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: 90004
```

	nodeLabels	nodesWithThatLabels	nodesWithThatLabelsPercent
0	[Git, Change]	70917	78.793165
1	[Git, Commit]	9772	10.857295
2	[File, Git]	5030	5.588641
3	[Author, Git, Person]	1179	1.309942
4	[Git, Tag]	1026	1.139949
5	[Committer, Git, Person]	370	0.411093
6	[Type, TS, Primitive, ExternalType]	291	0.323319
7	[Type, TS, Declared, ExternalType]	286	0.317764
8	[TS, ExternalDeclaration]	211	0.234434
9	[Type, TS, Literal, ExternalType]	136	0.151104
10	[Type, TS, Union, ExternalType]	120	0.133327
11	[Type, TS, ObjectMember, ExternalType]	98	0.108884
12	[TS, Property]	65	0.072219
13	[TS, Function]	47	0.052220
14	[Type, TS, Object, ExternalType]	38	0.042220
15	[Type, TS, FunctionParameter, ExternalType]	38	0.042220
16	[TS, Parameter]	33	0.036665
17	[Type, TS, Function, ExternalType]	33	0.036665
18	[TS, ExternalModule]	25	0.027777
19	[File]	25	0.027777
20	[TS, Variable]	24	0.026665
21	[Git, Branch]	24	0.026665
22	[TS, Literal, Value]	20	0.022221
23	[jQAssistant, Rule, Concept]	19	0.021110
24	[TS, Interface]	18	0.019999
25	[Type, TS, Intersection, ExternalType]	17	0.018888
26	[File, Local, Directory]	16	0.017777
27	[File, Directory]	16	0.017777
28	[TS, TypeAlias]	14	0.015555
29	[TS, Declared, Value]	13	0.014444

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>
```

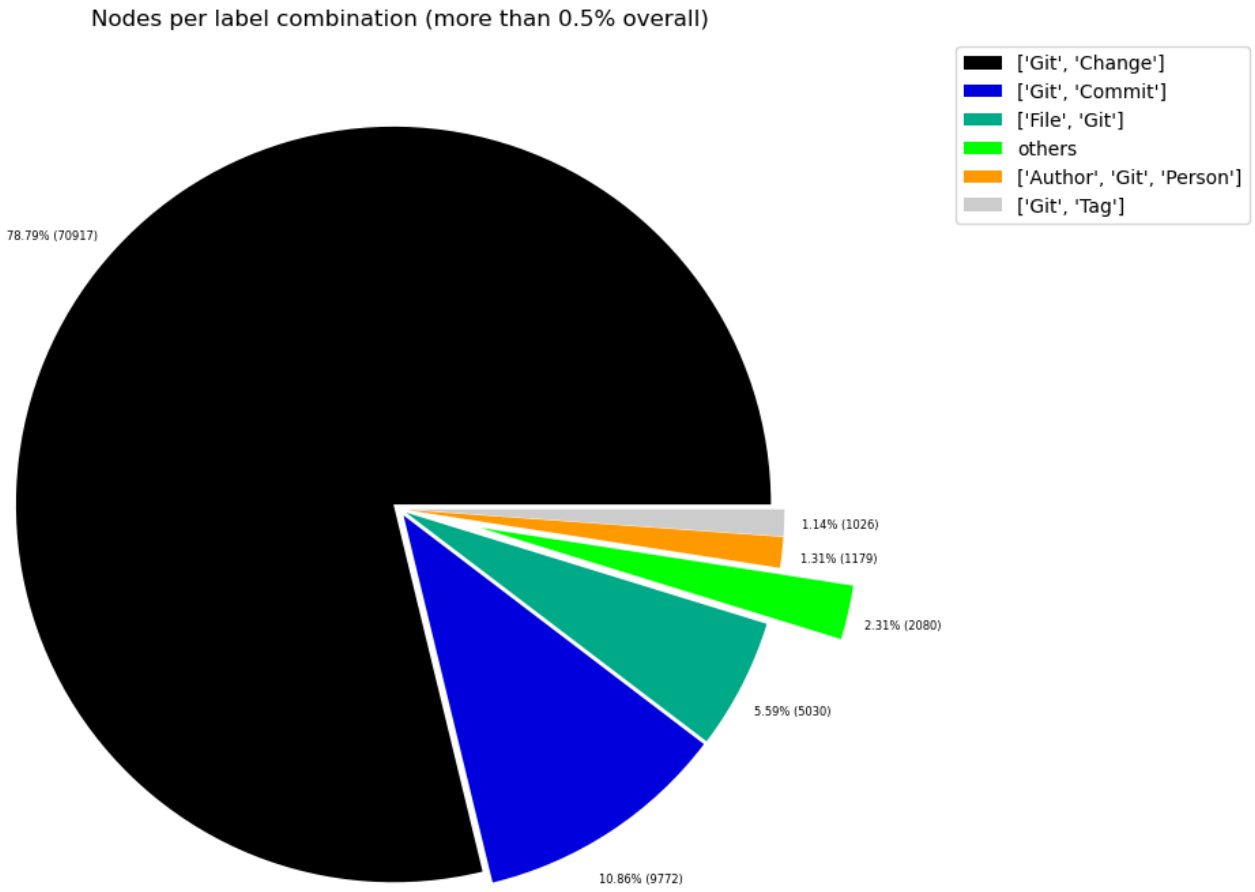


Table 1b - Lowest node count by label combination

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	0.001111
1	[File, TS, Scan]	1	0.001111
2	[TS, Class]	1	0.001111
3	[Repository, File, Git]	1	0.001111
4	[TS, Method]	1	0.001111
5	[TS, ObjectMember, Value]	1	0.001111
6	[TS, Constructor]	1	0.001111
7	[TS, Enum]	2	0.002222
8	[TS, Object, Value]	3	0.003333
9	[Type, TS, Tuple, ExternalType]	3	0.003333
10	[TS, Function, Value]	4	0.004444
11	[TS, TypeParameter]	4	0.004444
12	[TS, Value, Complex]	5	0.005555
13	[Project, TS]	6	0.006666
14	[File, Local]	6	0.006666
15	[Type, TS, TypeParameterReference, ExternalType]	6	0.006666
16	[TS, Value, Call]	6	0.006666
17	[File, TS, Local, Module]	6	0.006666
18	[TS, Value, Member]	6	0.006666
19	[TS, EnumMember]	8	0.008888
20	[Type, TS, NotIdentified, ExternalType]	11	0.012222
21	[TS, Declared, Value]	13	0.014444
22	[TS, TypeAlias]	14	0.015555
23	[File, Local, Directory]	16	0.017777
24	[File, Directory]	16	0.017777
25	[Type, TS, Intersection, ExternalType]	17	0.018888
26	[TS, Interface]	18	0.019999
27	[jQAssistant, Rule, Concept]	19	0.021110
28	[TS, Literal, Value]	20	0.022221
29	[Git, Branch]	24	0.026665

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>
```

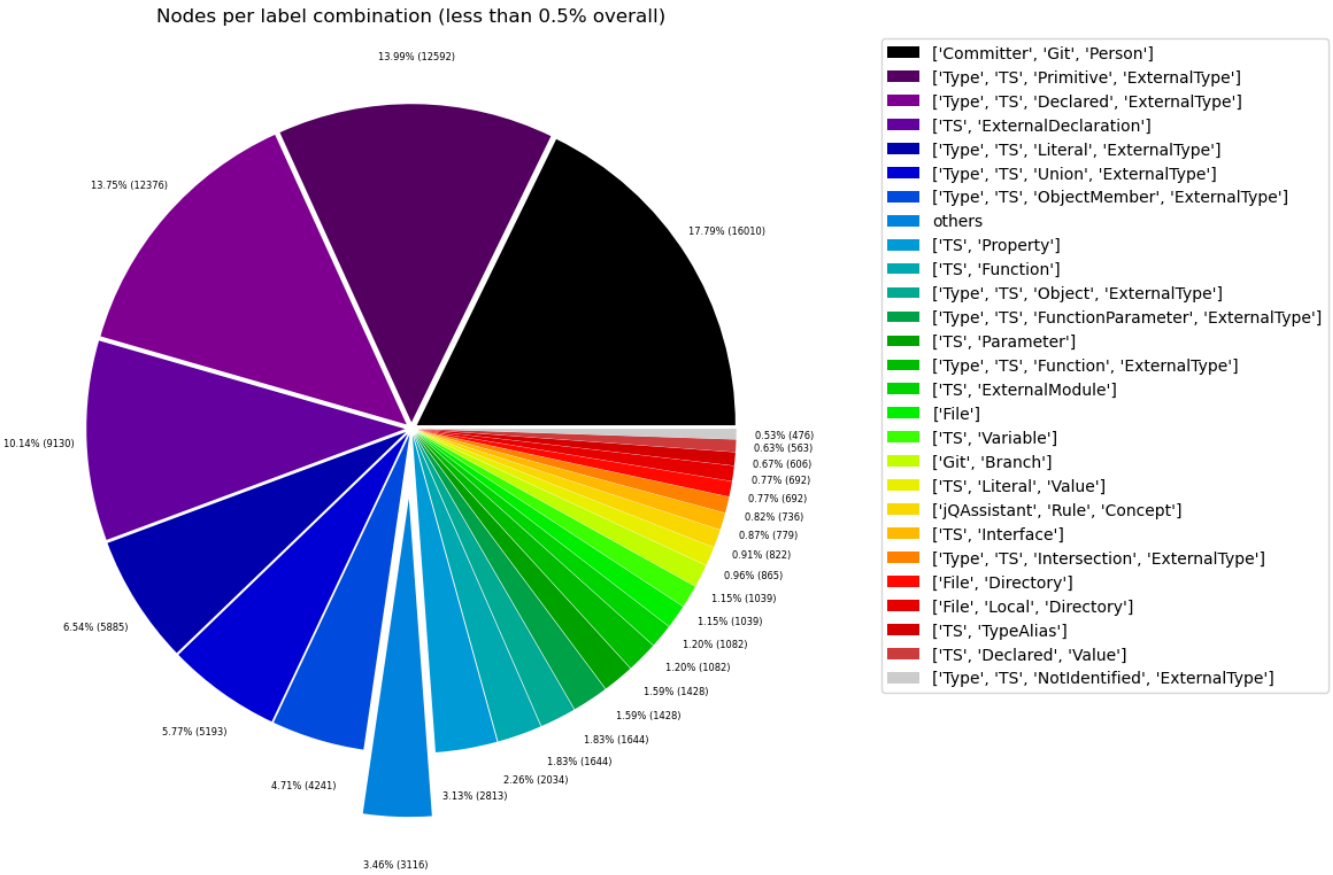


Table 1c - Highest node count by single label

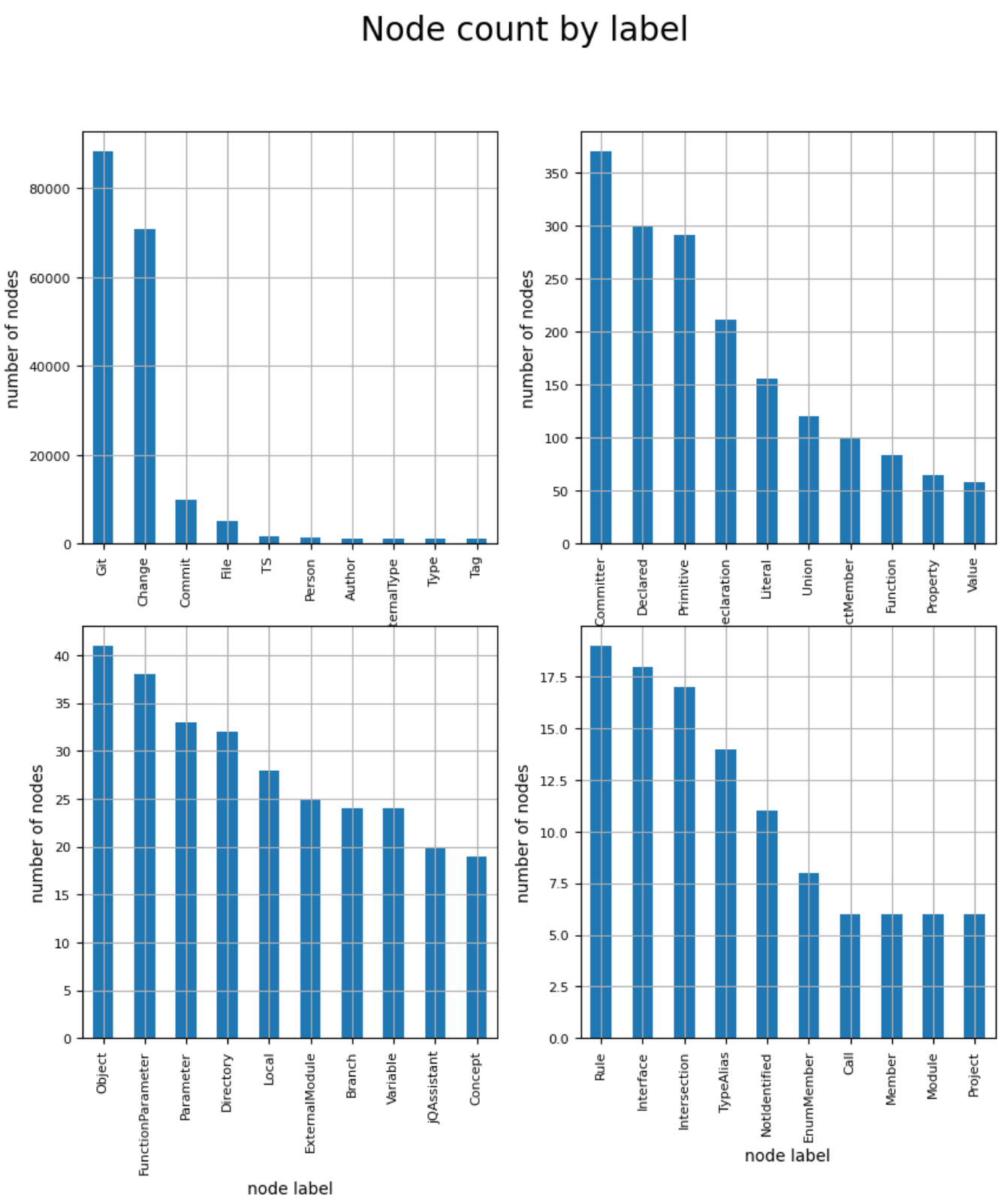
Lists the 40 labels with the highest number of nodes. Doesn't sum up to the total number of nodes or 100% because one node can have multiple labels. Helps to identify commonly used labels.

	nodeLabel	nodesWithThatLabel	nodesWithThatLabelPercent
0	Git	88319	98.127861
1	Change	70917	78.793165
2	Commit	9772	10.857295
3	File	5101	5.667526
4	TS	1602	1.779921
5	Person	1549	1.721035
6	Author	1179	1.309942
7	ExternalType	1077	1.196613
8	Type	1077	1.196613
9	Tag	1026	1.139949
10	Committer	370	0.411093
11	Declared	299	0.332207
12	Primitive	291	0.323319
13	ExternalDeclaration	211	0.234434
14	Literal	156	0.173326
15	Union	120	0.133327
16	ObjectMember	99	0.109995
17	Function	84	0.093329
18	Property	65	0.072219
19	Value	58	0.064442
20	Object	41	0.045554
21	FunctionParameter	38	0.042220
22	Parameter	33	0.036665
23	Directory	32	0.035554
24	Local	28	0.031110
25	ExternalModule	25	0.027777
26	Branch	24	0.026665
27	Variable	24	0.026665
28	jQAssistant	20	0.022221
29	Concept	19	0.021110
30	Rule	19	0.021110
31	Interface	18	0.019999
32	Intersection	17	0.018888
33	TypeAlias	14	0.015555
34	NotIdentified	11	0.012222
35	EnumMember	8	0.008888
36	Call	6	0.006666
37	Member	6	0.006666
38	Module	6	0.006666
39	Project	6	0.006666

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: 271494
```

	relationshipType	nodesWithThatRelationshipType	nodesWithThatRelationshipTypePercent
0	CONTAINS_CHANGE	70917	26.121019
1	MODIFIES	70917	26.121019
2	UPDATES	47187	17.380495
3	COMMITTED	19544	7.198686
4	CREATES	16561	6.099951
5	HAS_PARENT	10761	3.963624
6	DELETES	9856	3.630283
7	HAS_COMMIT	9772	3.599343
8	HAS_FILE	5030	1.852711
9	RENAMES	2687	0.989709
10	HAS_NEW_NAME	1540	0.567232
11	HAS_AUTHOR	1179	0.434264
12	HAS_TAG	1026	0.377909
13	ON_COMMIT	1026	0.377909
14	DEPENDS_ON	953	0.351021
15	CONTAINS	536	0.197426
16	HAS_COMMITTER	370	0.136283
17	OF_TYPE	330	0.121550
18	EXPORTS	271	0.099818
19	REFERENCES	198	0.072930
20	DECLARES	185	0.068141
21	HAS_MEMBER	99	0.036465
22	HAS_TYPE_ARGUMENT	99	0.036465
23	RETURNS	81	0.029835
24	HAS_PARAMETER	71	0.026152
25	INITIALIZED_WITH	32	0.011787
26	COPIES	29	0.010682
27	REQUIRES_CONCEPT	28	0.010313
28	RESOLVES_TO	27	0.009945
29	HAS_HEAD	25	0.009208

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>
```

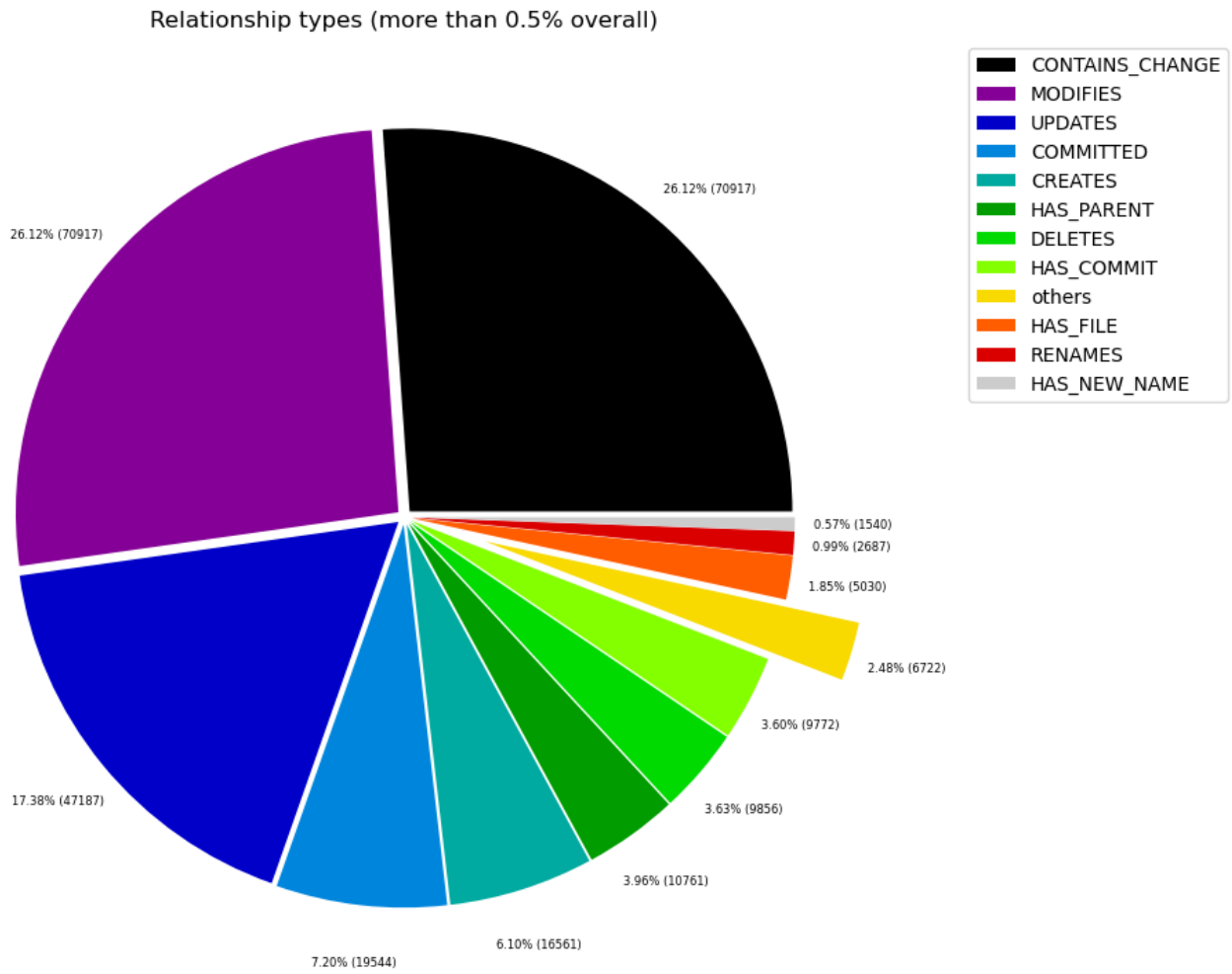


Table 2b - Lowest relationship count by type

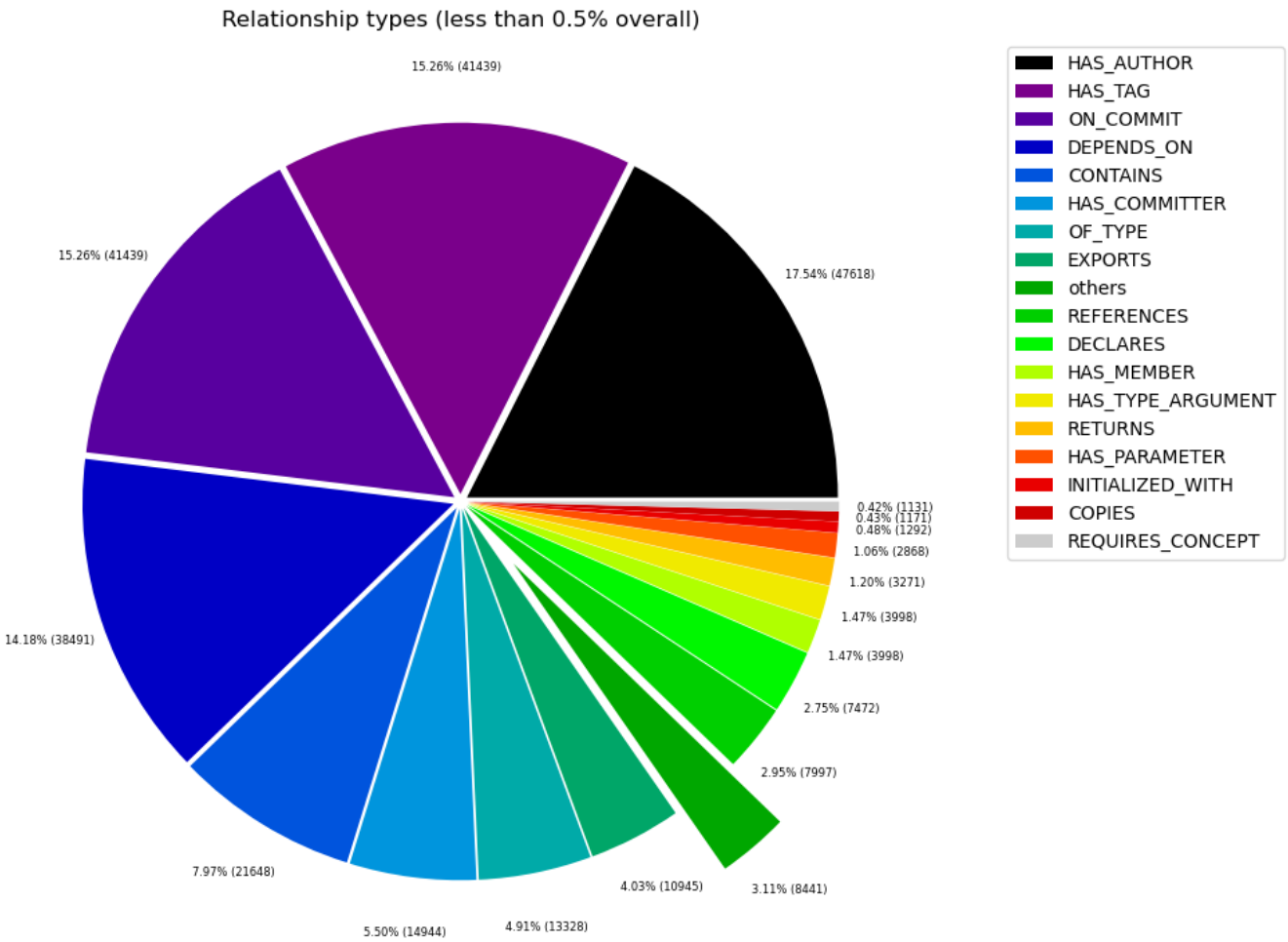
Lists the 30 relationships type with the lowest number of occurrences up to 0.5% of the total node count. This is essentially breaking down the "others" slice from the chart above.

	relationshipType	nodesWithThatRelationshipType	nodesWithThatRelationshipTypePercent
0	CONSTRAINED_BY	4	0.001473
1	REFERENCED_PROJECTS	5	0.001842
2	MEMBER	6	0.002210
3	HAS_ROOT	6	0.002210
4	HAS_CONFIG	6	0.002210
5	HAS_ARGUMENT	6	0.002210
6	CONTAINS_PROJECT	6	0.002210
7	CALLS	6	0.002210
8	PARENT	6	0.002210
9	EXTENDS	7	0.002578
10	SIMILAR	10	0.003683
11	INCLUDES_CONCEPT	19	0.006998
12	COPY_OF	21	0.007735
13	HAS_BRANCH	24	0.008840
14	USES	25	0.009208
15	HAS_HEAD	25	0.009208
16	RESOLVES_TO	27	0.009945
17	REQUIRES_CONCEPT	28	0.010313
18	COPIES	29	0.010682
19	INITIALIZED_WITH	32	0.011787
20	HAS_PARAMETER	71	0.026152
21	RETURNS	81	0.029835
22	HAS_TYPE_ARGUMENT	99	0.036465
23	HAS_MEMBER	99	0.036465
24	DECLARES	185	0.068141
25	REFERENCES	198	0.072930
26	EXPORTS	271	0.099818
27	OF_TYPE	330	0.121550
28	HAS_COMMITTER	370	0.136283
29	CONTAINS	536	0.197426

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]	70917	9772	
1	[Git, Change]	MODIFIES	[File, Git]	70917	70917	
2	[Git, Change]	UPDATES	[File, Git]	47187	70917	
3	[Git, Change]	CREATES	[File, Git]	16561	70917	
4	[Git, Commit]	HAS_PARENT	[Git, Commit]	10761	9772	
5	[Git, Change]	DELETES	[File, Git]	9856	70917	
6	[Repository, File, Git]	HAS_COMMIT	[Git, Commit]	9772	1	
7	[Author, Git, Person]	COMMITTED	[Git, Commit]	9772	1179	
8	[Committer, Git, Person]	COMMITTED	[Git, Commit]	9772	370	
9	[Repository, File, Git]	HAS_FILE	[File, Git]	5030	1	
10	[Git, Change]	RENAMES	[File, Git]	2687	70917	
11	[File, Git]	HAS_NEW_NAME	[File, Git]	1540	5030	
12	[Repository, File, Git]	HAS_AUTHOR	[Author, Git, Person]	1179	1	
13	[Repository, File, Git]	HAS_TAG	[Git, Tag]	1026	1	
14	[Git, Tag]	ON_COMMIT	[Git, Commit]	1026	1026	
15	[Repository, File, Git]	HAS_COMMITTER	[Committer, Git, Person]	370	1	
16	[TS, Function]	DEPENDS_ON	[TS, ExternalDeclaration]	280	47	
17	[TS, ExternalModule]	EXPORTS	[TS, ExternalDeclaration]	211	25	
18	[Type, TS, Union, ExternalType]	CONTAINS	[Type, TS, Primitive, ExternalType]	149	120	
19	[File, TS, Local, Module, Mark4ModuleWeaklyCon...	DEPENDS_ON	[TS, ExternalDeclaration]	148	1	
20	[Type, TS, Declared, ExternalType]	REFERENCES	[TS, ExternalDeclaration]	139	286	
21	[TS, Function]	DEPENDS_ON	[TS, ExternalModule]	129	47	
22	[Type, TS, Union, ExternalType]	CONTAINS	[Type, TS, Literal, ExternalType]	119	120	
23	[Type, TS, Object, ExternalType]	HAS_MEMBER	[Type, TS, ObjectMember, ExternalType]	98	38	
24	[Type, TS, Union, ExternalType]	CONTAINS	[Type, TS, Declared, ExternalType]	78	120	
25	[TS, Interface]	DECLARES	[TS, Property]	61	18	
26	[TS, Property]	OF_TYPE	[Type, TS, Union, ExternalType]	46	65	
27	[File, Directory]	CONTAINS	[File]	46	16	
28	[TS, Variable]	DEPENDS_ON	[TS, ExternalDeclaration]	44	24	
29	[Type, TS, Declared, ExternalType]	HAS_TYPE_ARGUMENT	[Type, TS, Declared, ExternalType]	43	286	

Graph Density

```
total_number_of_nodes (vertices): 90004
total_number_of_relationships (edges): 271494
-> total directed graph density: 3.351517099260403e-05
-> total directed graph density in percent: 0.003351517099260403
```