

# 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`.

	nodeLabels	nodesWithThatLabels	nodesWithThatLabelsPercent
0	[Git, Change]	83065	78.414991
1	[Git, Commit]	10744	10.142547
2	[File, Git]	5534	5.224205
3	[Git, Tag]	1385	1.307467
4	[Author, Git, Person]	1234	1.164920
5	[Json, Key]	668	0.630605
6	[Json, Value, Scalar]	603	0.569244
7	[Committer, Git, Person]	371	0.350231
8	[NPM, Dependency]	338	0.319079
9	[Type, TS, Primitive]	291	0.274710
10	[Type, TS, Declared]	276	0.260549
11	[TS, ExternalDeclaration]	214	0.202020
12	[Type, TS, Literal]	136	0.128387
13	[Json, Value, Object]	133	0.125555
14	[Type, TS, Union]	119	0.112338
15	[Type, TS, ObjectMember]	101	0.095346
16	[NPM, Script]	91	0.085906
17	[TS, Property]	65	0.061361
18	[TS, Function]	47	0.044369
19	[Type, TS, FunctionParameter]	40	0.037761
20	[Git, Branch]	40	0.037761
21	[Type, Object, TS]	39	0.036817
22	[File, Directory]	34	0.032097
23	[Type, TS, Function]	34	0.032097
24	[TS, Parameter]	33	0.031153
25	[Package, File, Json, NPM]	29	0.027377
26	[TS, Variable]	24	0.022656
27	[TS, ExternalModule]	23	0.021712
28	[Value, TS, Literal]	20	0.018880
29	[JQAssistant, Rule, Concept]	19	0.017936

## 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>

Nodes per label combination (more than 0.5% overall)

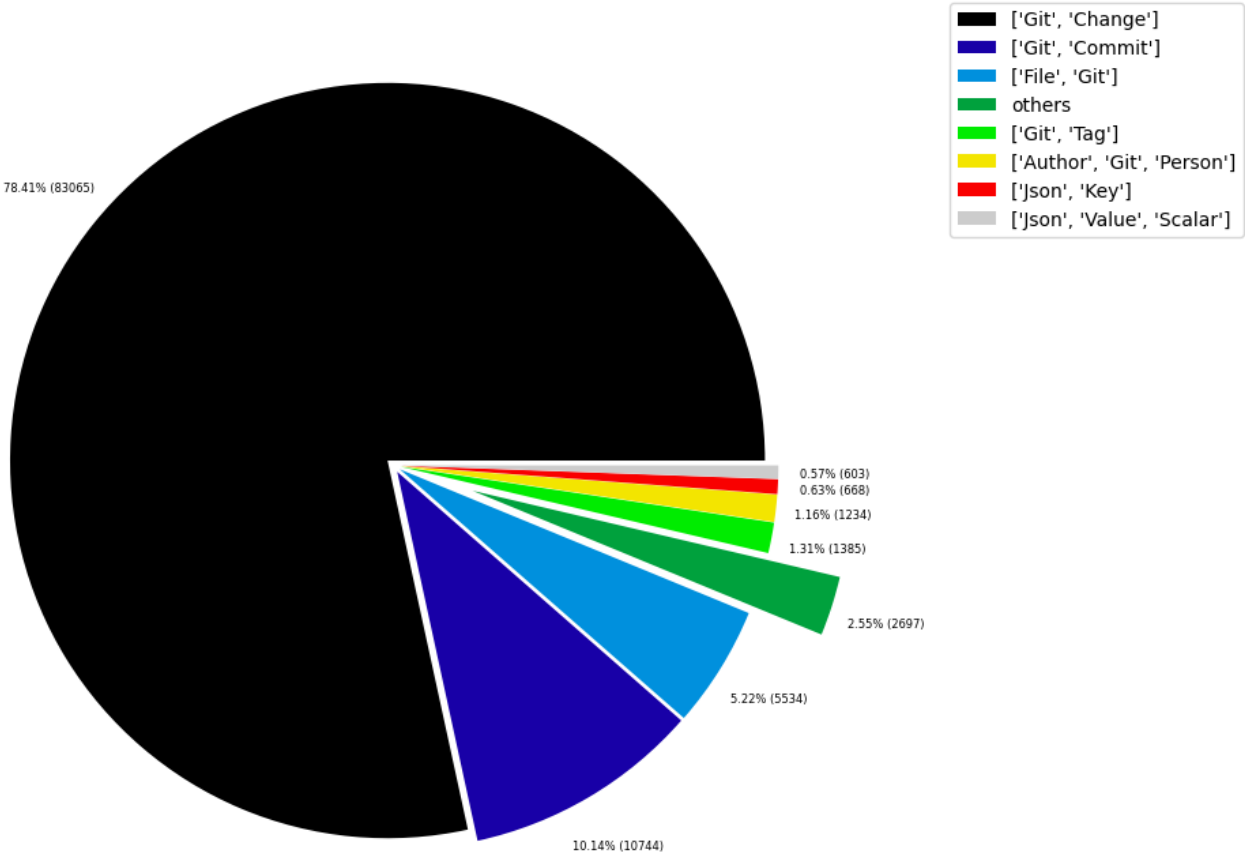


Table 1b - Lowest node count by label combination

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	0.000944
1	[File, TS, Scan]	1	0.000944
2	[TS, Method]	1	0.000944
3	[Repository, File, Git]	1	0.000944
4	[TS, Constructor]	1	0.000944
5	[Value, TS, ObjectMember]	1	0.000944
6	[TS, Class]	1	0.000944
7	[TS, Enum]	2	0.001888
8	[Value, Object, TS]	3	0.002832
9	[Type, TS, Tuple]	3	0.002832
10	[Value, TS, Function]	4	0.003776
11	[TS, TypeParameter]	4	0.003776
12	[Value, TS, Complex]	5	0.004720
13	[NPM, Engine]	6	0.005664
14	[Project, TS]	6	0.005664
15	[File, Local]	6	0.005664
16	[Value, TS, Call]	6	0.005664
17	[Value, TS, Member]	6	0.005664
18	[File, TS, Local, Module]	6	0.005664
19	[Type, TS, TypeParameterReference]	6	0.005664
20	[TS, EnumMember]	8	0.007552
21	[Type, TS, NotIdentified]	11	0.010384
22	[Json, Value, Array]	12	0.011328
23	[Value, TS, Declared]	13	0.012272
24	[TS, TypeAlias]	16	0.015104
25	[File, Directory, Local]	16	0.015104
26	[TS, Interface]	17	0.016048
27	[Type, TS, Intersection]	17	0.016048
28	[jqAssistant, Rule, Concept]	19	0.017936
29	[Value, TS, Literal]	20	0.018880

## 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>

Nodes per label combination (less than 0.5% overall)

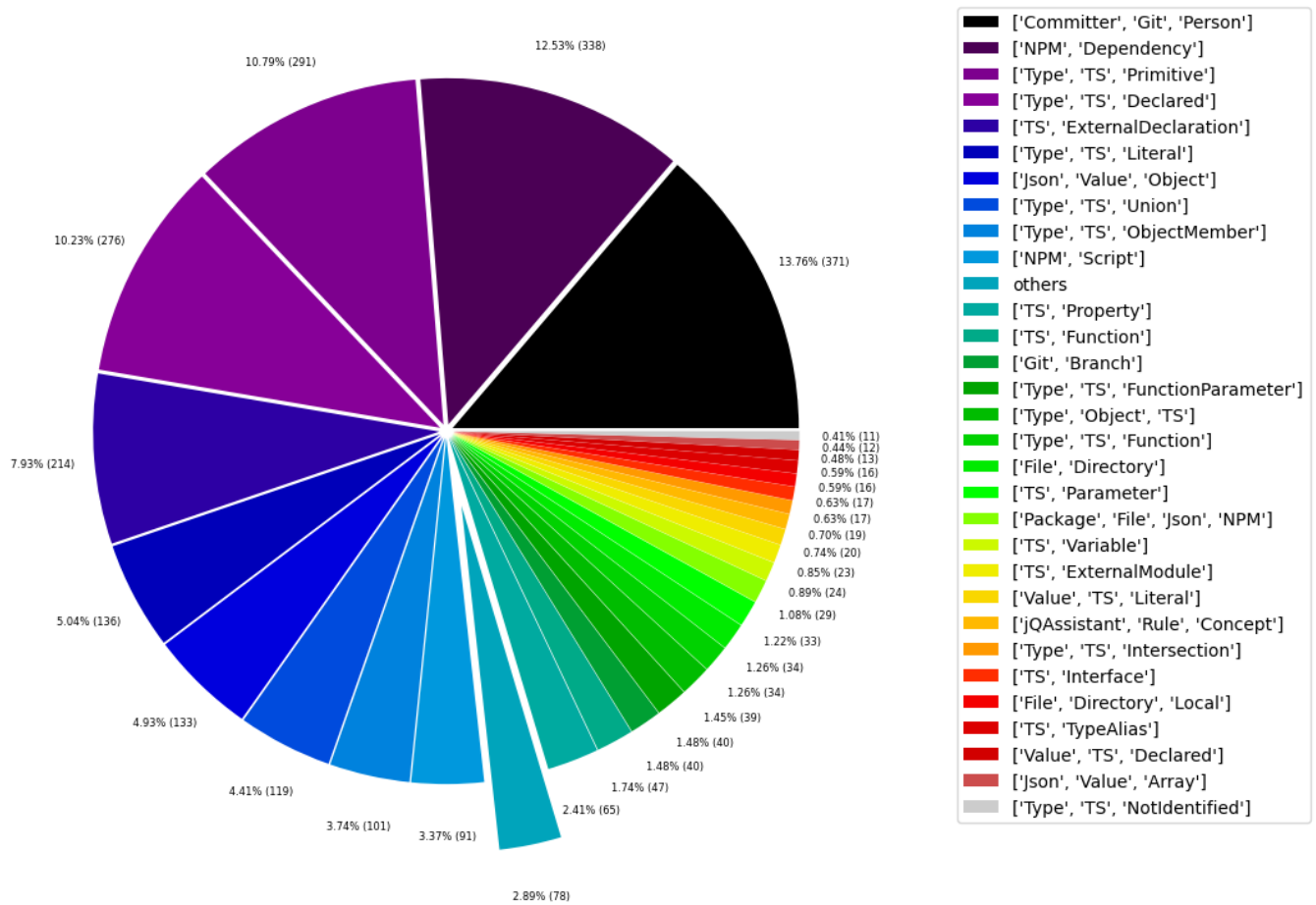


Table 1c - Highest node count by single label

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.

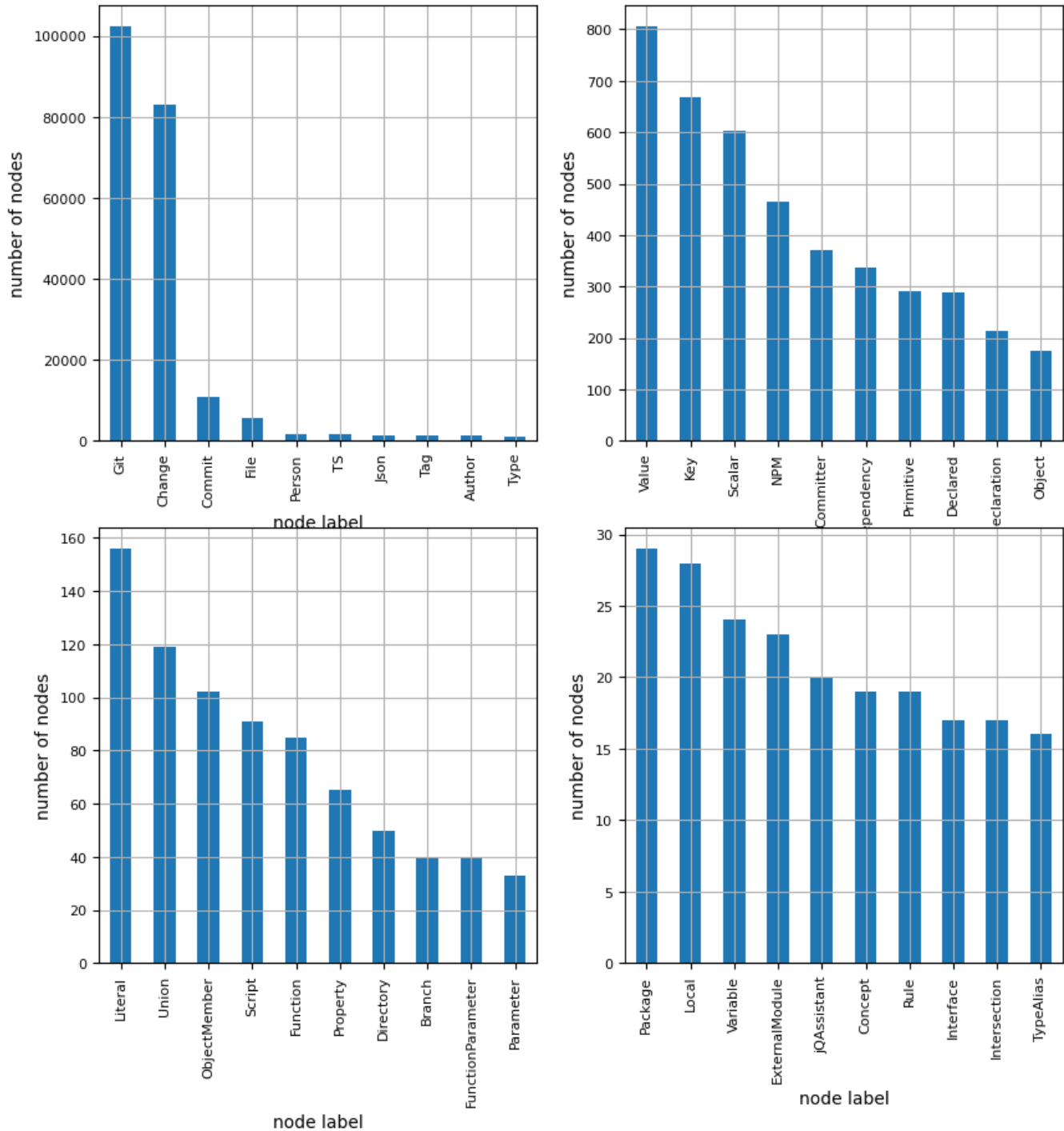
	nodeLabel	nodesWithThatLabel	nodesWithThatLabelPercent
0	Git	102374	96.643066
1	Change	83065	78.414991
2	Commit	10744	10.142547
3	File	5627	5.311998
4	Person	1605	1.515152
5	TS	1600	1.510431
6	Json	1445	1.364108
7	Tag	1385	1.307467
8	Author	1234	1.164920
9	Type	1073	1.012933
10	Value	806	0.760880
11	Key	668	0.630605
12	Scalar	603	0.569244
13	NPM	464	0.438025
14	Committer	371	0.350231
15	Dependency	338	0.319079
16	Primitive	291	0.274710
17	Declared	289	0.272822
18	ExternalDeclaration	214	0.202020
19	Object	175	0.165203
20	Literal	156	0.147267
21	Union	119	0.112338
22	ObjectMember	102	0.096290
23	Script	91	0.085906
24	Function	85	0.080242
25	Property	65	0.061361
26	Directory	50	0.047201
27	Branch	40	0.037761
28	FunctionParameter	40	0.037761
29	Parameter	33	0.031153
30	Package	29	0.027377
31	Local	28	0.026433
32	Variable	24	0.022656
33	ExternalModule	23	0.021712
34	jqAssistant	20	0.018880
35	Concept	19	0.017936
36	Rule	19	0.017936
37	Interface	17	0.016048
38	Intersection	17	0.016048
39	TypeAlias	16	0.015104

## Chart 1c - Highest node count by label

Shows the 40 labels with the highest number of nodes.

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## Node count by label



## 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: 316541

	relationshipType	nodesWithThatRelationshipType	nodesWithThatRelationshipTypePercent
0	CONTAINS_CHANGE	83065	26.241466
1	MODIFIES	83065	26.241466
2	UPDATES	54392	17.183240
3	COMMITTED	21488	6.788378
4	CREATES	19954	6.303765
5	DELETES	11969	3.781185
6	HAS_PARENT	11798	3.727163
7	HAS_COMMIT	10744	3.394189
8	HAS_FILE	5534	1.748273
9	RENAMES	3250	1.026723
10	HAS_NEW_NAME	1729	0.546217
11	HAS_TAG	1385	0.437542
12	ON_COMMIT	1385	0.437542
13	HAS_AUTHOR	1234	0.389839
14	DEPENDS_ON	961	0.303594
15	HAS_KEY	668	0.211031
16	HAS_VALUE	668	0.211031
17	CONTAINS	594	0.187653
18	HAS_COMMITTER	371	0.117204
19	OF_TYPE	337	0.106463
20	EXPORTS	283	0.089404
21	REFERENCES	197	0.062235
22	DECLARES	186	0.058760
23	DECLARES_DEV_DEPENDENCY	169	0.053390
24	DECLARES_DEPENDENCY	161	0.050862
25	HAS_MEMBER	102	0.032223
26	HAS_TYPE_ARGUMENT	94	0.029696
27	DECLARES_SCRIPT	91	0.028748
28	RETURNS	82	0.025905
29	COPIES	77	0.024325

## 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>



Relationship types (more than 0.5% overall)

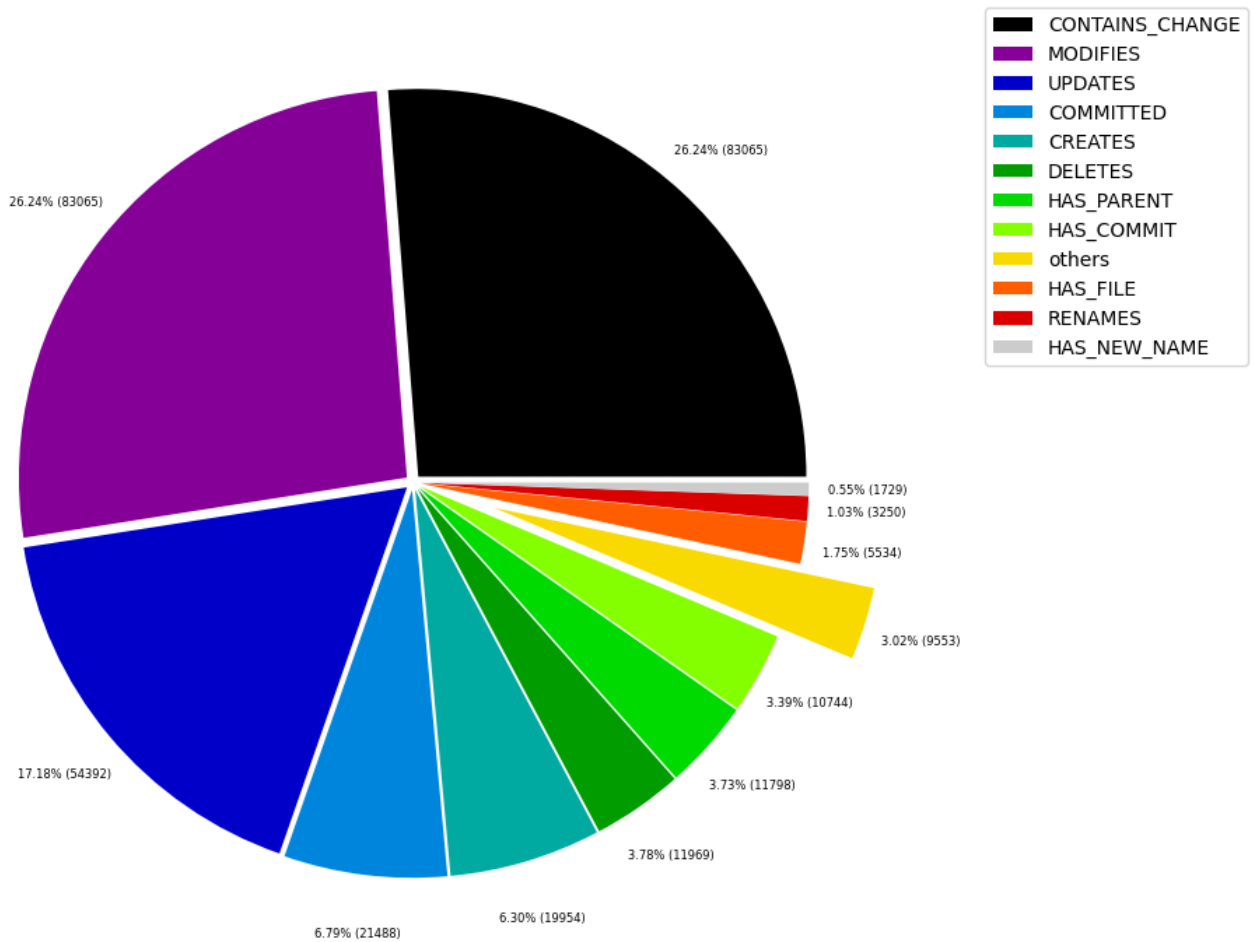


Table 2b - Lowest relationship count by type

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.

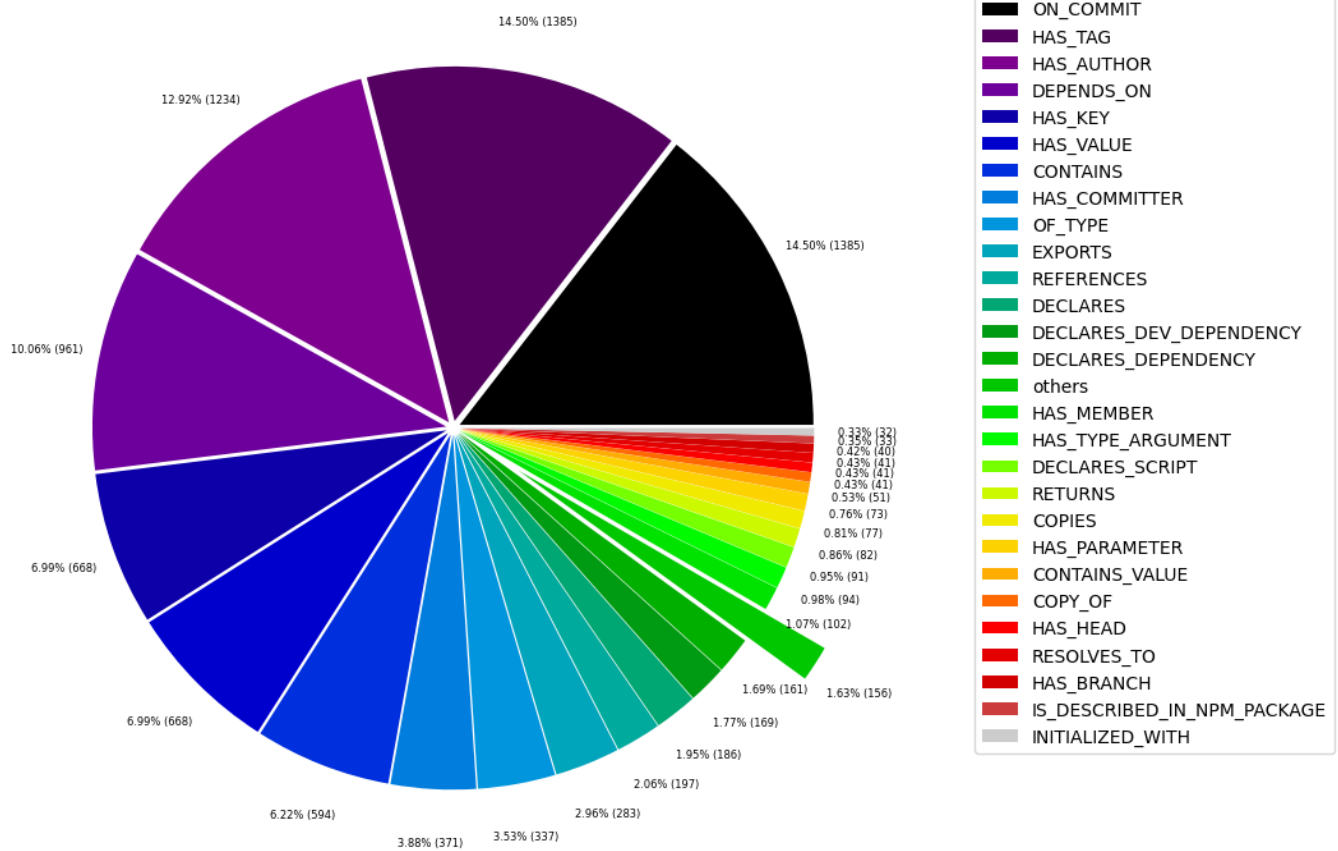
	relationshipType	nodesWithThatRelationshipType	nodesWithThatRelationshipTypePercent
0	PROVIDED_BY_NPM_DEPENDENCY	1	0.000316
1	IS_IMPLEMENTED_IN	2	0.000632
2	CONSTRAINED_BY	4	0.001264
3	REFERENCED_PROJECTS	5	0.001580
4	CONTAINS_PROJECT	6	0.001895
5	DECLARES_ENGINE	6	0.001895
6	EXTENDS	6	0.001895
7	HAS_ARGUMENT	6	0.001895
8	CALLS	6	0.001895
9	HAS_NPM_PACKAGE	6	0.001895
10	HAS_ROOT	6	0.001895
11	MEMBER	6	0.001895
12	PARENT	6	0.001895
13	HAS_CONFIG	6	0.001895
14	SIMILAR	6	0.001895
15	DECLARES_PEER_DEPENDENCY	8	0.002527
16	INCLUDES_CONCEPT	19	0.006002
17	USES	23	0.007266
18	REQUIRES_CONCEPT	28	0.008846
19	INITIALIZED_WITH	32	0.010109
20	IS_DESCRIBED_IN_NPM_PACKAGE	33	0.010425
21	HAS_BRANCH	40	0.012637
22	RESOLVES_TO	41	0.012953
23	HAS_HEAD	41	0.012953
24	COPY_OF	41	0.012953
25	CONTAINS_VALUE	51	0.016112
26	HAS_PARAMETER	73	0.023062
27	COPIES	77	0.024325
28	RETURNS	82	0.025905
29	DECLARES_SCRIPT	91	0.028748

## 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>

Relationship types (less than 0.5% overall)



## 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, Change]	MODIFIES	[File, Git]	83065	83065	
1	[Git, Commit]	CONTAINS_CHANGE	[Git, Change]	83065	10744	
2	[Git, Change]	UPDATES	[File, Git]	54392	83065	
3	[Git, Change]	CREATES	[File, Git]	19954	83065	
4	[Git, Change]	DELETES	[File, Git]	11969	83065	
5	[Git, Commit]	HAS_PARENT	[Git, Commit]	11798	10744	
6	[Repository, File, Git]	HAS_COMMIT	[Git, Commit]	10744	1	
7	[Author, Git, Person]	COMMITTED	[Git, Commit]	10744	1234	
8	[Committer, Git, Person]	COMMITTED	[Git, Commit]	10744	371	
9	[Repository, File, Git]	HAS_FILE	[File, Git]	5534	1	
10	[Git, Change]	RENAMES	[File, Git]	3250	83065	
11	[File, Git]	HAS_NEW_NAME	[File, Git]	1729	5534	
12	[Repository, File, Git]	HAS_TAG	[Git, Tag]	1385	1	
13	[Git, Tag]	ON_COMMIT	[Git, Commit]	1385	1385	
14	[Repository, File, Git]	HAS_AUTHOR	[Author, Git, Person]	1234	1	
15	[Json, Value, Object]	HAS_KEY	[Json, Key]	668	133	
16	[Json, Key]	HAS_VALUE	[Json, Value, Scalar]	552	668	
17	[Repository, File, Git]	HAS_COMMITTER	[Committer, Git, Person]	371	1	
18	[TS, Function]	DEPENDS_ON	[TS, ExternalDeclaration]	289	47	
19	[File, TS, Local, Module, Mark4ModuleWeaklyCon...	DEPENDS_ON	[TS, ExternalDeclaration]	232	4	
20	[TS, ExternalModule]	EXPORTS	[TS, ExternalDeclaration]	214	23	
21	[Package, File, Json, NPM]	DECLARES_DEV_DEPENDENCY	[NPM, Dependency]	169	29	
22	[Package, File, Json, NPM]	DECLARES_DEPENDENCY	[NPM, Dependency]	161	29	
23	[Type, TS, Union]	CONTAINS	[Type, TS, Primitive]	147	119	
24	[Type, TS, Declared]	REFERENCES	[TS, ExternalDeclaration]	142	276	
25	[TS, Function]	DEPENDS_ON	[TS, ExternalModule]	132	47	
26	[Type, TS, Union]	CONTAINS	[Type, TS, Literal]	119	119	
27	[Json, Key]	HAS_VALUE	[Json, Value, Object]	104	668	
28	[Type, Object, TS]	HAS_MEMBER	[Type, TS, ObjectMember]	101	39	
29	[Package, File, Json, NPM]	DECLARES_SCRIPT	[NPM, Script]	91	29	

## Graph Density

total\_number\_of\_nodes (vertices): 105930

total\_number\_of\_relationships (edges): 316541

-> total directed graph density: 2.8209547855178948e-05

-> total directed graph density in percent: 0.0028209547855178947