

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: 307309

	nodeLabels	nodesWithThatLabels	nodesWithThatLabelsPercent
0	[Git, Change]	231147	75.216476
1	[Git, Commit]	11646	3.789671
2	[Java, ByteCode, Parameter]	11202	3.645191
3	[Java, ByteCode, Method, Member]	10645	3.463940
4	[File, Git]	10563	3.437257
5	[Java, ByteCode, Bound, ParameterizedType]	6542	2.128802
6	[Java, ByteCode, Bound]	6316	2.055260
7	[Java, ByteCode, Member, Field]	2849	0.927080
8	[Java, ByteCode, Bound, WildcardType]	2723	0.886079
9	[Java, Value, ByteCode, Annotation]	2225	0.724027
10	[Java, ByteCode, Constructor, Method, Member]	1647	0.535943
11	[Xml, Element]	1534	0.499172
12	[Xml, Text]	1016	0.330612
13	[Java, ByteCode, Bound, TypeVariable]	989	0.321826
14	[Java, ByteCode, Method, Member, Lambda]	769	0.250237
15	[Type, File, Java, ByteCode, Class]	699	0.227458
16	[Type, File, Java, ByteCode, JavaType]	597	0.194267
17	[Type, File, Java, ByteCode, ResolvedDuplicate...	542	0.176370
18	[Java, ByteCode, Method, Member, GenericDeclar...	525	0.170838
19	[Java, Value, ByteCode, Primitive]	467	0.151964
20	[Author, Git, Person]	288	0.093717
21	[Committer, Git, Person]	242	0.078748
22	[Type, File, Java, ByteCode, Class, GenericDec...	215	0.069962
23	[Type, File, Java, ByteCode, ExternalType]	194	0.063129
24	[Type, File, Java, ByteCode, Interface]	167	0.054343
25	[Git, Tag]	165	0.053692
26	[Java, ByteCode, Bound, GenericArrayType]	145	0.047184
27	[Java, Value, ByteCode, Enum]	142	0.046208
28	[Maven, Dependency]	116	0.037747
29	[Value, Property]	109	0.035469

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>

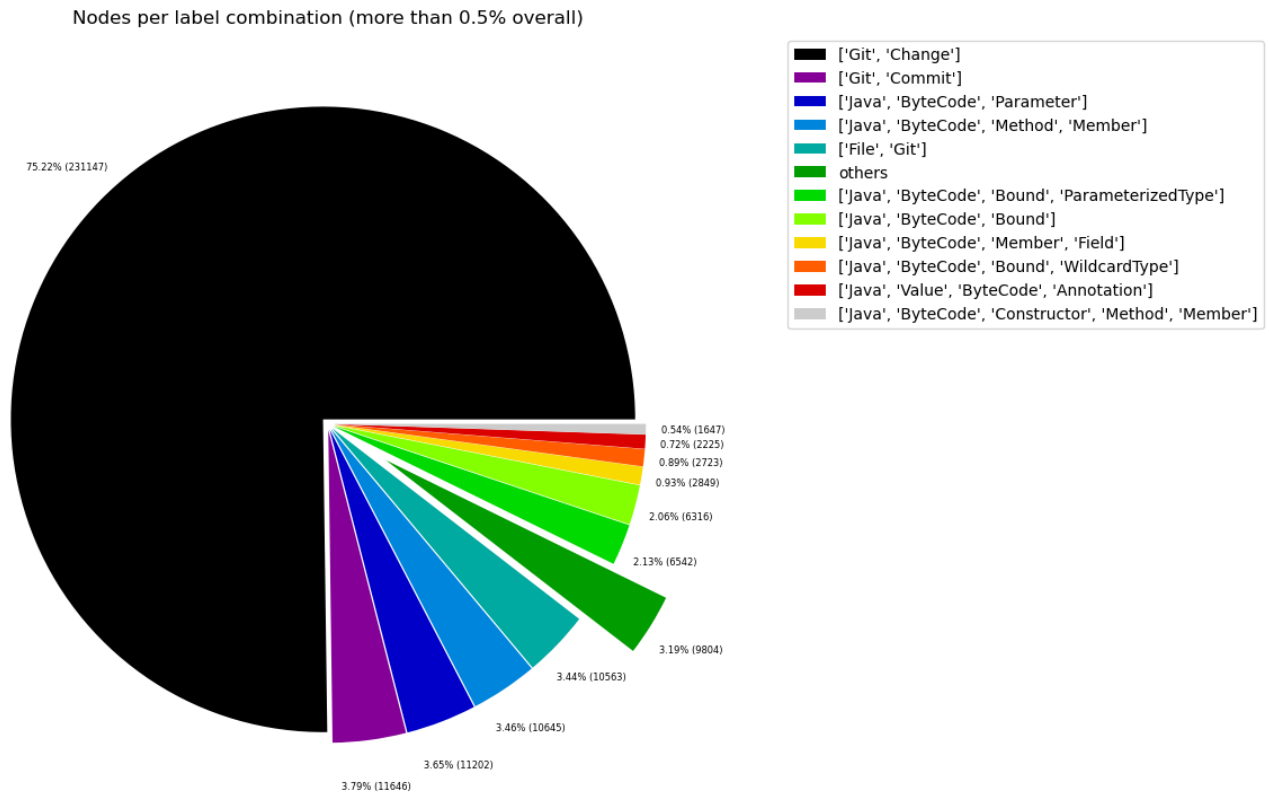


Table 1b - Lowest node count by label combination

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	0.000325
1	[Maven, Exclusion]	1	0.000325
2	[Repository, File, Git]	1	0.000325
3	[File, TS, Scan]	1	0.000325
4	[Java, ByteCode, Constructor, Method, Member, ...]	3	0.000976
5	[File, Xml, Maven, Pom, Document]	6	0.001952
6	[Type, File, Java, ByteCode, Void]	6	0.001952
7	[Java, ManifestSection]	6	0.001952
8	[File, Java, Manifest]	6	0.001952
9	[Artifact, File, Jar, Archive, Zip, Java]	6	0.001952
10	[File, Java, Properties]	8	0.002603
11	[File, Java, ServiceLoader]	9	0.002929
12	[Xml, Attribute]	12	0.003905
13	[Maven, ExecutionGoal]	14	0.004556
14	[Maven, PluginExecution]	14	0.004556
15	[Maven, Plugin]	16	0.005206
16	[Maven, Configuration]	16	0.005206
17	[jQAssistant, Rule, Concept]	19	0.006183
18	[File]	21	0.006834
19	[Type, File, Java, ByteCode, PrimitiveType]	21	0.006834
20	[Git, Branch]	24	0.007810
21	[Xml, Namespace]	24	0.007810
22	[Type, File, Java, ByteCode, Enum]	25	0.008135
23	[Java, Value, ByteCode, Class]	28	0.009111
24	[File, Directory]	39	0.012691
25	[Type, File, Java, ByteCode, Annotation]	40	0.013016
26	[Type, File, Java, ByteCode, ExternalType, Ext...]	65	0.021151
27	[Artifact, Maven]	69	0.022453
28	[Type, File, Java, ByteCode, GenericDeclaratio...]	80	0.026032
29	[Value, ManifestEntry]	91	0.029612

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.

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Nodes per label combination (less than 0.5% overall)

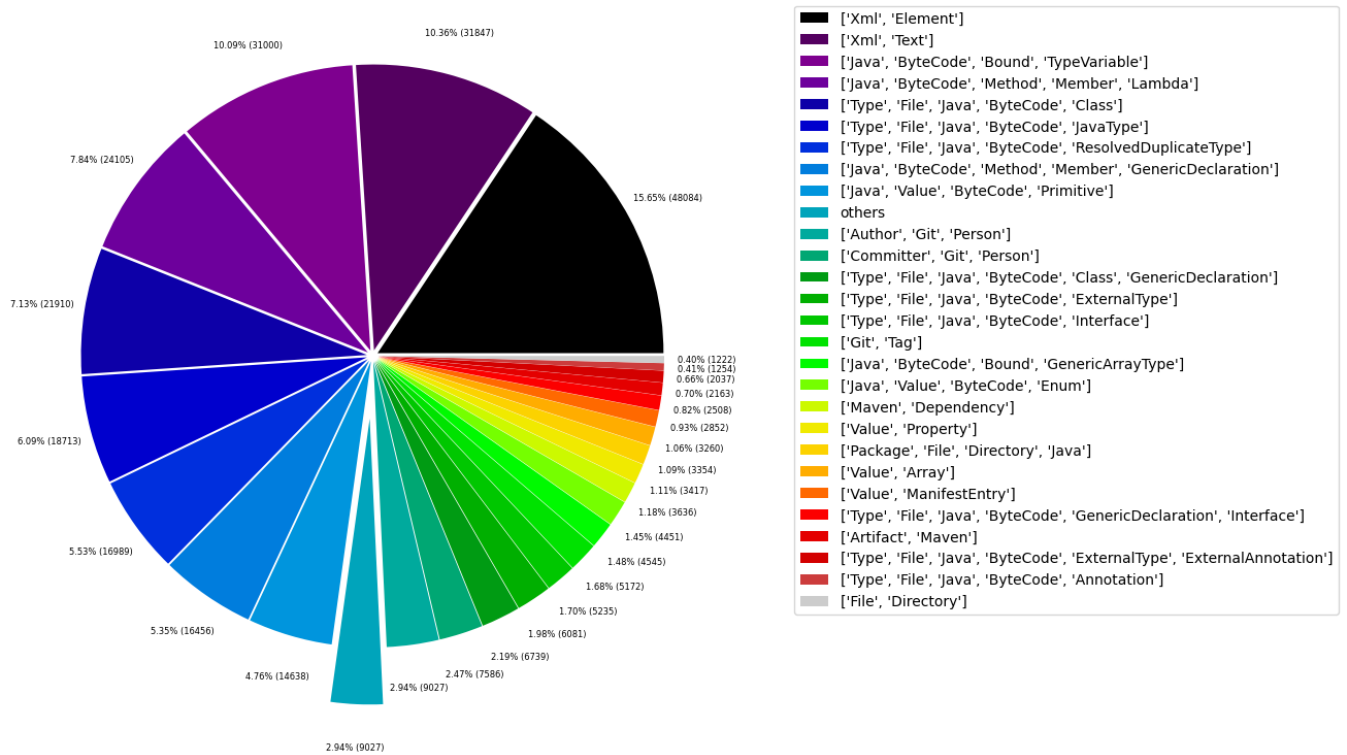


Table 1c - Highest node count by single label

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.

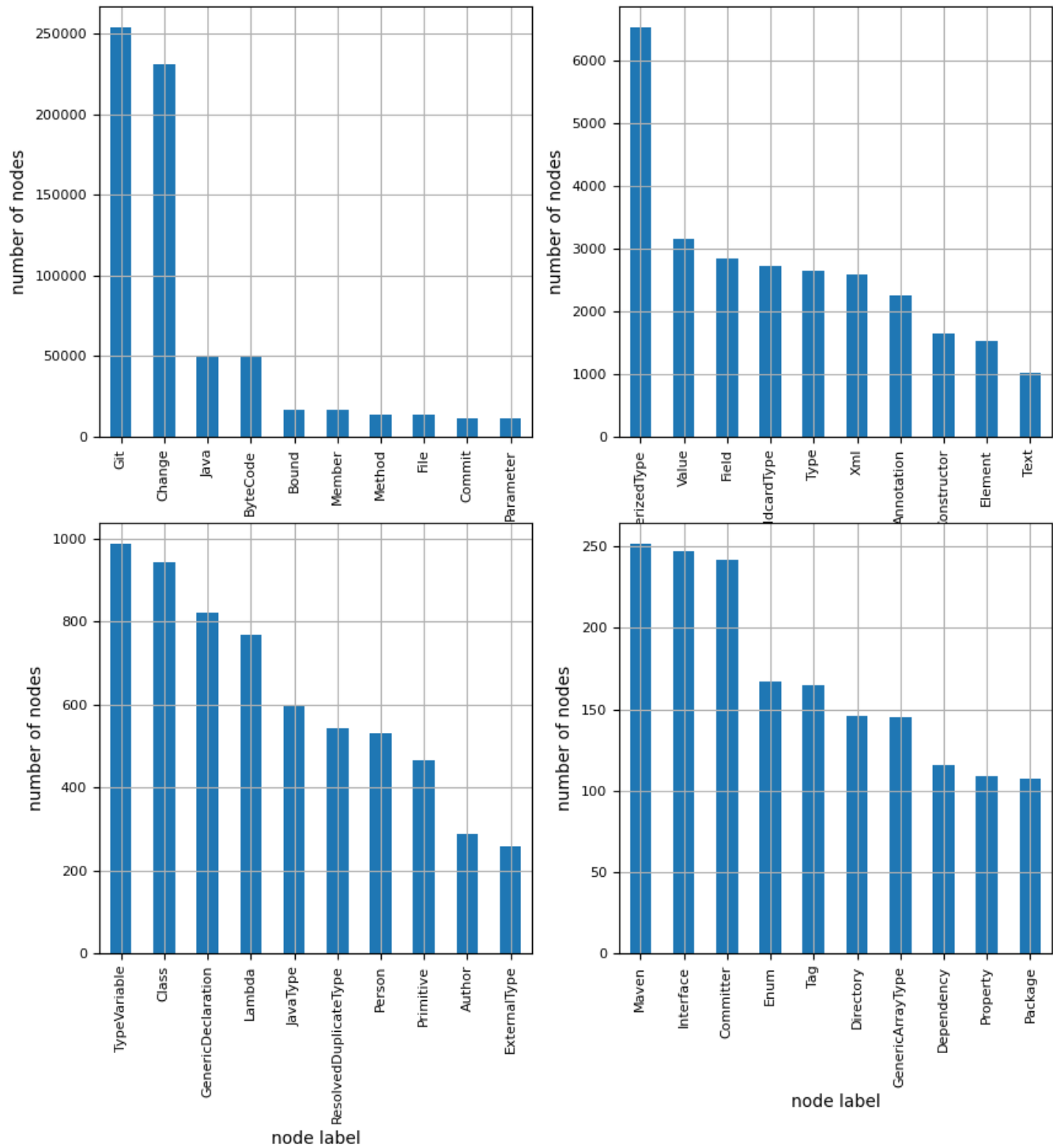
	nodeLabel	nodesWithThatLabel	nodesWithThatLabelPercent
0	Git	254076	82.677696
1	Change	231147	75.216476
2	Java	50010	16.273523
3	ByteCode	49868	16.227315
4	Bound	16715	5.439151
5	Member	16438	5.349014
6	Method	13589	4.421934
7	File	13418	4.366289
8	Commit	11646	3.789671
9	Parameter	11202	3.645191
10	ParameterizedType	6542	2.128802
11	Value	3166	1.030233
12	Field	2849	0.927080
13	WildcardType	2723	0.886079
14	Type	2651	0.862650
15	Xml	2592	0.843451
16	Annotation	2265	0.737043
17	Constructor	1650	0.536919
18	Element	1534	0.499172
19	Text	1016	0.330612
20	TypeVariable	989	0.321826
21	Class	942	0.306532
22	GenericDeclaration	823	0.267809
23	Lambda	769	0.250237
24	JavaType	597	0.194267
25	ResolvedDuplicateType	542	0.176370
26	Person	530	0.172465
27	Primitive	467	0.151964
28	Author	288	0.093717
29	ExternalType	259	0.084280
30	Maven	252	0.082002
31	Interface	247	0.080375
32	Committer	242	0.078748
33	Enum	167	0.054343
34	Tag	165	0.053692
35	Directory	146	0.047509
36	GenericArrayType	145	0.047184
37	Dependency	116	0.037747
38	Property	109	0.035469
39	Package	107	0.034818

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: 954053

	relationshipType	nodesWithThatRelationshipType	nodesWithThatRelationshipTypePercent
0	CONTAINS_CHANGE	231147	24.227899
1	MODIFIES	231147	24.227899
2	UPDATES	148091	15.522303
3	CREATES	57573	6.034570
4	DELETES	35338	3.703987
5	INVOKES	29732	3.116389
6	COMMITTED	23292	2.441374
7	OF_TYPE	17636	1.848535
8	DEPENDS_ON	17445	1.828515
9	DECLARES	16800	1.760908
10	OF_RAW_TYPE	15200	1.593203
11	HAS_PARENT	14156	1.483775
12	HAS	11902	1.247520
13	HAS_COMMIT	11646	1.220687
14	RETURNS	10643	1.115556
15	HAS_FILE	10563	1.107171
16	RENAMES	9855	1.032961
17	READS	7696	0.806664
18	HAS_ACTUAL_TYPE_ARGUMENT	7501	0.786225
19	HAS_NEW_NAME	6159	0.645562
20	OF_GENERIC_TYPE	5349	0.560661
21	RESOLVES_TO	3801	0.398406
22	SIMILAR	3419	0.358366
23	RETURNS_GENERIC	3253	0.340966
24	CONTAINS	3084	0.323252
25	WRITES	3066	0.321366
26	ANNOTATED_BY	2213	0.231958
27	HAS_FIRST_CHILD	1534	0.160788
28	HAS_LAST_CHILD	1534	0.160788
29	HAS_ELEMENT	1522	0.159530

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.

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Relationship types (more than 0.5% overall)

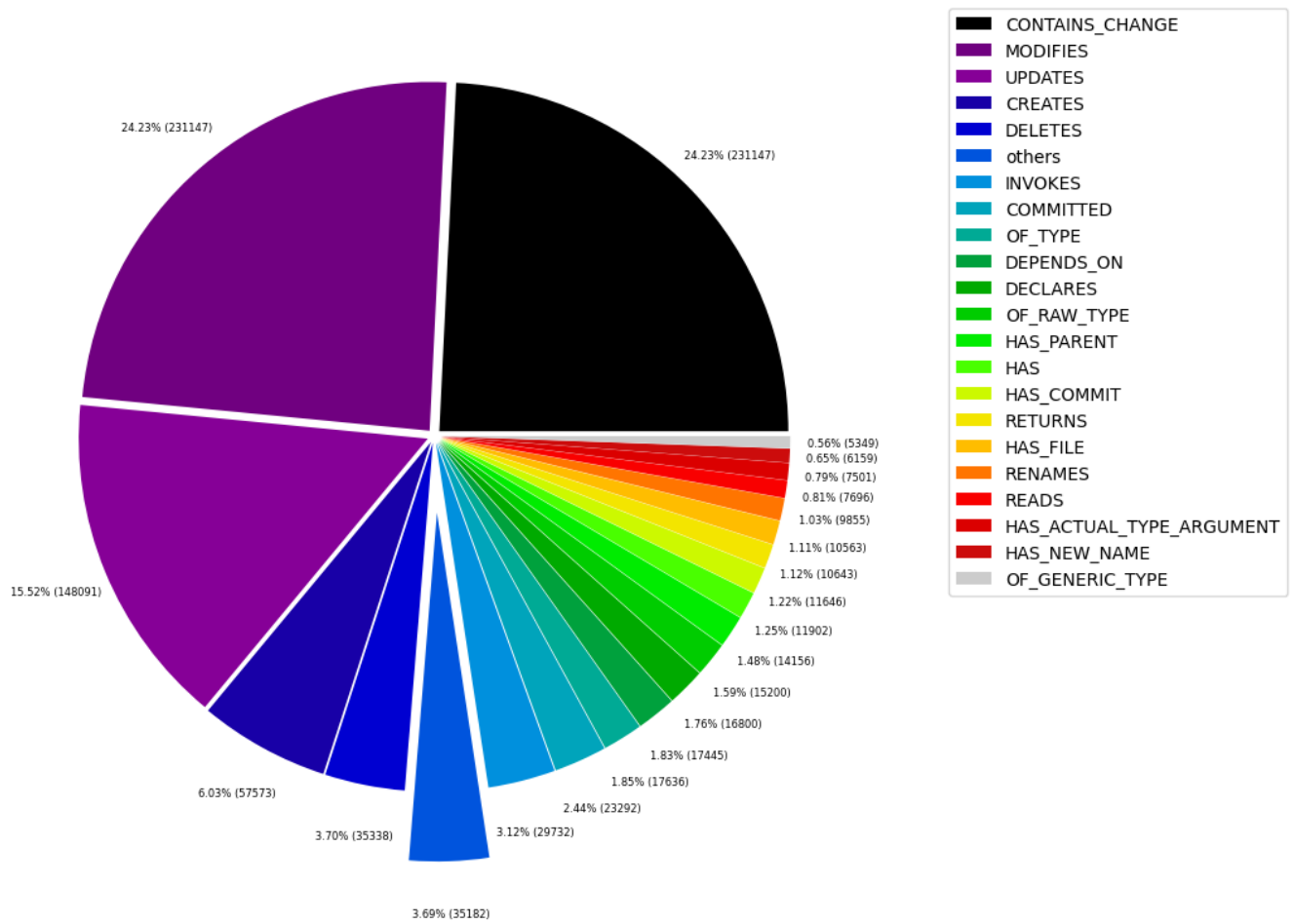


Table 2b - Lowest relationship count by type

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.

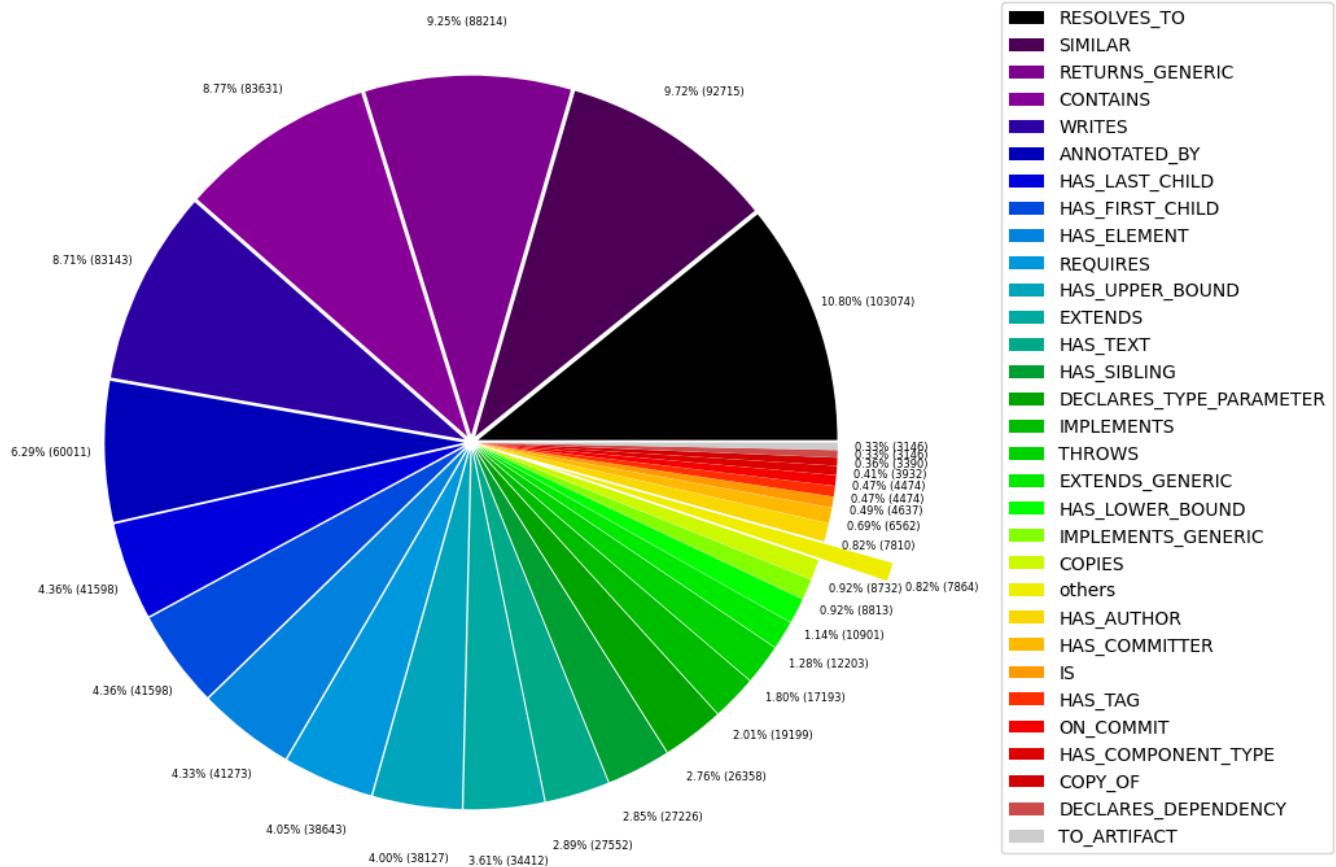
	relationshipType	nodesWithThatRelationshipType	nodesWithThatRelationshipTypePercent
0	EXCLUDES	1	0.000105
1	THROWS_GENERIC	5	0.000524
2	DESCRIBES	6	0.000629
3	HAS_ROOT_ELEMENT	7	0.000734
4	OF_NAMESPACE	12	0.001258
5	HAS_ATTRIBUTE	12	0.001258
6	HAS_GOAL	14	0.001467
7	HAS_EXECUTION	14	0.001467
8	USES_PLUGIN	16	0.001677
9	IS_ARTIFACT	16	0.001677
10	HAS_CONFIGURATION	16	0.001677
11	REQUIRES_TYPE_PARAMETER	17	0.001782
12	INCLUDES_CONCEPT	19	0.001992
13	HAS_BRANCH	24	0.002516
14	DECLARES_NAMESPACE	24	0.002516
15	HAS_HEAD	25	0.002620
16	REQUIRES_CONCEPT	28	0.002935
17	HAS_DEFAULT	34	0.003564
18	DECLARES_DEPENDENCY	116	0.012159
19	TO_ARTIFACT	116	0.012159
20	COPY_OF	125	0.013102
21	HAS_COMPONENT_TYPE	145	0.015198
22	ON_COMMIT	165	0.017295
23	HAS_TAG	165	0.017295
24	IS	171	0.017924
25	HAS_COMMITTER	242	0.025365
26	HAS_AUTHOR	288	0.030187
27	COPIES	322	0.033751
28	IMPLEMENTS_GENERIC	325	0.034065
29	HAS_LOWER_BOUND	402	0.042136

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	numberOfNodesWithS
0	[Git, Commit]	CONTAINS_CHANGE	[Git, Change]	231147	11646	
1	[Git, Change]	MODIFIES	[File, Git]	231147	231147	
2	[Git, Change]	UPDATES	[File, Git]	148091	231147	
3	[Git, Change]	CREATES	[File, Git]	57573	231147	
4	[Git, Change]	DELETES	[File, Git]	35338	231147	
5	[Java, ByteCode, Method, Member]	INVOKES	[Java, ByteCode, Method, Member]	18206	10558	
6	[Git, Commit]	HAS_PARENT	[Git, Commit]	14150	11646	
7	[Repository, File, Git]	HAS_COMMIT	[Git, Commit]	11646	1	
8	[Author, Git, Person]	COMMITTED	[Git, Commit]	11646	288	
9	[Committer, Git, Person]	COMMITTED	[Git, Commit]	11646	242	
10	[Repository, File, Git]	HAS_FILE	[File, Git]	10563	1	
11	[Git, Change]	RENAMES	[File, Git]	9855	231147	
12	[Java, ByteCode, Method, Member]	HAS	[Java, ByteCode, Parameter]	7306	10558	
13	[Java, ByteCode, Method, Member]	READS	[Java, ByteCode, Member, Field]	6918	10558	
14	[File, Git]	HAS_NEW_NAME	[File, Git]	6159	10563	
15	[Java, ByteCode, Parameter]	OF_TYPE	[Type, File, Java, ByteCode, JavaType]	5730	11202	
16	[Java, ByteCode, Bound]	OF_RAW_TYPE	[Type, File, Java, ByteCode, JavaType]	3218	6316	
17	[Java, ByteCode, Bound, ParameterizedType]	OF_RAW_TYPE	[Type, File, Java, ByteCode, JavaType]	2779	6542	
18	[Java, ByteCode, Bound, ParameterizedType]	HAS_ACTUAL_TYPE_ARGUMENT	[Java, ByteCode, Bound, WildcardType]	2723	6542	
19	[Java, ByteCode, Parameter]	OF_GENERIC_TYPE	[Java, ByteCode, Bound, ParameterizedType]	2435	11202	
20	[Java, ByteCode, Bound, ParameterizedType]	HAS_ACTUAL_TYPE_ARGUMENT	[Java, ByteCode, Bound, TypeVariable]	2230	6542	
21	[Java, ByteCode, Constructor, Method, Member]	WRITES	[Java, ByteCode, Member, Field]	1971	1647	
22	[Java, ByteCode, Method, Member]	RETURNS	[Type, File, Java, ByteCode, JavaType]	1892	10558	
23	[Java, Value, ByteCode, Annotation]	OF_TYPE	[Type, File, Java, ByteCode, ExternalType, Ext...	1842	2225	
24	[Java, ByteCode, Parameter]	OF_GENERIC_TYPE	[Java, ByteCode, Bound]	1819	11202	
25	[Java, ByteCode, Constructor, Method, Member]	INVOKES	[Java, ByteCode, Constructor, Method, Member]	1745	1647	
26	[Java, ByteCode, Constructor, Method, Member]	HAS	[Java, ByteCode, Parameter]	1710	1647	
27	[Java, ByteCode, Method, Member]	INVOKES	[Java, ByteCode, Constructor, Method, Member]	1703	10558	
28	[Java, ByteCode, Parameter]	ANNOTATED_BY	[Java, Value, ByteCode, Annotation]	1594	11202	
29	[Java, ByteCode, Constructor, Method, Member]	INVOKES	[Java, ByteCode, Method, Member]	1539	1647	

Graph Density

```
total_number_of_nodes (vertices): 307309
total_number_of_relationships (edges): 954053
-> total directed graph density: 1.0102371986310501e-05
-> total directed graph density in percent: 0.0010102371986310502
```