENCES	[TS, ExternalDeclaration]	139	286	
16	[TS, Function]	DEPENDS_ON	[TS, ExternalModule]	129	47	
17	[Type, TS, Union, ExternalType]	CONTAINS	[Type, TS, Literal, ExternalType]	119	120	
18	[Type, TS, Object, ExternalType]	HAS_MEMBER	[Type, TS, ObjectMember, ExternalType]	98	38	
19	[Type, TS, Union, ExternalType]	CONTAINS	[Type, TS, Declared, ExternalType]	78	120	
20	[TS, Interface]	DECLARES	[TS, Property]	61	18	
21	[TS, Property]	OF_TYPE	[Type, TS, Union, ExternalType]	46	65	
22	[TS, Variable]	DEPENDS_ON	[TS, ExternalDeclaration]	44	24	
23	[Type, TS, Declared, ExternalType]	HAS_TYPE_ARGUMENT	[Type, TS, Declared, ExternalType]	43	286	
24	[Type, TS, Function, ExternalType]	HAS_PARAMETER	[Type, TS, FunctionParameter, ExternalType]	38	33	
25	[File, TS, Local, Module, Mark4ModuleWeaklyCon...	DECLARES	[TS, Function]	37	3	
26	[Type, TS, ObjectMember, ExternalType]	OF_TYPE	[Type, TS, Union, ExternalType]	35	98	
27	[TS, Function]	HAS_PARAMETER	[TS, Parameter]	33	47	
28	[Type, TS, ObjectMember, ExternalType]	OF_TYPE	[Type, TS, Primitive, ExternalType]	31	98	
29	[TS, Function]	DEPENDS_ON	[TS, Function]	30	47	

Graph Density

```
total_number_of_nodes (vertices): 90727
total_number_of_relationships (edges): 256271
-> total directed graph density: 3.113372959701841e-05
-> total directed graph density in percent: 0.003113372959701841
```