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: 92879
```

	nodeLabels	nodesWithThatLabels	nodesWithThatLabelsPercent
0	[Git, Change]	71791	77.295191
1	[Git, Commit]	9856	10.611656
2	[File, Git]	5051	5.438258
3	[Author, Git, Person]	1182	1.272624
4	[Git, Tag]	1049	1.129426
5	[Json, Key]	668	0.719215
6	[Json, Value, Scalar]	603	0.649232
7	[Committer, Git, Person]	371	0.399444
8	[NPM, Dependency]	330	0.355301
9	[Type, TS, Primitive, ExternalType]	291	0.313311
10	[Type, TS, Declared, ExternalType]	286	0.307928
11	[TS, ExternalDeclaration]	215	0.231484
12	[Type, TS, Literal, ExternalType]	136	0.146427
13	[Json, Value, Object]	133	0.143197
14	[Type, TS, Union, ExternalType]	120	0.129200
15	[Type, TS, ObjectMember, ExternalType]	98	0.105514
16	[NPM, Script]	91	0.097977
17	[TS, Property]	65	0.069984
18	[TS, Function]	47	0.050603
19	[Type, Object, TS, ExternalType]	38	0.040913
20	[Type, TS, FunctionParameter, ExternalType]	38	0.040913
21	[File, Directory]	34	0.036607
22	[TS, Parameter]	33	0.035530
23	[Type, TS, Function, ExternalType]	33	0.035530
24	[Package, File, Json, NPM]	29	0.031223
25	[TS, ExternalModule]	25	0.026917
26	[Git, Branch]	25	0.026917
27	[TS, Variable]	24	0.025840
28	[Value, TS, Literal]	20	0.021533
29	[jQAssistant, Rule, Concept]	19	0.020457

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>
```

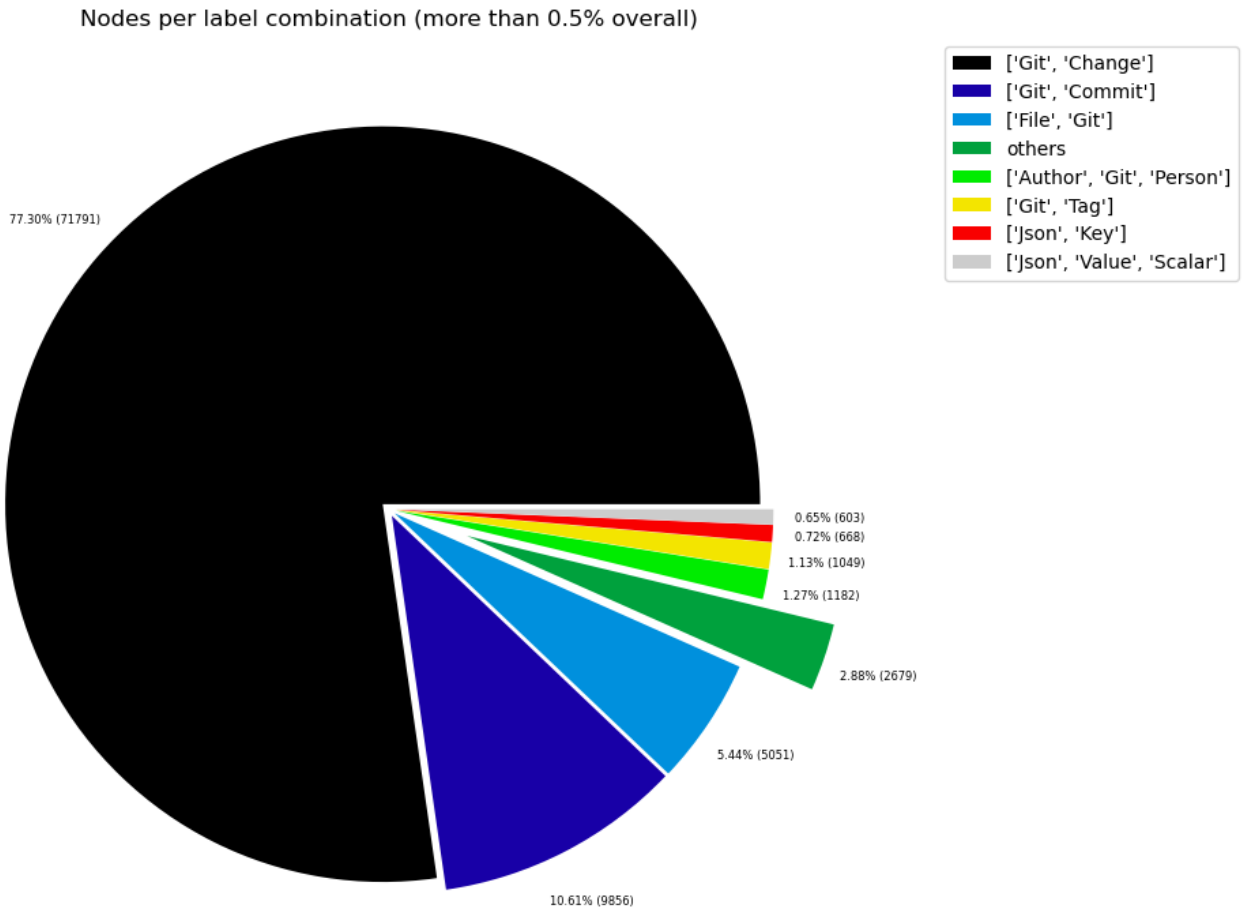


Table 1b - Lowest node count by label combination

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	0.001077
1	[File, TS, Scan]	1	0.001077
2	[TS, Method]	1	0.001077
3	[Value, TS, ObjectMember]	1	0.001077
4	[TS, Constructor]	1	0.001077
5	[TS, Class]	1	0.001077
6	[TS, Enum]	2	0.002153
7	[Value, Object, TS]	3	0.003230
8	[Type, TS, Tuple, ExternalType]	3	0.003230
9	[Value, TS, Function]	4	0.004307
10	[TS, TypeParameter]	4	0.004307
11	[Value, TS, Complex]	5	0.005383
12	[NPM, Engine]	6	0.006460
13	[Project, TS]	6	0.006460
14	[File, Local]	6	0.006460
15	[Value, TS, Call]	6	0.006460
16	[Value, TS, Member]	6	0.006460
17	[File, TS, Local, Module]	6	0.006460
18	[Type, TS, TypeParameterReference, ExternalType]	6	0.006460
19	[TS, EnumMember]	8	0.008613
20	[Type, TS, NotIdentified, ExternalType]	11	0.011843
21	[Json, Value, Array]	12	0.012920
22	[Value, TS, Declared]	13	0.013997
23	[TS, TypeAlias]	14	0.015073
24	[File, Directory, Local]	16	0.017227
25	[Type, TS, Intersection, ExternalType]	17	0.018303
26	[TS, Interface]	18	0.019380
27	[jQAssistant, Rule, Concept]	19	0.020457
28	[Value, TS, Literal]	20	0.021533
29	[TS, Variable]	24	0.025840

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>
```

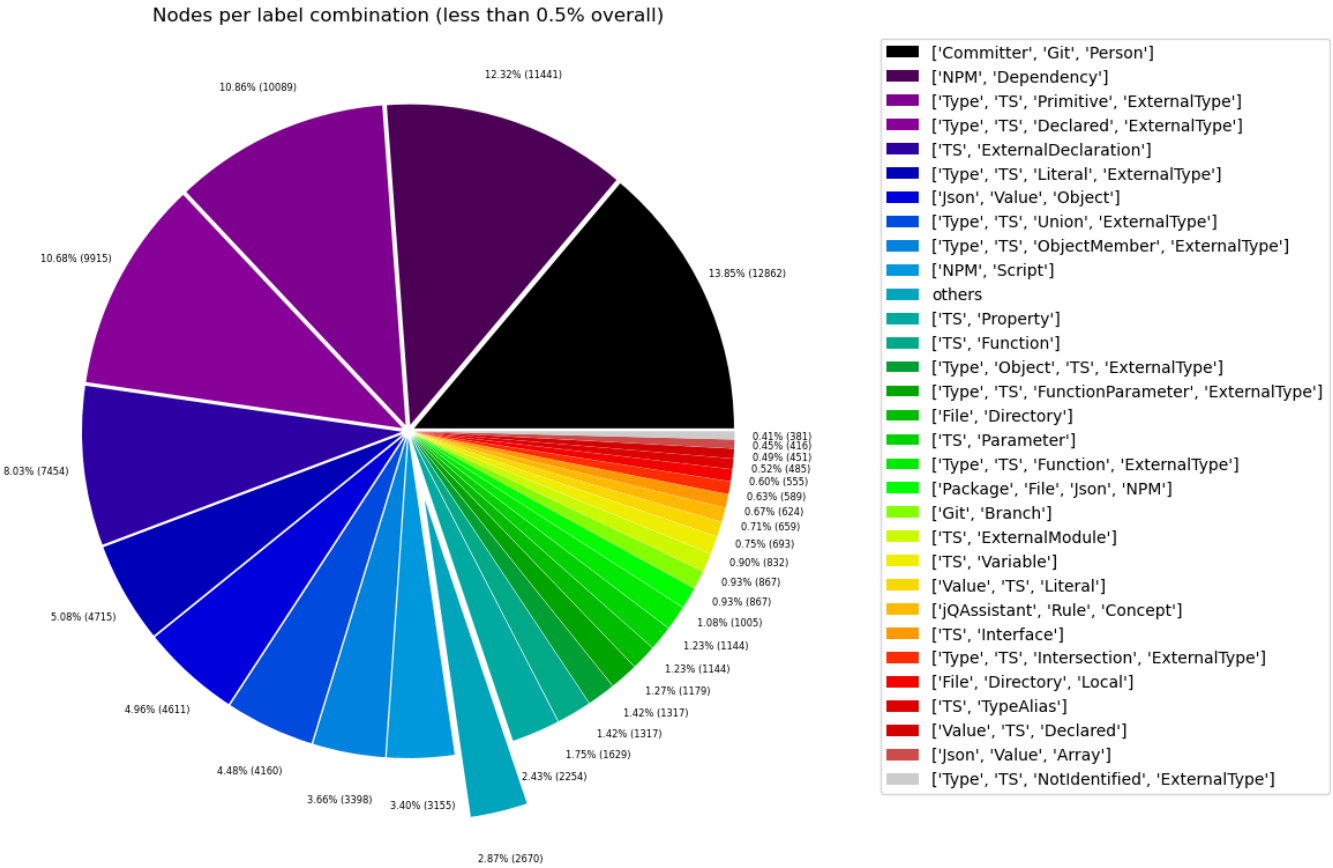


Table 1c - Highest node count by single label

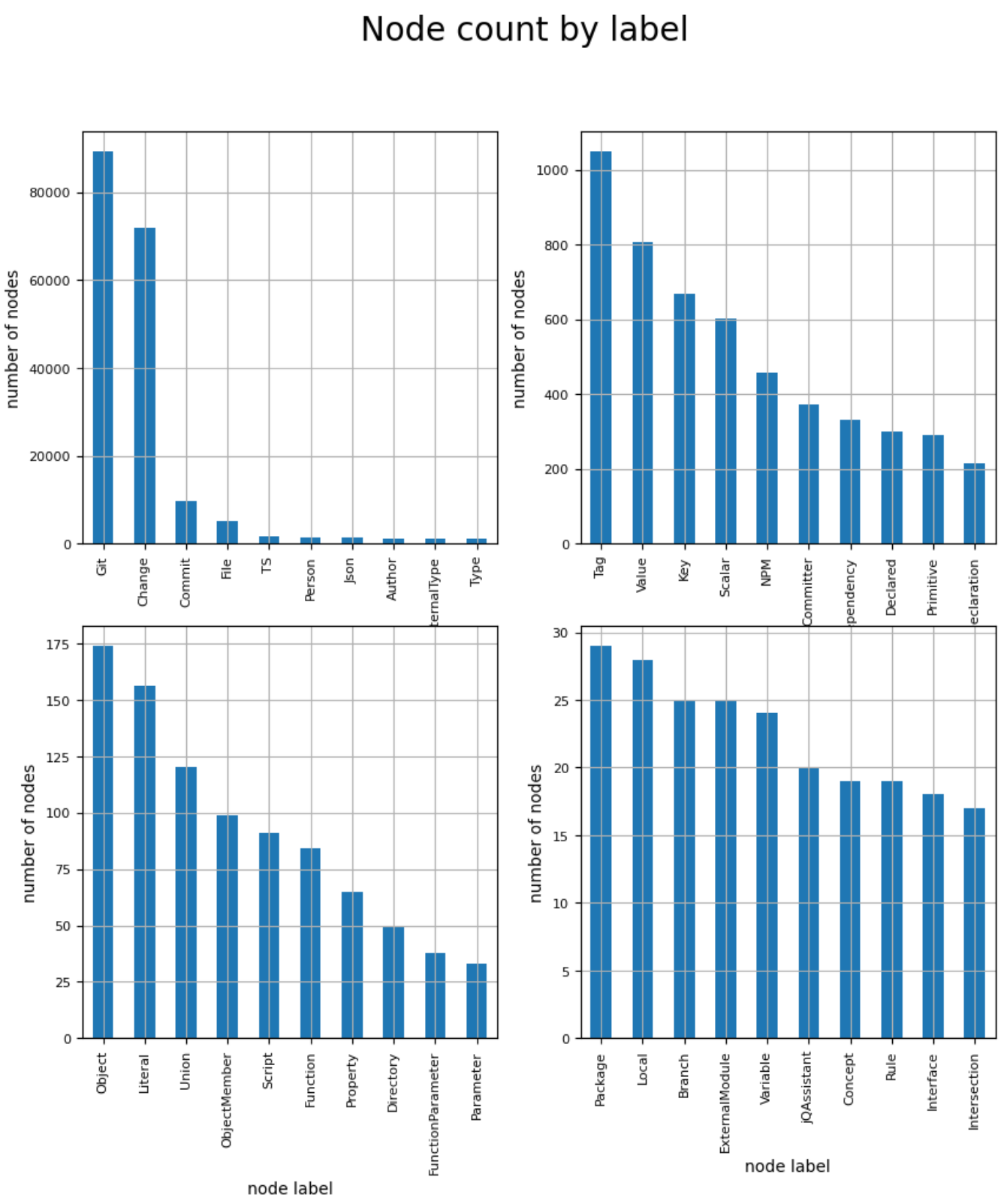
Lists the 40 labels with the highest number of nodes. Doesn't sum up to the total number of nodes or 100% because one node can have multiple labels. Helps to identify commonly used labels.

	nodeLabel	nodesWithThatLabel	nodesWithThatLabelPercent
0	Git	89325	96.173516
1	Change	71791	77.295191
2	Commit	9856	10.611656
3	File	5143	5.537312
4	TS	1606	1.729131
5	Person	1553	1.672068
6	Json	1445	1.555788
7	Author	1182	1.272624
8	ExternalType	1077	1.159573
9	Type	1077	1.159573
10	Tag	1049	1.129426
11	Value	806	0.867796
12	Key	668	0.719215
13	Scalar	603	0.649232
14	NPM	456	0.490961
15	Committer	371	0.399444
16	Dependency	330	0.355301
17	Declared	299	0.321924
18	Primitive	291	0.313311
19	ExternalDeclaration	215	0.231484
20	Object	174	0.187341
21	Literal	156	0.167960
22	Union	120	0.129200
23	ObjectMember	99	0.106590
24	Script	91	0.097977
25	Function	84	0.090440
26	Property	65	0.069984
27	Directory	50	0.053833
28	FunctionParameter	38	0.040913
29	Parameter	33	0.035530
30	Package	29	0.031223
31	Local	28	0.030147
32	Branch	25	0.026917
33	ExternalModule	25	0.026917
34	Variable	24	0.025840
35	jQAssistant	20	0.021533
36	Concept	19	0.020457
37	Rule	19	0.020457
38	Interface	18	0.019380
39	Intersection	17	0.018303

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: 258995
```

	relationshipType	nodesWithThatRelationshipType	nodesWithThatRelationshipTypePercent
0	CONTAINS_CHANGE	71791	27.719068
1	MODIFIES	71791	27.719068
2	UPDATES	47933	18.507307
3	COMMITTED	19712	7.610958
4	CREATES	16672	6.437190
5	HAS_PARENT	10852	4.190042
6	DELETES	9892	3.819379
7	RENAMES	2706	1.044808
8	HAS_NEW_NAME	1543	0.595764
9	ON_COMMIT	1049	0.405027
10	DEPENDS_ON	965	0.372594
11	HAS_KEY	668	0.257920
12	HAS_VALUE	668	0.257920
13	CONTAINS	604	0.233209
14	OF_TYPE	330	0.127416
15	EXPORTS	275	0.106180
16	REFERENCES	198	0.076449
17	DECLARES	185	0.071430
18	DECLARES_DEV_DEPENDENCY	169	0.065252
19	DECLARES_DEPENDENCY	161	0.062163
20	HAS_MEMBER	99	0.038225
21	HAS_TYPE_ARGUMENT	99	0.038225
22	DECLARES_SCRIPT	91	0.035136
23	RETURNS	81	0.031275
24	RESOLVES_TO	80	0.030889
25	HAS_PARAMETER	71	0.027414
26	CONTAINS_VALUE	51	0.019691
27	INITIALIZED_WITH	32	0.012355
28	COPIES	29	0.011197
29	REQUIRES_CONCEPT	28	0.010811

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>
```

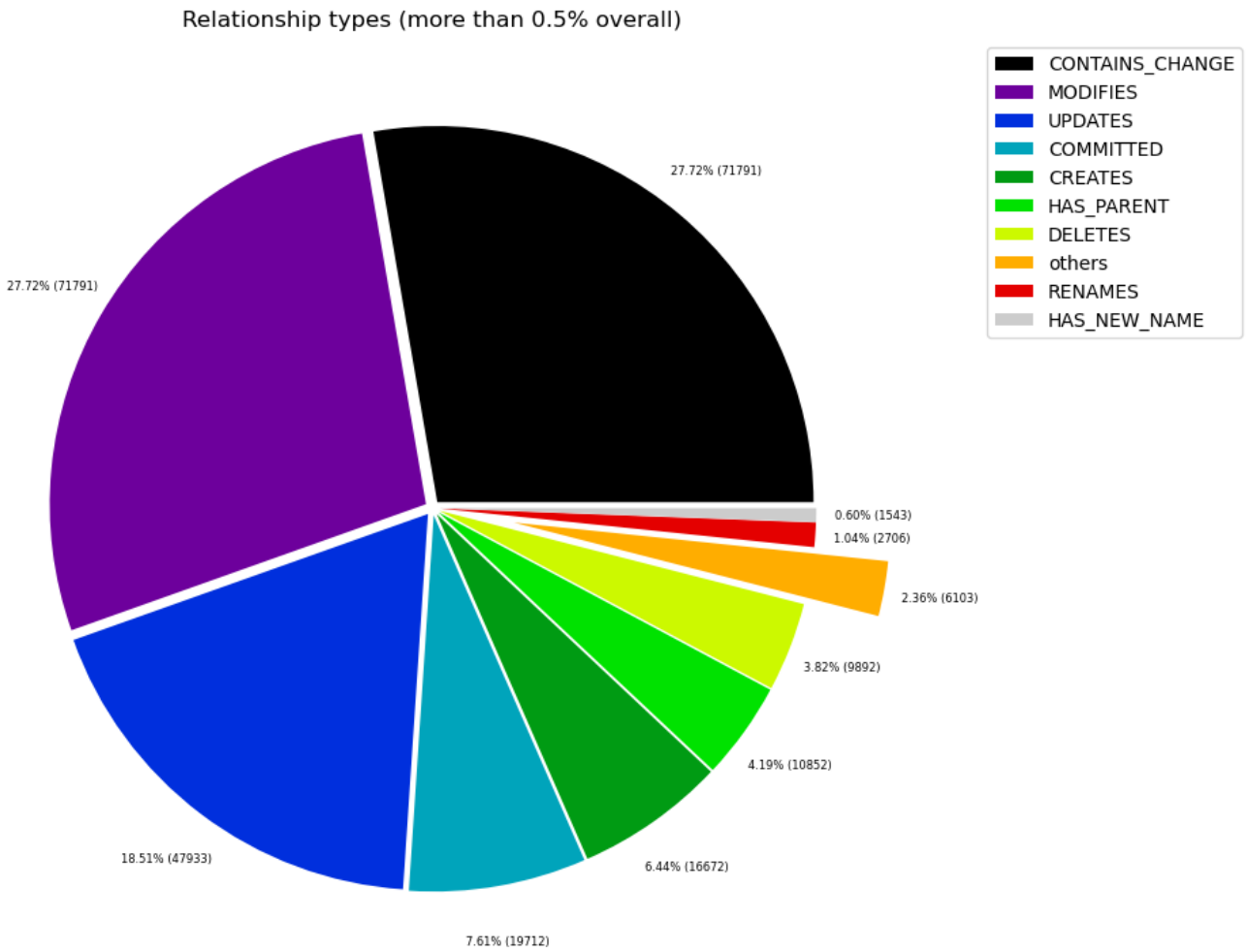


Table 2b - Lowest relationship count by type

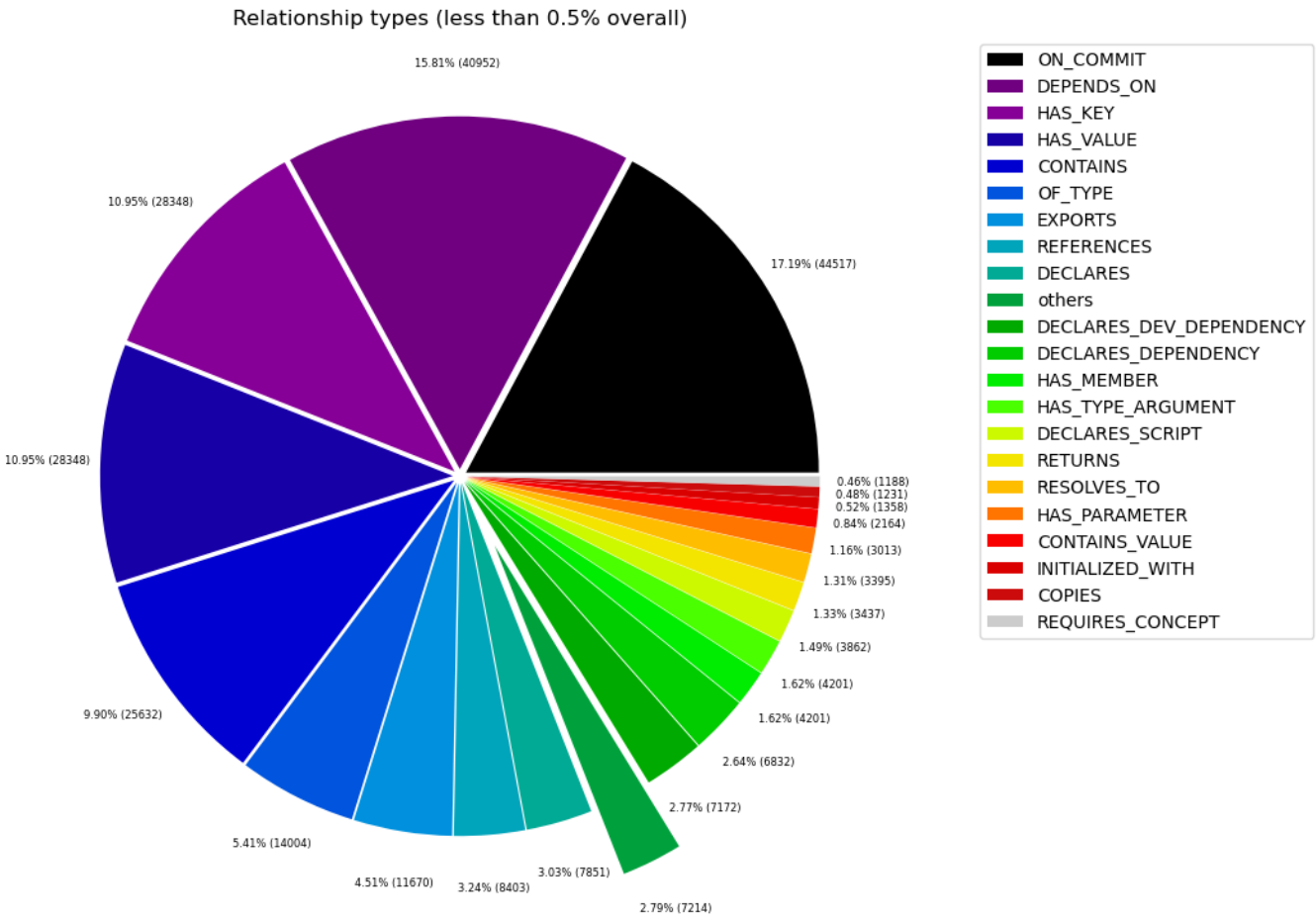
Lists the 30 relationships type with the lowest number of occurrences up to 0.5% of the total node count. This is essentially breaking down the "others" slice from the chart above.

	relationshipType	nodesWithThatRelationshipType	nodesWithThatRelationshipTypePercent
0	CONSTRAINED_BY	4	0.001544
1	REFERENCED_PROJECTS	5	0.001931
2	MEMBER	6	0.002317
3	HAS_ROOT	6	0.002317
4	HAS_NPM_PACKAGE	6	0.002317
5	HAS_CONFIG	6	0.002317
6	HAS_ARGUMENT	6	0.002317
7	DECLARES_ENGINE	6	0.002317
8	CONTAINS_PROJECT	6	0.002317
9	CALLS	6	0.002317
10	PARENT	6	0.002317
11	EXTENDS	7	0.002703
12	SIMILAR	10	0.003861
13	INCLUDES_CONCEPT	19	0.007336
14	COPY_OF	21	0.008108
15	USES	25	0.009653
16	HAS_HEAD	25	0.009653
17	REQUIRES_CONCEPT	28	0.010811
18	COPIES	29	0.011197
19	INITIALIZED_WITH	32	0.012355
20	CONTAINS_VALUE	51	0.019691
21	HAS_PARAMETER	71	0.027414
22	RESOLVES_TO	80	0.030889
23	RETURNS	81	0.031275
24	DECLARES_SCRIPT	91	0.035136
25	HAS_TYPE_ARGUMENT	99	0.038225
26	HAS_MEMBER	99	0.038225
27	DECLARES_DEPENDENCY	161	0.062163
28	DECLARES_DEV_DEPENDENCY	169	0.065252
29	DECLARES	185	0.071430

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]	71791	9856	
1	[Git, Change]	MODIFIES	[File, Git]	71791	71791	
2	[Git, Change]	UPDATES	[File, Git]	47933	71791	
3	[Git, Change]	CREATES	[File, Git]	16672	71791	
4	[Git, Commit]	HAS_PARENT	[Git, Commit]	10852	9856	
5	[Git, Change]	DELETES	[File, Git]	9892	71791	
6	[Author, Git, Person]	COMMITTED	[Git, Commit]	9856	1182	
7	[Committer, Git, Person]	COMMITTED	[Git, Commit]	9856	371	
8	[Git, Change]	RENAMES	[File, Git]	2706	71791	
9	[File, Git]	HAS_NEW_NAME	[File, Git]	1543	5051	
10	[Git, Tag]	ON_COMMIT	[Git, Commit]	1049	1049	
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]	284	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]	149	120	
19	[Type, TS, Declared, ExternalType]	REFERENCES	[TS, ExternalDeclaration]	139	286	
20	[TS, Function]	DEPENDS_ON	[TS, ExternalModule]	130	47	
21	[Type, TS, Union, ExternalType]	CONTAINS	[Type, TS, Literal, ExternalType]	119	120	
22	[Json, Key]	HAS_VALUE	[Json, Value, Object]	104	668	
23	[Type, Object, TS, ExternalType]	HAS_MEMBER	[Type, TS, ObjectMember, ExternalType]	98	38	
24	[Package, File, Json, NPM]	DECLARES_SCRIPT	[NPM, Script]	91	29	
25	[Type, TS, Union, ExternalType]	CONTAINS	[Type, TS, Declared, ExternalType]	78	120	
26	[File, Directory]	CONTAINS	[File, Directory]	63	34	
27	[TS, Interface]	DECLARES	[TS, Property]	61	18	
28	[File, Directory]	CONTAINS	[Package, File, Json, NPM]	58	34	
29	[File, Git]	RESOLVES_TO	[Package, File, Json, NPM]	57	5051	

Graph Density

```
total_number_of_nodes (vertices): 92879
total_number_of_relationships (edges): 258995
-> total directed graph density: 3.0023477553782204e-05
-> total directed graph density in percent: 0.0030023477553782203
```