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: 11822
```

	nodeLabels	nodesWithThatLabels	nodesWithThatLabelsPercent
0	[Git, Commit, Log]	5646	47.758417
1	[File, Git, Log]	3534	29.893419
2	[Git, Author, Log]	994	8.408053
3	[Type, TS, Primitive, ExternalType]	291	2.461512
4	[Type, TS, Declared, ExternalType]	286	2.419218
5	[TS, ExternalDeclaration]	211	1.784808
6	[Type, TS, Literal, ExternalType]	136	1.150398
7	[Type, TS, Union, ExternalType]	120	1.015057
8	[Type, TS, ObjectMember, ExternalType]	98	0.828963
9	[TS, Property]	65	0.549822
10	[TS, Function]	47	0.397564
11	[Type, TS, Object, ExternalType]	38	0.321435
12	[Type, TS, FunctionParameter, ExternalType]	38	0.321435
13	[TS, Parameter]	33	0.279141
14	[Type, TS, Function, ExternalType]	33	0.279141
15	[TS, ExternalModule]	25	0.211470
16	[TS, Variable]	24	0.203011
17	[TS, Literal, Value]	20	0.169176
18	[jQAssistant, Rule, Concept]	19	0.160717
19	[TS, Interface]	18	0.152259
20	[Type, TS, Intersection, ExternalType]	17	0.143800
21	[File, Directory, Local]	16	0.135341
22	[TS, TypeAlias]	14	0.118423
23	[TS, Declared, Value]	13	0.109964
24	[Type, TS, NotIdentified, ExternalType]	11	0.093047
25	[TS, EnumMember]	8	0.067670
26	[Project, TS]	6	0.050753
27	[File, Local]	6	0.050753
28	[File, TS, Local, Module]	6	0.050753
29	[Type, TS, TypeParameterReference, ExternalType]	6	0.050753

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>
```

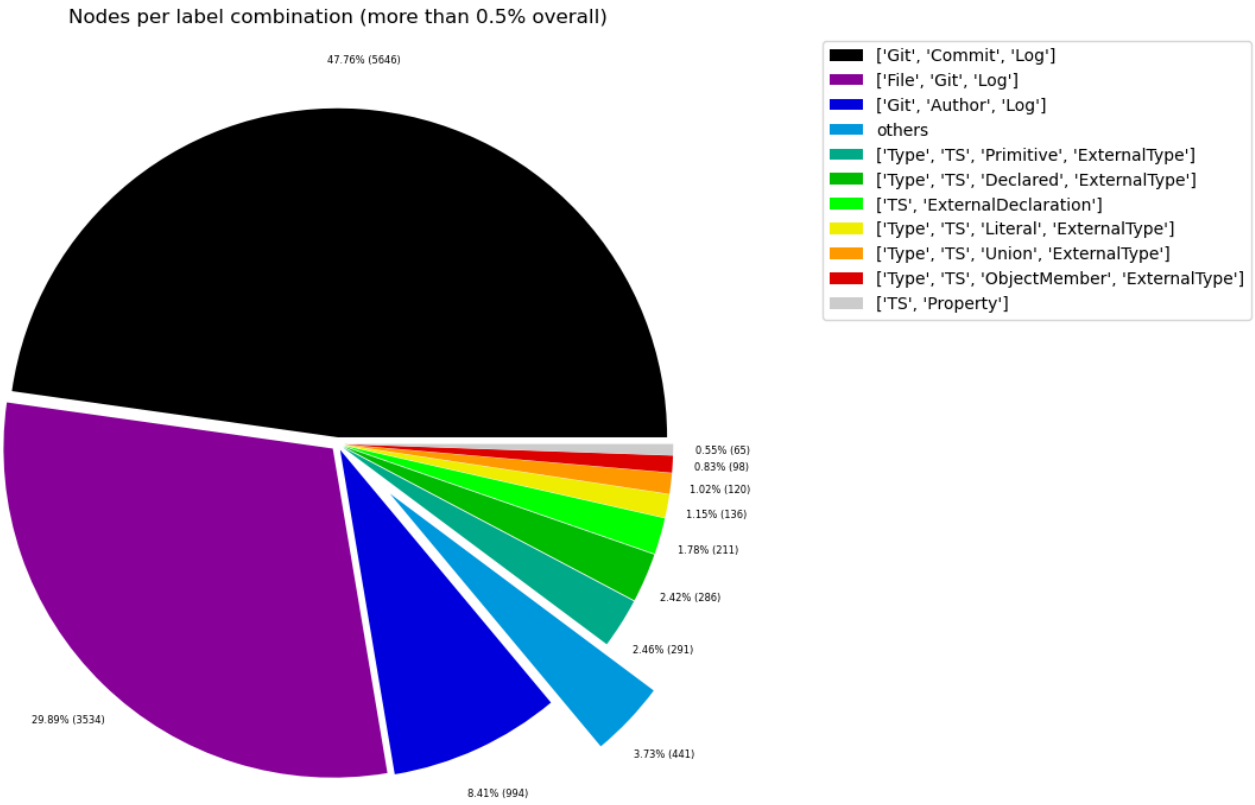


Table 1b - Lowest node count by label combination

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	[Repository, Git]	1	0.008459
1	[File]	1	0.008459
2	[File, TS, Scan]	1	0.008459
3	[TS, Class]	1	0.008459
4	[Analyze, Task, jQAssistant]	1	0.008459
5	[TS, Method]	1	0.008459
6	[TS, ObjectMember, Value]	1	0.008459
7	[TS, Constructor]	1	0.008459
8	[TS, Enum]	2	0.016918
9	[File, Directory]	2	0.016918
10	[TS, Object, Value]	3	0.025376
11	[Type, TS, Tuple, ExternalType]	3	0.025376
12	[TS, Function, Value]	4	0.033835
13	[TS, TypeParameter]	4	0.033835
14	[TS, Value, Complex]	5	0.042294
15	[TS, Value, Member]	6	0.050753
16	[TS, Value, Call]	6	0.050753
17	[Type, TS, TypeParameterReference, ExternalType]	6	0.050753
18	[File, TS, Local, Module]	6	0.050753
19	[File, Local]	6	0.050753
20	[Project, TS]	6	0.050753
21	[TS, EnumMember]	8	0.067670
22	[Type, TS, NotIdentified, ExternalType]	11	0.093047
23	[TS, Declared, Value]	13	0.109964
24	[TS, TypeAlias]	14	0.118423
25	[File, Directory, Local]	16	0.135341
26	[Type, TS, Intersection, ExternalType]	17	0.143800
27	[TS, Interface]	18	0.152259
28	[jQAssistant, Rule, Concept]	19	0.160717
29	[TS, Literal, Value]	20	0.169176

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>
```

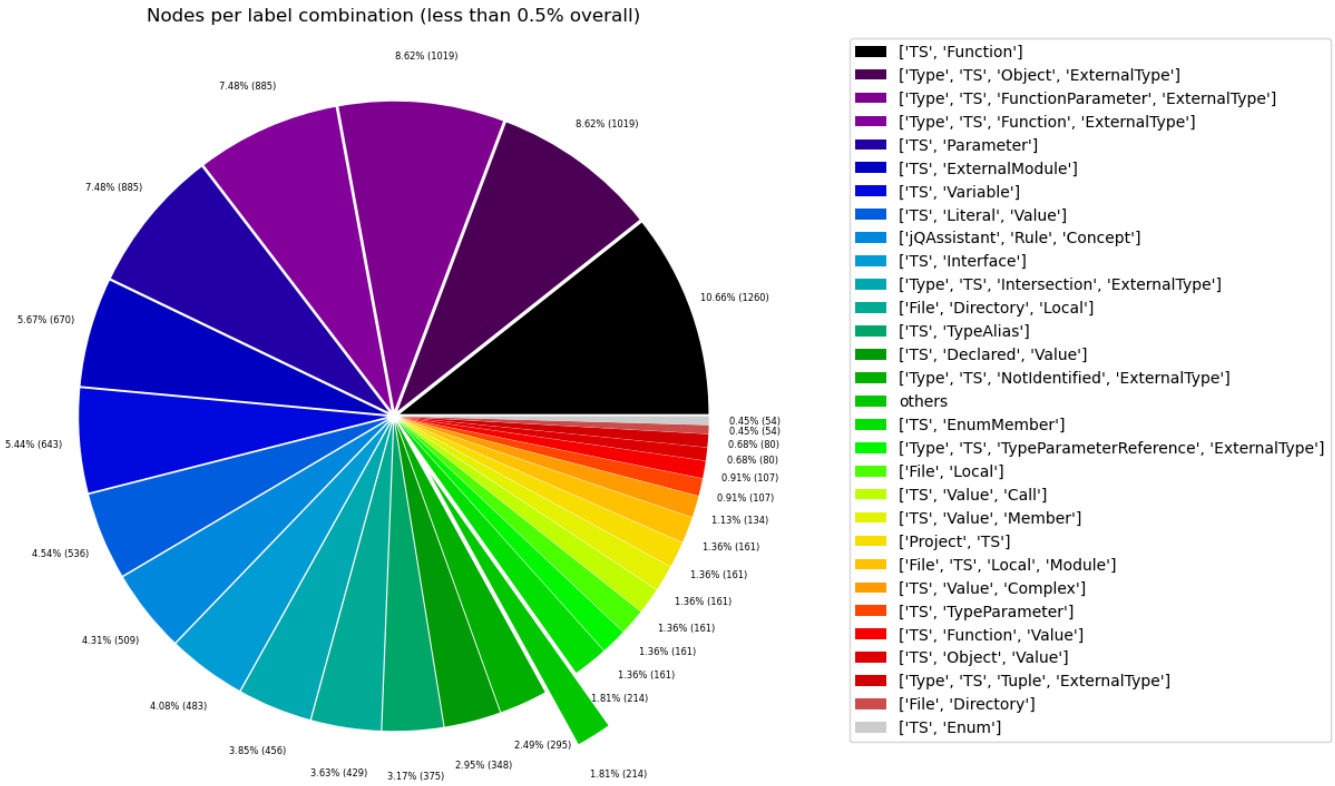


Table 1c - Highest node count by single label

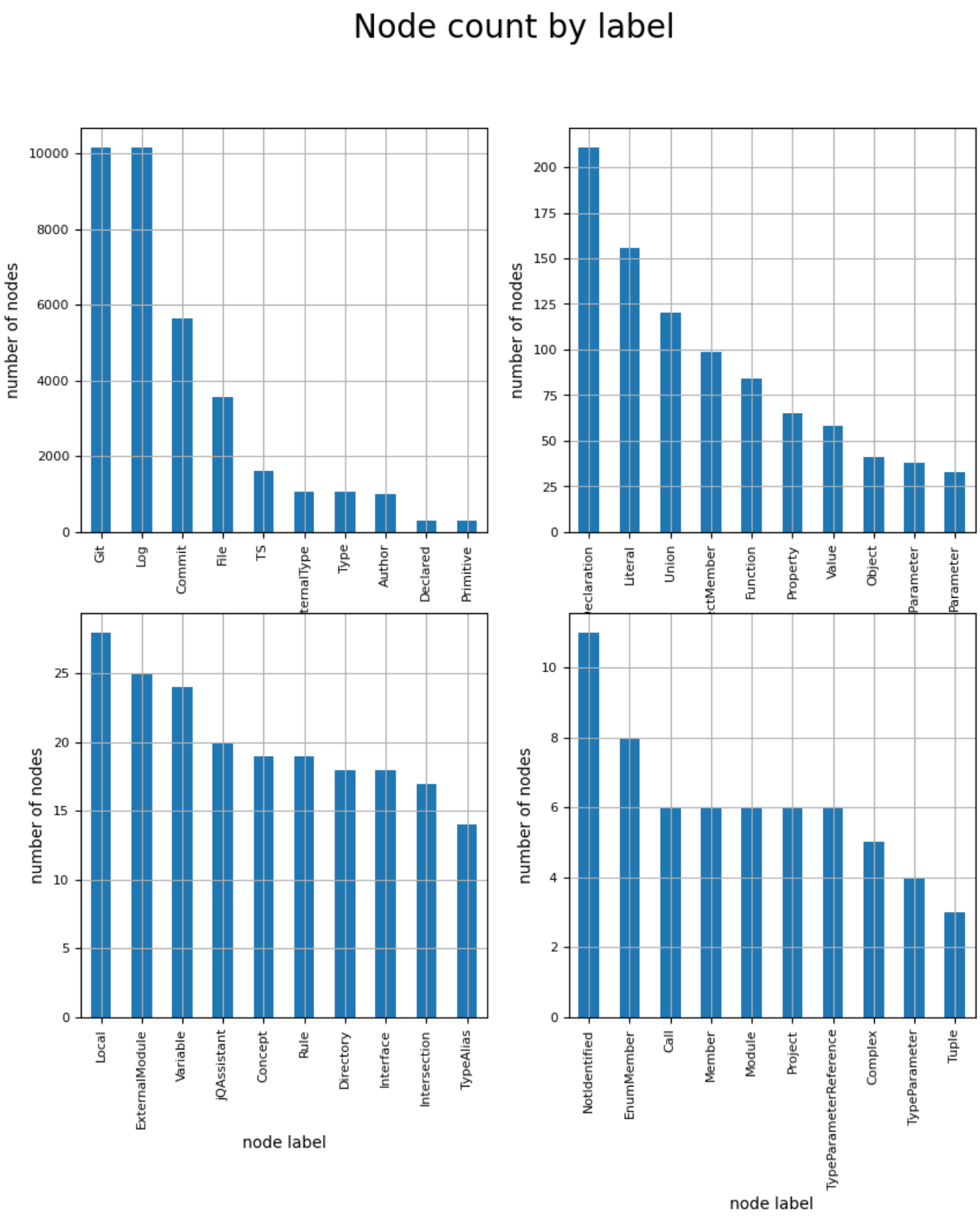
Lists the 40 labels with the highest number of nodes. Doesn't sum up to the total number of nodes or 100% because one node can have multiple labels. Helps to identify commonly used labels.

	nodeLabel	nodesWithThatLabel	nodesWithThatLabelPercent
0	Git	10175	86.068347
1	Log	10174	86.059888
2	Commit	5646	47.758417
3	File	3566	30.164101
4	TS	1602	13.551007
5	ExternalType	1077	9.110134
6	Type	1077	9.110134
7	Author	994	8.408053
8	Declared	299	2.529183
9	Primitive	291	2.461512
10	ExternalDeclaration	211	1.784808
11	Literal	156	1.319574
12	Union	120	1.015057
13	ObjectMember	99	0.837422
14	Function	84	0.710540
15	Property	65	0.549822
16	Value	58	0.490611
17	Object	41	0.346811
18	FunctionParameter	38	0.321435
19	Parameter	33	0.279141
20	Local	28	0.236847
21	ExternalModule	25	0.211470
22	Variable	24	0.203011
23	jQAssistant	20	0.169176
24	Concept	19	0.160717
25	Rule	19	0.160717
26	Directory	18	0.152259
27	Interface	18	0.152259
28	Intersection	17	0.143800
29	TypeAlias	14	0.118423
30	NotIdentified	11	0.093047
31	EnumMember	8	0.067670
32	Call	6	0.050753
33	Member	6	0.050753
34	Module	6	0.050753
35	Project	6	0.050753
36	TypeParameterReference	6	0.050753
37	Complex	5	0.042294
38	TypeParameter	4	0.033835
39	Tuple	3	0.025376

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: 44913
```

	relationshipType	nodesWithThatRelationshipType	nodesWithThatRelationshipTypePercent
0	CONTAINS_CHANGED	21331	47.494044
1	AUTHORED	5646	12.570971
2	HAS_COMMIT	5646	12.570971
3	HAS_PARENT	4811	10.711821
4	HAS_FILE	3534	7.868546
5	HAS_AUTHOR	994	2.213168
6	DEPENDS_ON	953	2.121880
7	CONTAINS	468	1.042015
8	OF_TYPE	330	0.734754
9	EXPORTS	271	0.603389
10	REFERENCES	198	0.440852
11	DECLARES	185	0.411907
12	HAS_MEMBER	99	0.220426
13	HAS_TYPE_ARGUMENT	99	0.220426
14	RETURNS	81	0.180349
15	HAS_PARAMETER	71	0.158083
16	INITIALIZED_WITH	32	0.071249
17	REQUIRES_CONCEPT	28	0.062343
18	USES	25	0.055663
19	RESOLVES_TO	24	0.053437
20	INCLUDES_CONCEPT	19	0.042304
21	SIMILAR	10	0.022265
22	EXTENDS	7	0.015586
23	CALLS	6	0.013359
24	CONTAINS_PROJECT	6	0.013359
25	HAS_ARGUMENT	6	0.013359
26	HAS_CONFIG	6	0.013359
27	HAS_ROOT	6	0.013359
28	MEMBER	6	0.013359
29	PARENT	6	0.013359

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>
```

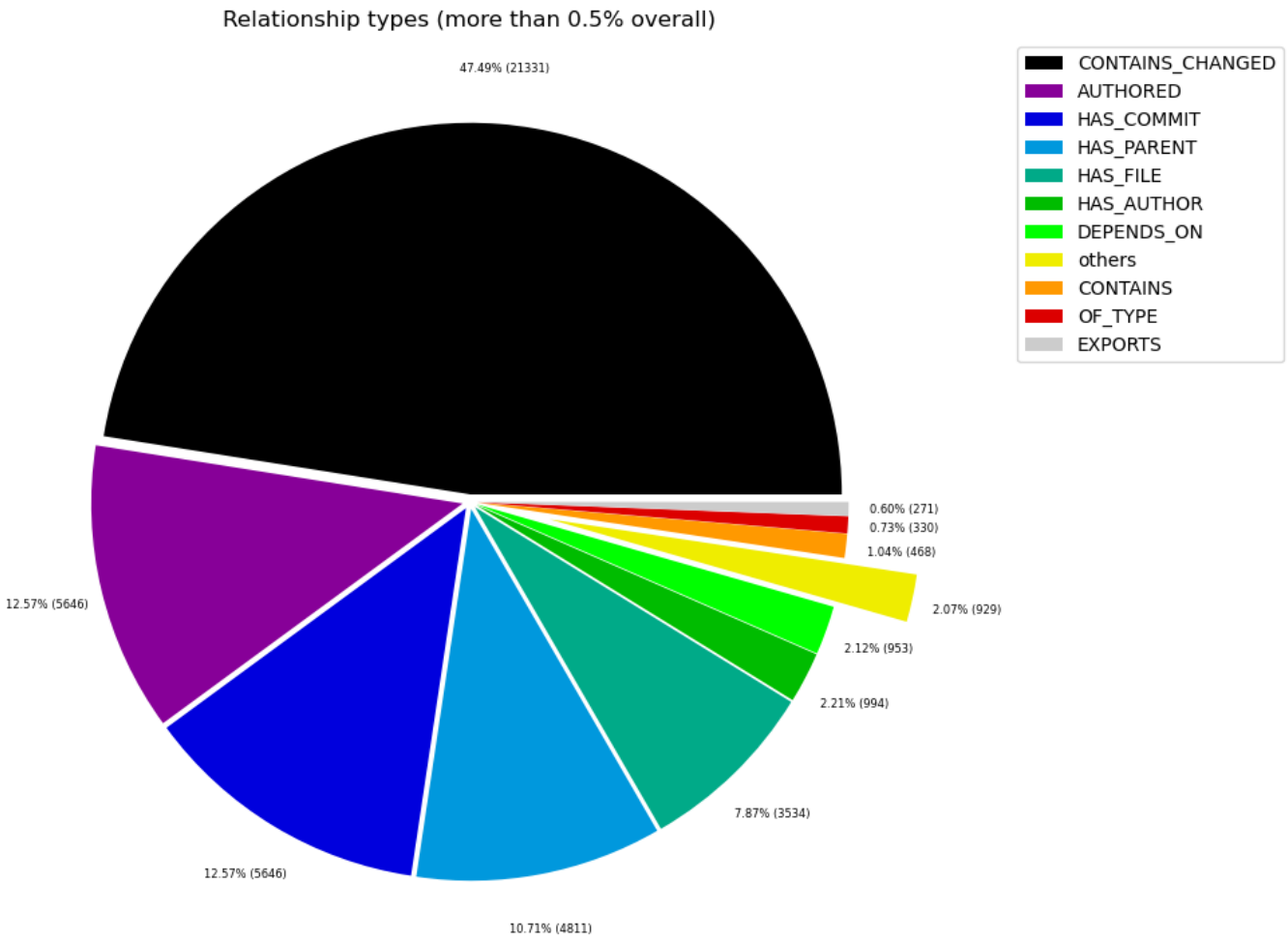


Table 2b - Lowest relationship count by type

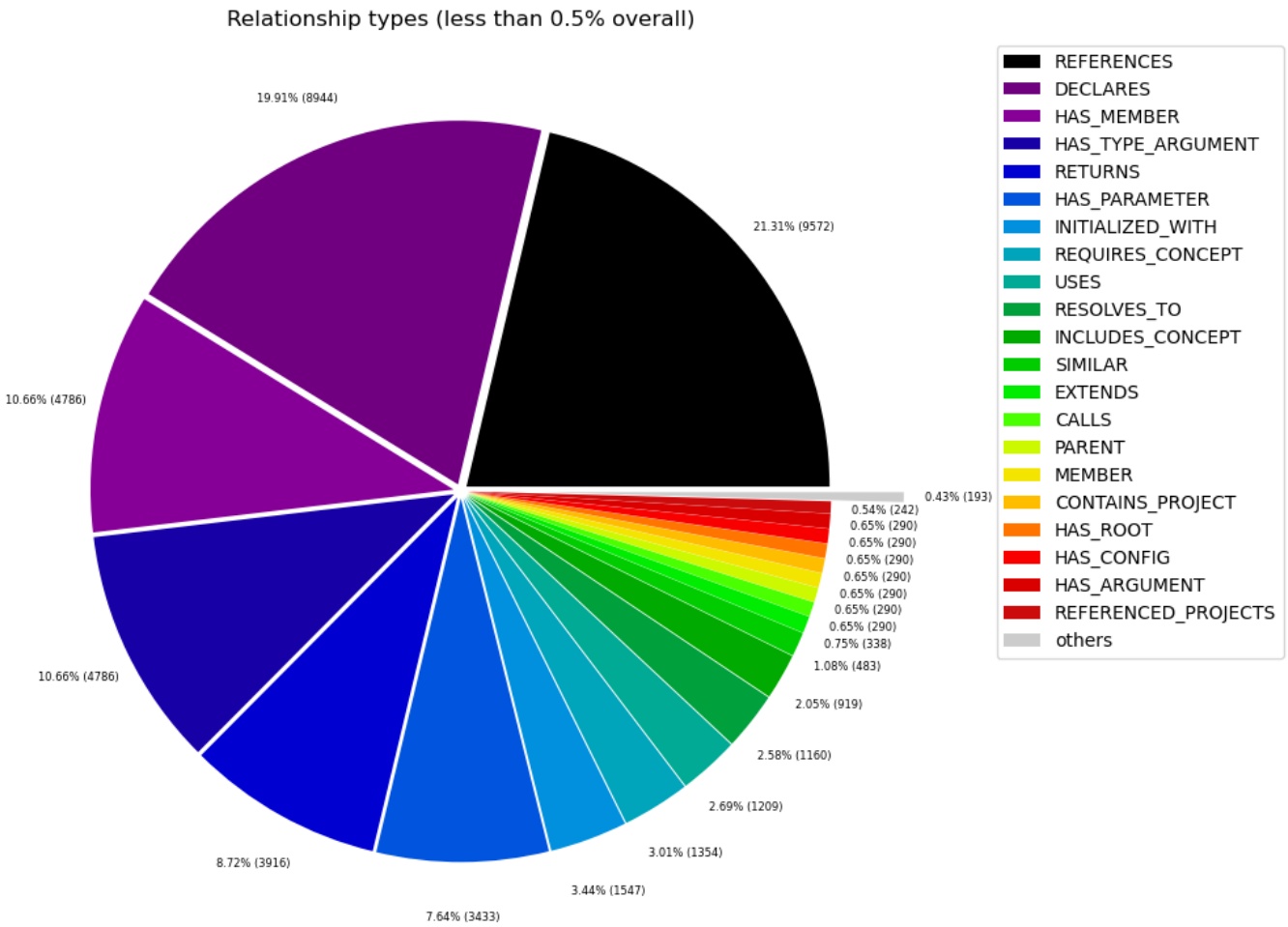
Lists the 30 relationships type with the lowest number of occurrences up to 0.5% of the total node count. This is essentially breaking down the "others" slice from the chart above.

	relationshipType	nodesWithThatRelationshipType	nodesWithThatRelationshipTypePercent
0	CONSTRAINED_BY	4	0.008906
1	REFERENCED_PROJECTS	5	0.011133
2	PARENT	6	0.013359
3	MEMBER	6	0.013359
4	HAS_ROOT	6	0.013359
5	HAS_CONFIG	6	0.013359
6	HAS_ARGUMENT	6	0.013359
7	CONTAINS_PROJECT	6	0.013359
8	CALLS	6	0.013359
9	EXTENDS	7	0.015586
10	SIMILAR	10	0.022265
11	INCLUDES_CONCEPT	19	0.042304
12	RESOLVES_TO	24	0.053437
13	USES	25	0.055663
14	REQUIRES_CONCEPT	28	0.062343
15	INITIALIZED_WITH	32	0.071249
16	HAS_PARAMETER	71	0.158083
17	RETURNS	81	0.180349
18	HAS_TYPE_ARGUMENT	99	0.220426
19	HAS_MEMBER	99	0.220426
20	DECLARES	185	0.411907
21	REFERENCES	198	0.440852

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, Log]	CONTAINS_CHANGED	[File, Git, Log]	21331	5646	
1	[Repository, Git]	HAS_COMMIT	[Git, Commit, Log]	5646	1	
2	[Git, Author, Log]	AUTHORED	[Git, Commit, Log]	5646	994	
3	[Git, Commit, Log]	HAS_PARENT	[Git, Commit, Log]	4811	5646	
4	[Repository, Git]	HAS_FILE	[File, Git, Log]	3534	1	
5	[Repository, Git]	HAS_AUTHOR	[Git, Author, Log]	994	1	
6	[TS, Function]	DEPENDS_ON	[TS, ExternalDeclaration]	280	47	
7	[TS, ExternalModule]	EXPORTS	[TS, ExternalDeclaration]	211	25	
8	[Type, TS, Union, ExternalType]	CONTAINS	[Type, TS, Primitive, ExternalType]	149	120	
9	[File, TS, Local, Module, Mark4ModuleWeaklyCon...	DEPENDS_ON	[TS, ExternalDeclaration]	148	1	
10	[Type, TS, Declared, ExternalType]	REFERENCES	[TS, ExternalDeclaration]	139	286	
11	[TS, Function]	DEPENDS_ON	[TS, ExternalModule]	129	47	
12	[Type, TS, Union, ExternalType]	CONTAINS	[Type, TS, Literal, ExternalType]	119	120	
13	[Type, TS, Object, ExternalType]	HAS_MEMBER	[Type, TS, ObjectMember, ExternalType]	98	38	
14	[Type, TS, Union, ExternalType]	CONTAINS	[Type, TS, Declared, ExternalType]	78	120	
15	[TS, Interface]	DECLARES	[TS, Property]	61	18	
16	[TS, Property]	OF_TYPE	[Type, TS, Union, ExternalType]	46	65	
17	[TS, Variable]	DEPENDS_ON	[TS, ExternalDeclaration]	44	24	
18	[Type, TS, Declared, ExternalType]	HAS_TYPE_ARGUMENT	[Type, TS, Declared, ExternalType]	43	286	
19	[File, TS, Local, Module, Mark4ModuleWeaklyCon...	DEPENDS_ON	[TS, ExternalDeclaration]	40	2	
20	[Type, TS, Function, ExternalType]	HAS_PARAMETER	[Type, TS, FunctionParameter, ExternalType]	38	33	
21	[Type, TS, ObjectMember, ExternalType]	OF_TYPE	[Type, TS, Union, ExternalType]	35	98	
22	[TS, Function]	HAS_PARAMETER	[TS, Parameter]	33	47	
23	[Type, TS, ObjectMember, ExternalType]	OF_TYPE	[Type, TS, Primitive, ExternalType]	31	98	
24	[TS, Function]	DEPENDS_ON	[TS, Function]	30	47	
25	[Type, TS, Declared, ExternalType]	HAS_TYPE_ARGUMENT	[Type, TS, Primitive, ExternalType]	29	286	
26	[jQAssistant, Rule, Concept]	REQUIRES_CONCEPT	[jQAssistant, Rule, Concept]	28	19	
27	[File, TS, Local, Module, Mark4ModuleWeaklyCon...	DECLARES	[TS, Function]	27	1	
28	[File, Directory, Local]	CONTAINS	[File, Directory, Local]	26	16	
29	[TS, Interface]	DEPENDS_ON	[TS, ExternalDeclaration]	26	18	

Graph Density

```
total_number_of_nodes (vertices): 11822
total_number_of_relationships (edges): 44913
-> total directed graph density: 0.0003213859543697348
-> total directed graph density in percent: 0.032138595436973484
```