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: 89929
```

	nodeLabels	nodesWithThatLabels	nodesWithThatLabelsPercent
0	[Git, Change]	70843	78.776590
1	[Git, Commit]	9771	10.865238
2	[File, Git]	5030	5.593301
3	[Author, Git, Person]	1179	1.311034
4	[Git, Tag]	1026	1.140900
5	[Committer, Git, Person]	370	0.411436
6	[Type, TS, Primitive, ExternalType]	291	0.323589
7	[Type, TS, Declared, ExternalType]	286	0.318029
8	[TS, ExternalDeclaration]	211	0.234630
9	[Type, TS, Literal, ExternalType]	136	0.151230
10	[Type, TS, Union, ExternalType]	120	0.133439
11	[Type, TS, ObjectMember, ExternalType]	98	0.108975
12	[TS, Property]	65	0.072279
13	[TS, Function]	47	0.052263
14	[Type, TS, Object, ExternalType]	38	0.042256
15	[Type, TS, FunctionParameter, ExternalType]	38	0.042256
16	[TS, Parameter]	33	0.036696
17	[Type, TS, Function, ExternalType]	33	0.036696
18	[TS, ExternalModule]	25	0.027800
19	[File]	25	0.027800
20	[TS, Variable]	24	0.026688
21	[Git, Branch]	24	0.026688
22	[TS, Literal, Value]	20	0.022240
23	[jQAssistant, Rule, Concept]	19	0.021128
24	[TS, Interface]	18	0.020016
25	[Type, TS, Intersection, ExternalType]	17	0.018904
26	[File, Local, Directory]	16	0.017792
27	[File, Directory]	16	0.017792
28	[TS, TypeAlias]	14	0.015568
29	[TS, Declared, Value]	13	0.014456

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>
```

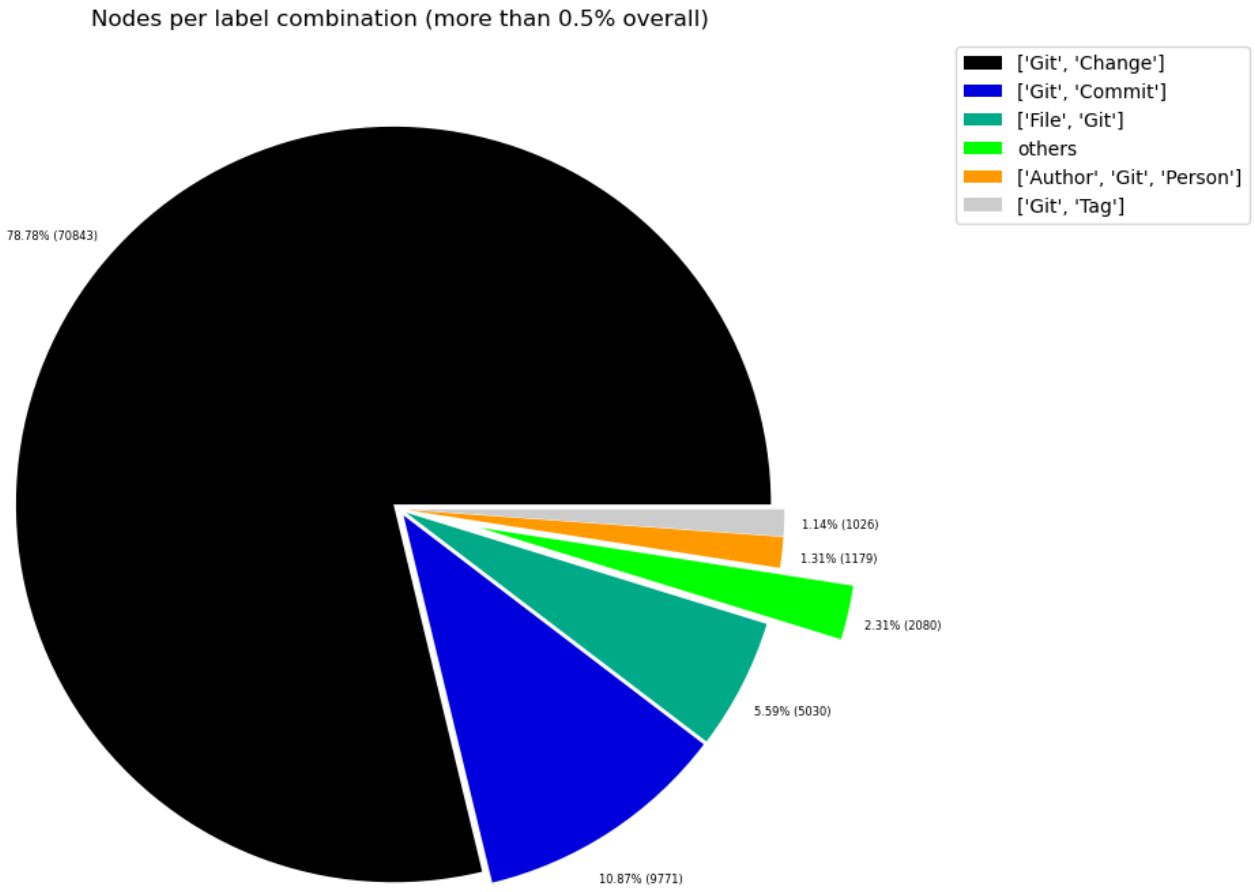


Table 1b - Lowest node count by label combination

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	0.001112
1	[File, TS, Scan]	1	0.001112
2	[TS, Class]	1	0.001112
3	[Repository, File, Git]	1	0.001112
4	[TS, Method]	1	0.001112
5	[TS, ObjectMember, Value]	1	0.001112
6	[TS, Constructor]	1	0.001112
7	[TS, Enum]	2	0.002224
8	[TS, Object, Value]	3	0.003336
9	[Type, TS, Tuple, ExternalType]	3	0.003336
10	[TS, Function, Value]	4	0.004448
11	[TS, TypeParameter]	4	0.004448
12	[TS, Value, Complex]	5	0.005560
13	[Project, TS]	6	0.006672
14	[File, Local]	6	0.006672
15	[Type, TS, TypeParameterReference, ExternalType]	6	0.006672
16	[TS, Value, Call]	6	0.006672
17	[File, TS, Local, Module]	6	0.006672
18	[TS, Value, Member]	6	0.006672
19	[TS, EnumMember]	8	0.008896
20	[Type, TS, NotIdentified, ExternalType]	11	0.012232
21	[TS, Declared, Value]	13	0.014456
22	[TS, TypeAlias]	14	0.015568
23	[File, Local, Directory]	16	0.017792
24	[File, Directory]	16	0.017792
25	[Type, TS, Intersection, ExternalType]	17	0.018904
26	[TS, Interface]	18	0.020016
27	[jQAssistant, Rule, Concept]	19	0.021128
28	[TS, Literal, Value]	20	0.022240
29	[Git, Branch]	24	0.026688

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>
```

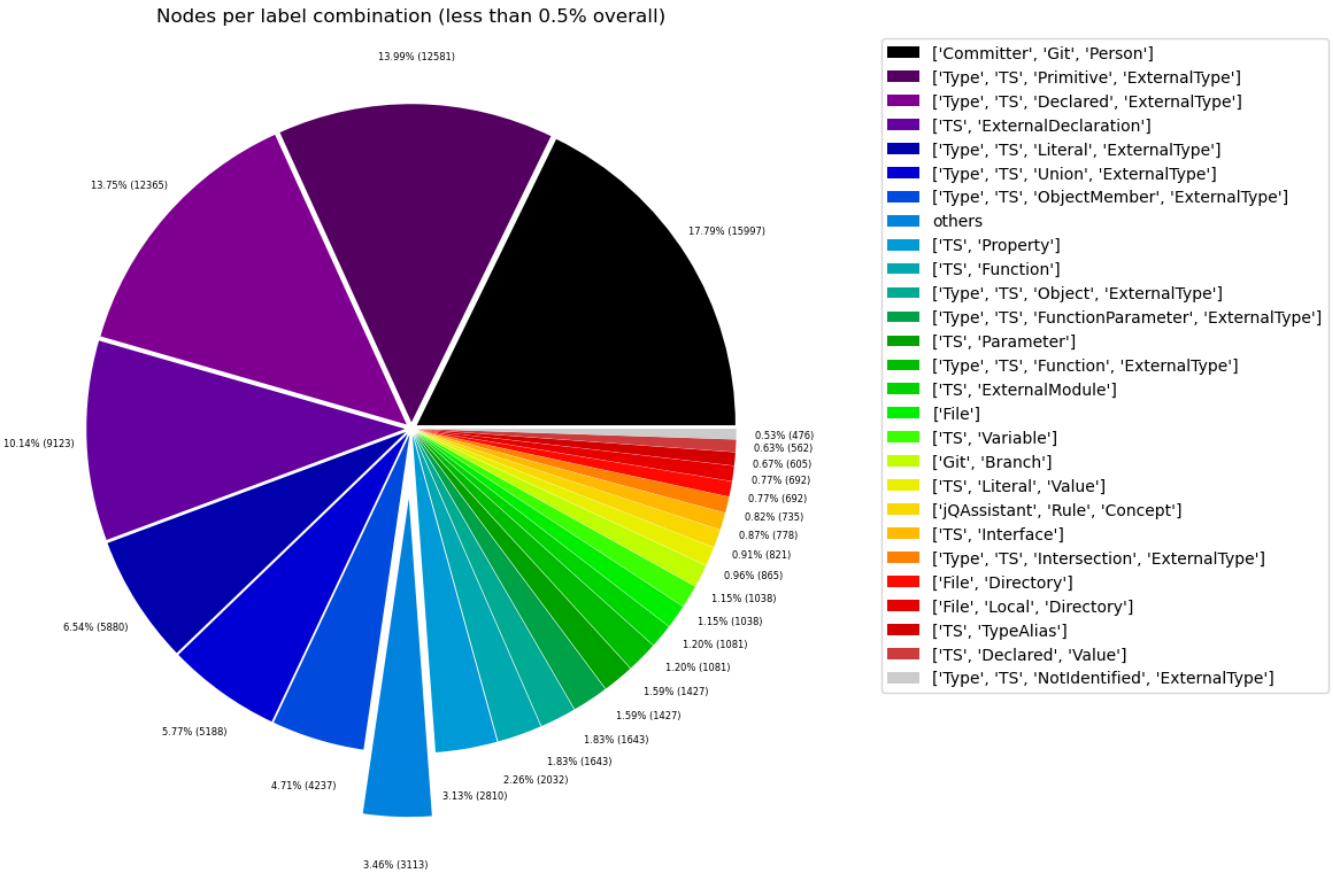


Table 1c - Highest node count by single label

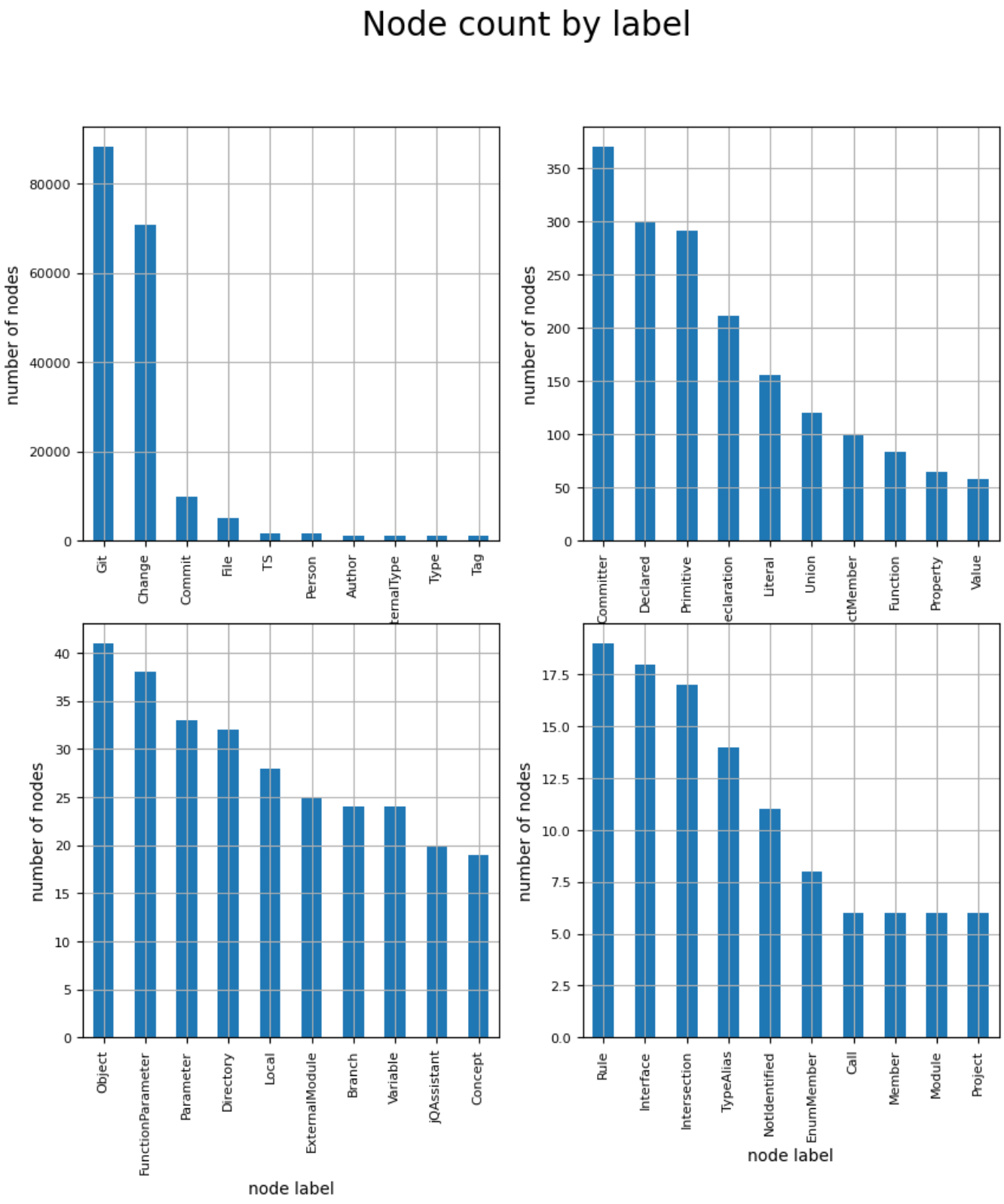
Lists the 40 labels with the highest number of nodes. Doesn't sum up to the total number of nodes or 100% because one node can have multiple labels. Helps to identify commonly used labels.

	nodeLabel	nodesWithThatLabel	nodesWithThatLabelPercent
0	Git	88244	98.126300
1	Change	70843	78.776590
2	Commit	9771	10.865238
3	File	5101	5.672253
4	TS	1602	1.781405
5	Person	1549	1.722470
6	Author	1179	1.311034
7	ExternalType	1077	1.197611
8	Type	1077	1.197611
9	Tag	1026	1.140900
10	Committer	370	0.411436
11	Declared	299	0.332485
12	Primitive	291	0.323589
13	ExternalDeclaration	211	0.234630
14	Literal	156	0.173470
15	Union	120	0.133439
16	ObjectMember	99	0.110087
17	Function	84	0.093407
18	Property	65	0.072279
19	Value	58	0.064495
20	Object	41	0.045592
21	FunctionParameter	38	0.042256
22	Parameter	33	0.036696
23	Directory	32	0.035584
24	Local	28	0.031136
25	ExternalModule	25	0.027800
26	Branch	24	0.026688
27	Variable	24	0.026688
28	jQAssistant	20	0.022240
29	Concept	19	0.021128
30	Rule	19	0.021128
31	Interface	18	0.020016
32	Intersection	17	0.018904
33	TypeAlias	14	0.015568
34	NotIdentified	11	0.012232
35	EnumMember	8	0.008896
36	Call	6	0.006672
37	Member	6	0.006672
38	Module	6	0.006672
39	Project	6	0.006672

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: 271259
```

	relationshipType	nodesWithThatRelationshipType	nodesWithThatRelationshipTypePercent
0	CONTAINS_CHANGE	70843	26.116368
1	MODIFIES	70843	26.116368
2	UPDATES	47138	17.377488
3	COMMITTED	19542	7.204185
4	CREATES	16540	6.097494
5	HAS_PARENT	10759	3.966320
6	DELETES	9848	3.630479
7	HAS_COMMIT	9771	3.602092
8	HAS_FILE	5030	1.854316
9	RENAMES	2683	0.989092
10	HAS_NEW_NAME	1540	0.567723
11	HAS_AUTHOR	1179	0.434640
12	HAS_TAG	1026	0.378236
13	ON_COMMIT	1026	0.378236
14	DEPENDS_ON	953	0.351325
15	CONTAINS	536	0.197597
16	HAS_COMMITTER	370	0.136401
17	OF_TYPE	330	0.121655
18	EXPORTS	271	0.099905
19	REFERENCES	198	0.072993
20	DECLARES	185	0.068201
21	HAS_MEMBER	99	0.036496
22	HAS_TYPE_ARGUMENT	99	0.036496
23	RETURNS	81	0.029861
24	HAS_PARAMETER	71	0.026174
25	INITIALIZED_WITH	32	0.011797
26	COPIES	29	0.010691
27	REQUIRES_CONCEPT	28	0.010322
28	RESOLVES_TO	27	0.009954
29	HAS_HEAD	25	0.009216

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>
```

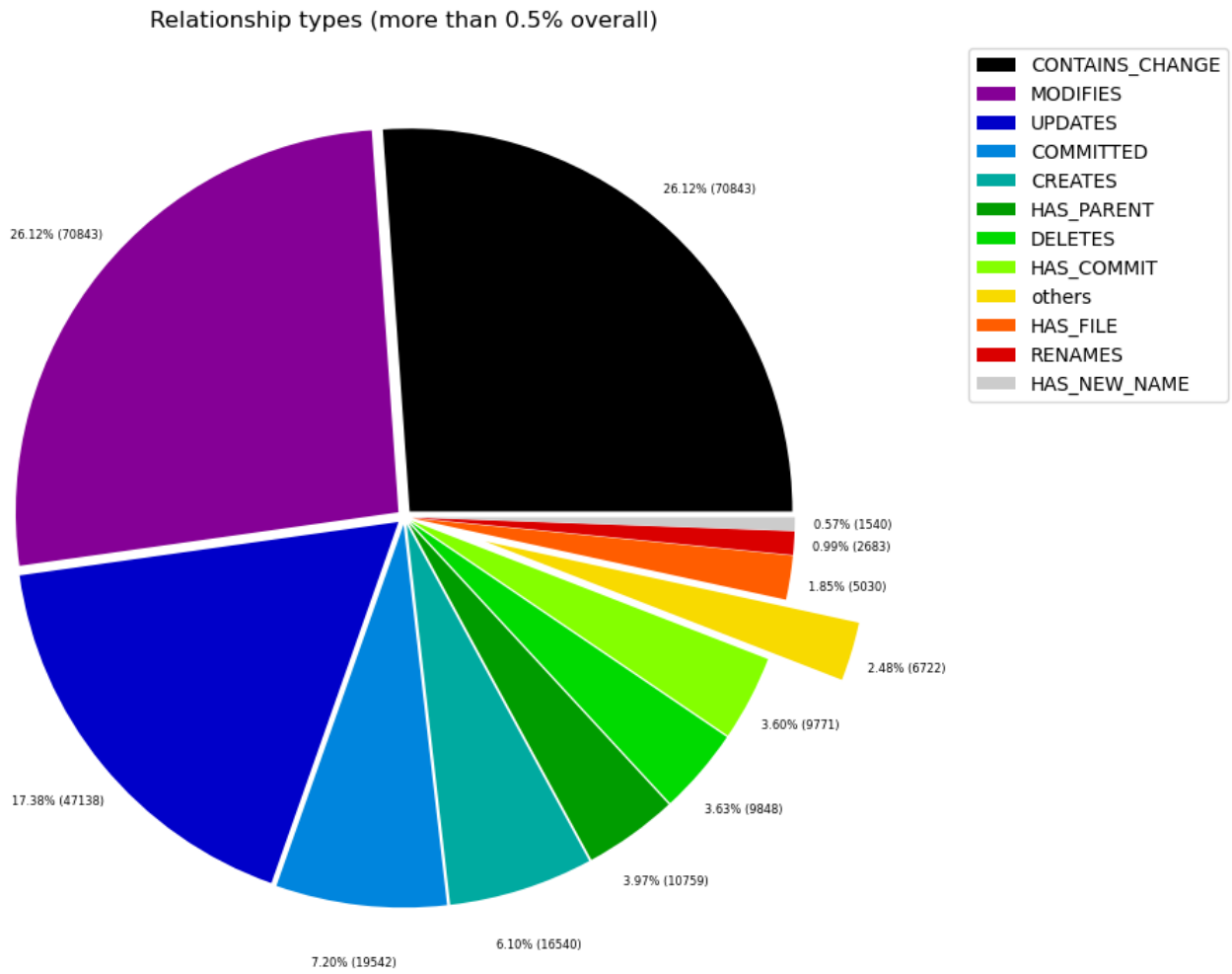


Table 2b - Lowest relationship count by type

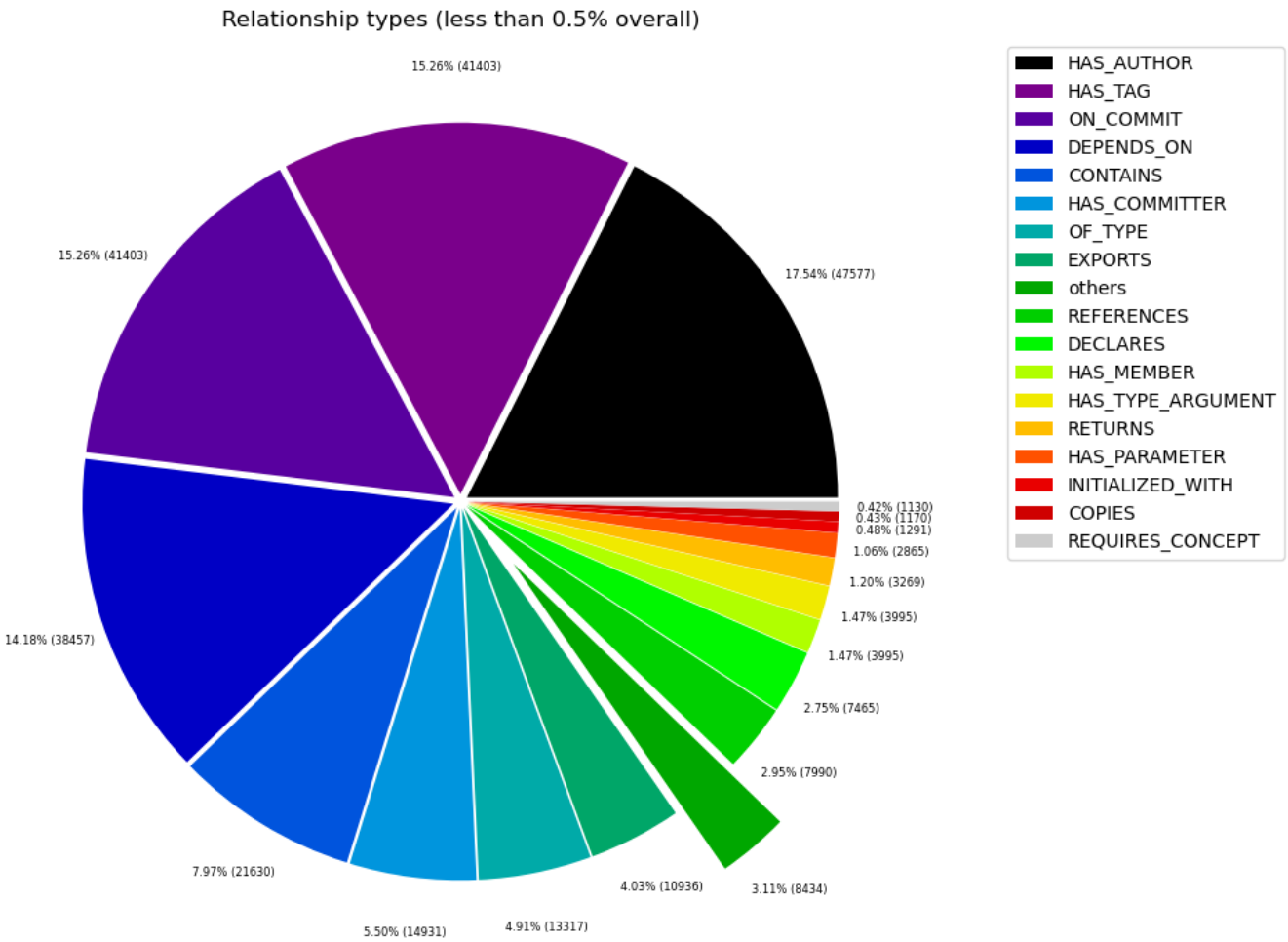
Lists the 30 relationships type with the lowest number of occurrences up to 0.5% of the total node count. This is essentially breaking down the "others" slice from the chart above.

	relationshipType	nodesWithThatRelationshipType	nodesWithThatRelationshipTypePercent
0	CONSTRAINED_BY	4	0.001475
1	REFERENCED_PROJECTS	5	0.001843
2	MEMBER	6	0.002212
3	HAS_ROOT	6	0.002212
4	HAS_CONFIG	6	0.002212
5	HAS_ARGUMENT	6	0.002212
6	CONTAINS_PROJECT	6	0.002212
7	CALLS	6	0.002212
8	PARENT	6	0.002212
9	EXTENDS	7	0.002581
10	SIMILAR	10	0.003687
11	INCLUDES_CONCEPT	19	0.007004
12	COPY_OF	21	0.007742
13	HAS_BRANCH	24	0.008848
14	USES	25	0.009216
15	HAS_HEAD	25	0.009216
16	RESOLVES_TO	27	0.009954
17	REQUIRES_CONCEPT	28	0.010322
18	COPIES	29	0.010691
19	INITIALIZED_WITH	32	0.011797
20	HAS_PARAMETER	71	0.026174
21	RETURNS	81	0.029861
22	HAS_TYPE_ARGUMENT	99	0.036496
23	HAS_MEMBER	99	0.036496
24	DECLARES	185	0.068201
25	REFERENCES	198	0.072993
26	EXPORTS	271	0.099905
27	OF_TYPE	330	0.121655
28	HAS_COMMITTER	370	0.136401
29	CONTAINS	536	0.197597

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]	70843	9771	
1	[Git, Change]	MODIFIES	[File, Git]	70843	70843	
2	[Git, Change]	UPDATES	[File, Git]	47138	70843	
3	[Git, Change]	CREATES	[File, Git]	16540	70843	
4	[Git, Commit]	HAS_PARENT	[Git, Commit]	10759	9771	
5	[Git, Change]	DELETES	[File, Git]	9848	70843	
6	[Repository, File, Git]	HAS_COMMIT	[Git, Commit]	9771	1	
7	[Author, Git, Person]	COMMITTED	[Git, Commit]	9771	1179	
8	[Committer, Git, Person]	COMMITTED	[Git, Commit]	9771	370	
9	[Repository, File, Git]	HAS_FILE	[File, Git]	5030	1	
10	[Git, Change]	RENAMES	[File, Git]	2683	70843	
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): 89929
total_number_of_relationships (edges): 271259
-> total directed graph density: 3.354203883616283e-05
-> total directed graph density in percent: 0.0033542038836162826
```