

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: 307131

	nodeLabels	nodesWithThatLabels	nodesWithThatLabelsPercent
0	[Git, Change]	231027	75.220997
1	[Git, Commit]	11618	3.782751
2	[Java, ByteCode, Parameter]	11202	3.647304
3	[Java, ByteCode, Method, Member]	10635	3.462692
4	[File, Git]	10547	3.434040
5	[Java, ByteCode, Bound, ParameterizedType]	6542	2.130036
6	[Java, ByteCode, Bound]	6316	2.056451
7	[Java, ByteCode, Member, Field]	2849	0.927617
8	[Java, ByteCode, Bound, WildcardType]	2723	0.886592
9	[Java, Value, ByteCode, Annotation]	2225	0.724447
10	[Java, ByteCode, Constructor, Method, Member]	1643	0.534951
11	[Xml, Element]	1534	0.499461
12	[Xml, Text]	1016	0.330803
13	[Java, ByteCode, Bound, TypeVariable]	989	0.322012
14	[Java, ByteCode, Method, Member, Lambda]	769	0.250382
15	[Type, File, Java, ByteCode, Class]	699	0.227590
16	[Type, File, Java, ByteCode, JavaType]	597	0.194380
17	[Type, File, Java, ByteCode, ResolvedDuplicate...	542	0.176472
18	[Java, ByteCode, Method, Member, GenericDeclar...	525	0.170937
19	[Java, Value, ByteCode, Primitive]	467	0.152052
20	[Author, Git, Person]	288	0.093771
21	[Committer, Git, Person]	242	0.078794
22	[Type, File, Java, ByteCode, Class, GenericDec...	215	0.070003
23	[Type, File, Java, ByteCode, ExternalType]	194	0.063165
24	[Type, File, Java, ByteCode, Interface]	167	0.054374
25	[Git, Tag]	165	0.053723
26	[Java, ByteCode, Bound, GenericArrayType]	145	0.047211
27	[Java, Value, ByteCode, Enum]	142	0.046234
28	[Maven, Dependency]	116	0.037769
29	[Value, Property]	109	0.035490

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)

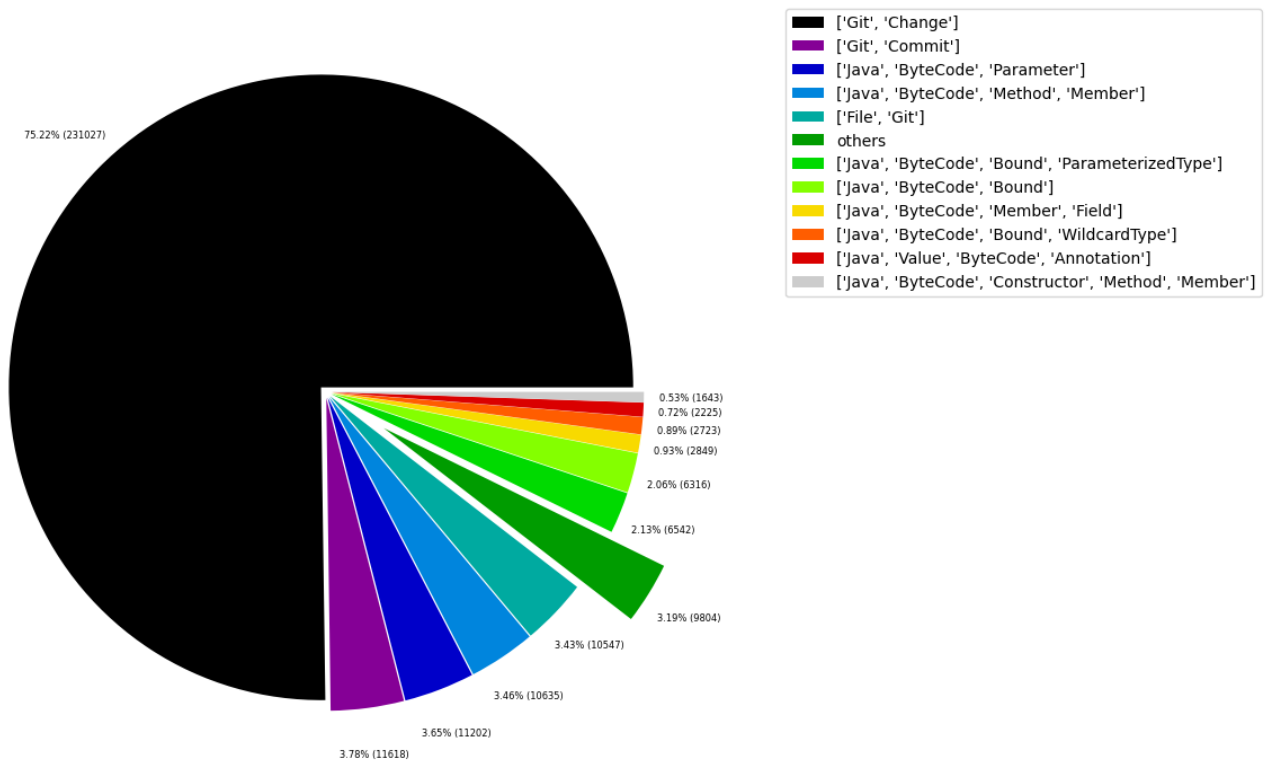


Table 1b - Lowest node count by label combination

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	0.000326
1	[Maven, Exclusion]	1	0.000326
2	[Repository, File, Git]	1	0.000326
3	[File, TS, Scan]	1	0.000326
4	[Java, ByteCode, Constructor, Method, Member, ...]	3	0.000977
5	[File, Xml, Maven, Pom, Document]	6	0.001954
6	[Type, File, Java, ByteCode, Void]	6	0.001954
7	[Java, ManifestSection]	6	0.001954
8	[File, Java, Manifest]	6	0.001954
9	[Artifact, File, Jar, Archive, Zip, Java]	6	0.001954
10	[File, Java, Properties]	8	0.002605
11	[File, Java, ServiceLoader]	9	0.002930
12	[Xml, Attribute]	12	0.003907
13	[Maven, ExecutionGoal]	14	0.004558
14	[Maven, PluginExecution]	14	0.004558
15	[Maven, Plugin]	16	0.005210
16	[Maven, Configuration]	16	0.005210
17	[jQAssistant, Rule, Concept]	19	0.006186
18	[File]	21	0.006837
19	[Type, File, Java, ByteCode, PrimitiveType]	21	0.006837
20	[Git, Branch]	24	0.007814
21	[Xml, Namespace]	24	0.007814
22	[Type, File, Java, ByteCode, Enum]	25	0.008140
23	[Java, Value, ByteCode, Class]	28	0.009117
24	[File, Directory]	39	0.012698
25	[Type, File, Java, ByteCode, Annotation]	40	0.013024
26	[Type, File, Java, ByteCode, ExternalType, Ext...]	65	0.021164
27	[Artifact, Maven]	69	0.022466
28	[Type, File, Java, ByteCode, GenericDeclaratio...]	80	0.026048
29	[Value, ManifestEntry]	91	0.029629

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)

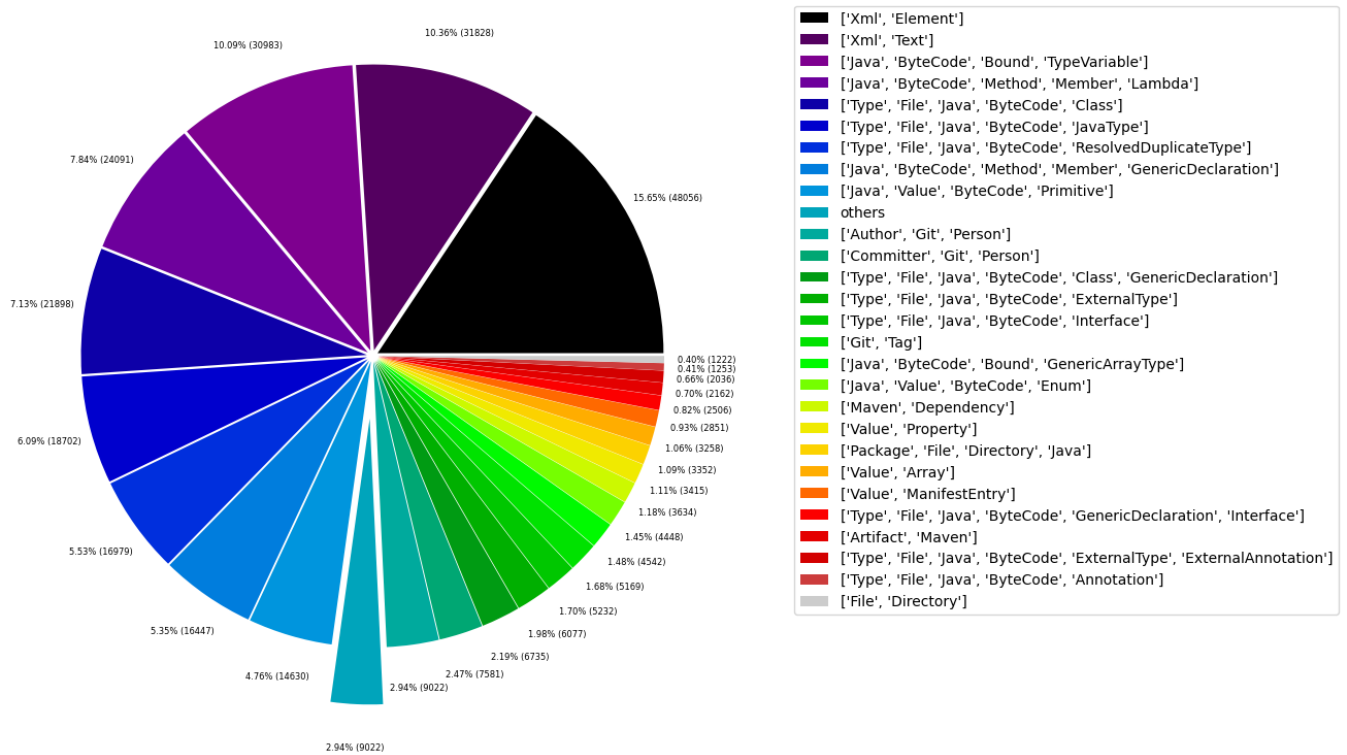


Table 1c - Highest node count by single label

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.

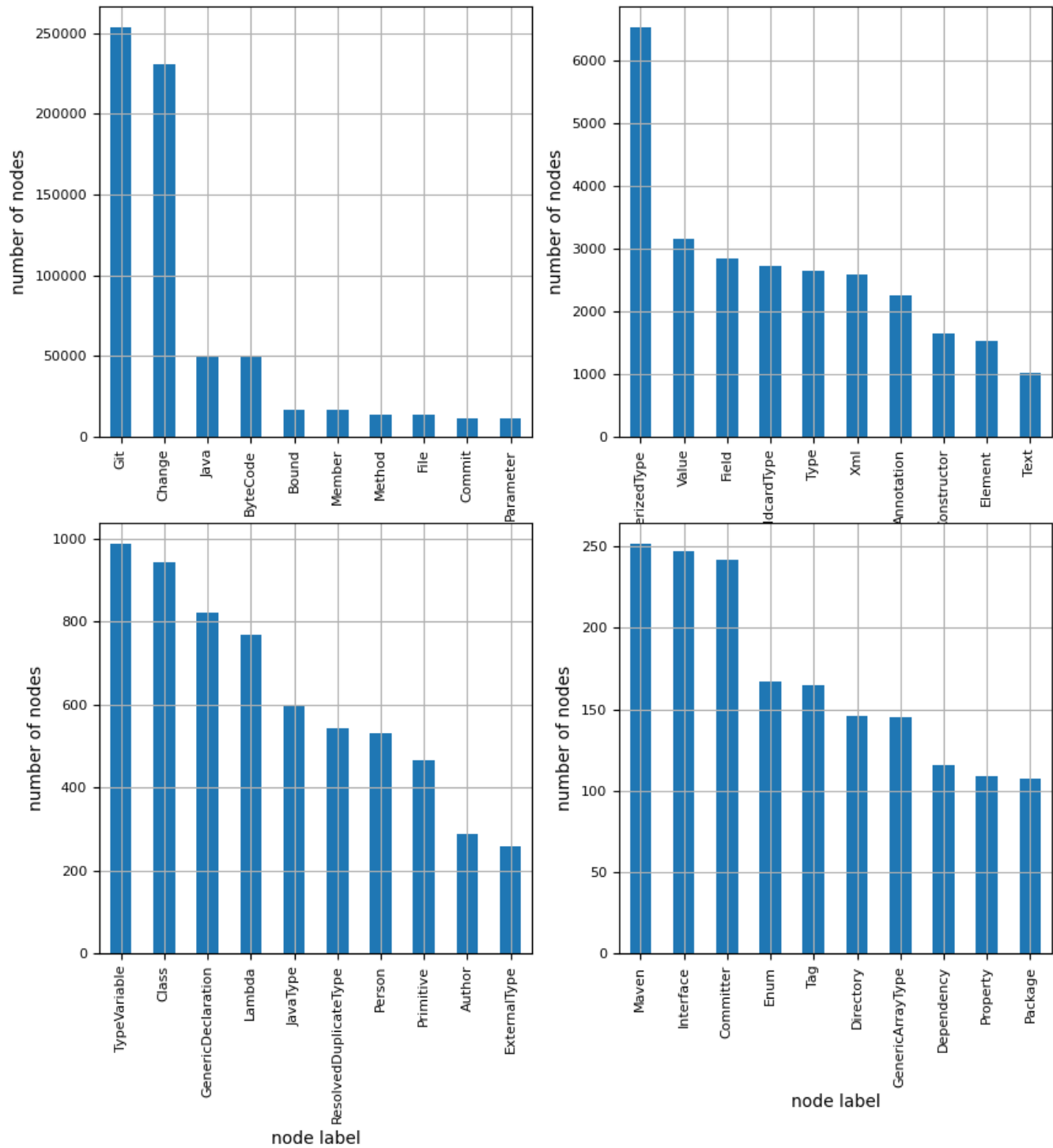
	nodeLabel	nodesWithThatLabel	nodesWithThatLabelPercent
0	Git	253912	82.672215
1	Change	231027	75.220997
2	Java	49996	16.278396
3	ByteCode	49854	16.232162
4	Bound	16715	5.442303
5	Member	16424	5.347555
6	Method	13575	4.419938
7	File	13402	4.363610
8	Commit	11618	3.782751
9	Parameter	11202	3.647304
10	ParameterizedType	6542	2.130036
11	Value	3166	1.030830
12	Field	2849	0.927617
13	WildcardType	2723	0.886592
14	Type	2651	0.863150
15	Xml	2592	0.843940
16	Annotation	2265	0.737470
17	Constructor	1646	0.535928
18	Element	1534	0.499461
19	Text	1016	0.330803
20	TypeVariable	989	0.322012
21	Class	942	0.306710
22	GenericDeclaration	823	0.267964
23	Lambda	769	0.250382
24	JavaType	597	0.194380
25	ResolvedDuplicateType	542	0.176472
26	Person	530	0.172565
27	Primitive	467	0.152052
28	Author	288	0.093771
29	ExternalType	259	0.084329
30	Maven	252	0.082050
31	Interface	247	0.080422
32	Committer	242	0.078794
33	Enum	167	0.054374
34	Tag	165	0.053723
35	Directory	146	0.047537
36	GenericArrayType	145	0.047211
37	Dependency	116	0.037769
38	Property	109	0.035490
39	Package	107	0.034839

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: 953504

	relationshipType	nodesWithThatRelationshipType	nodesWithThatRelationshipTypePercent
0	CONTAINS_CHANGE	231027	24.229264
1	MODIFIES	231027	24.229264
2	UPDATES	148004	15.522116
3	CREATES	57540	6.034584
4	DELETES	35338	3.706120
5	INVOKES	29706	3.115456
6	COMMITTED	23236	2.436906
7	OF_TYPE	17636	1.849599
8	DEPENDS_ON	17445	1.829568
9	DECLARES	16786	1.760454
10	OF_RAW_TYPE	15200	1.594120
11	HAS_PARENT	14122	1.481064
12	HAS	11902	1.248238
13	HAS_COMMIT	11618	1.218453
14	RETURNS	10643	1.116199
15	HAS_FILE	10547	1.106131
16	RENAMES	9855	1.033556
17	READS	7696	0.807128
18	HAS_ACTUAL_TYPE_ARGUMENT	7501	0.786677
19	HAS_NEW_NAME	6159	0.645933
20	OF_GENERIC_TYPE	5349	0.560983
21	RESOLVES_TO	3786	0.397062
22	SIMILAR	3419	0.358572
23	RETURNS_GENERIC	3253	0.341163
24	CONTAINS	3084	0.323439
25	WRITES	3066	0.321551
26	ANNOTATED_BY	2213	0.232091
27	HAS_FIRST_CHILD	1534	0.160880
28	HAS_LAST_CHILD	1534	0.160880
29	HAS_ELEMENT	1522	0.159622

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)

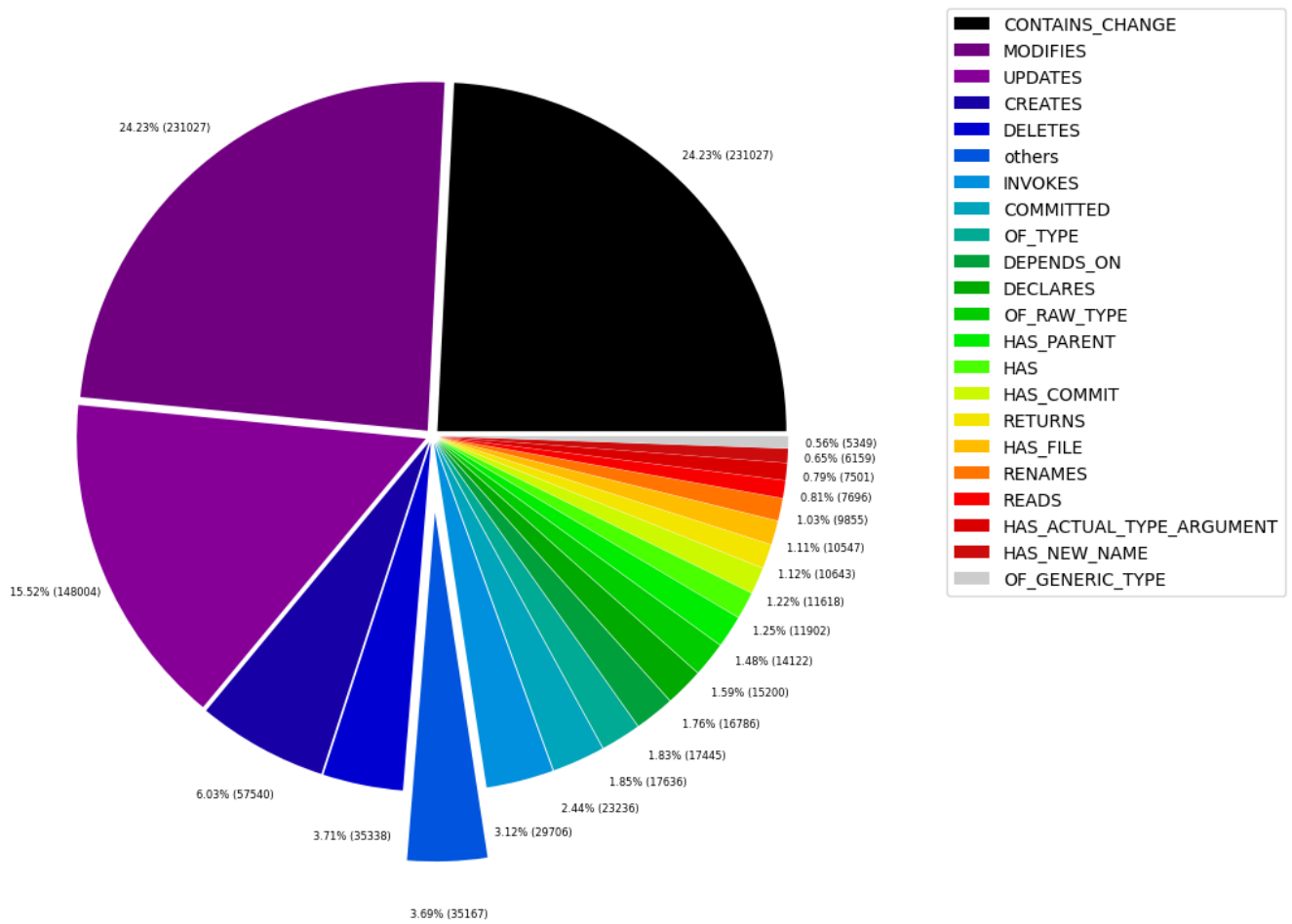


Table 2b - Lowest relationship count by type

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.

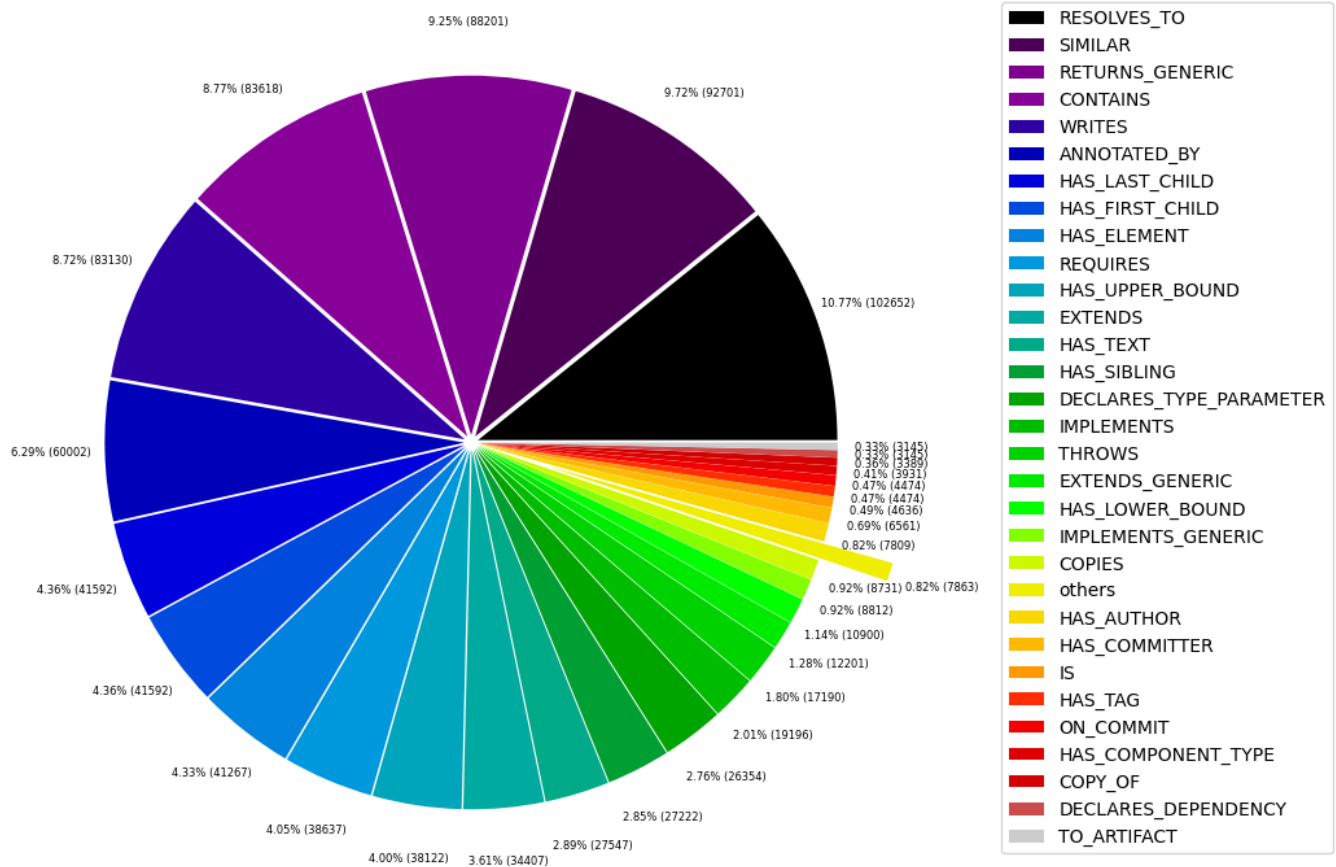
	relationshipType	nodesWithThatRelationshipType	nodesWithThatRelationshipTypePercent
0	EXCLUDES	1	0.000105
1	THROWS_GENERIC	5	0.000524
2	DESCRIBES	6	0.000629
3	HAS_ROOT_ELEMENT	7	0.000734
4	OF_NAMESPACE	12	0.001259
5	HAS_ATTRIBUTE	12	0.001259
6	HAS_GOAL	14	0.001468
7	HAS_EXECUTION	14	0.001468
8	USES_PLUGIN	16	0.001678
9	IS_ARTIFACT	16	0.001678
10	HAS_CONFIGURATION	16	0.001678
11	REQUIRES_TYPE_PARAMETER	17	0.001783
12	INCLUDES_CONCEPT	19	0.001993
13	HAS_BRANCH	24	0.002517
14	DECLARES_NAMESPACE	24	0.002517
15	HAS_HEAD	25	0.002622
16	REQUIRES_CONCEPT	28	0.002937
17	HAS_DEFAULT	34	0.003566
18	DECLARES_DEPENDENCY	116	0.012166
19	TO_ARTIFACT	116	0.012166
20	COPY_OF	125	0.013110
21	HAS_COMPONENT_TYPE	145	0.015207
22	ON_COMMIT	165	0.017305
23	HAS_TAG	165	0.017305
24	IS	171	0.017934
25	HAS_COMMITTER	242	0.025380
26	HAS_AUTHOR	288	0.030204
27	COPIES	322	0.033770
28	IMPLEMENTS_GENERIC	325	0.034085
29	HAS_LOWER_BOUND	402	0.042160

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]	231027	11618	
1	[Git, Change]	MODIFIES	[File, Git]	231027	231027	
2	[Git, Change]	UPDATES	[File, Git]	148004	231027	
3	[Git, Change]	CREATES	[File, Git]	57540	231027	
4	[Git, Change]	DELETES	[File, Git]	35338	231027	
5	[Java, ByteCode, Method, Member]	INVOKES	[Java, ByteCode, Method, Member]	18198	10548	
6	[Git, Commit]	HAS_PARENT	[Git, Commit]	14116	11618	
7	[Repository, File, Git]	HAS_COMMIT	[Git, Commit]	11618	1	
8	[Author, Git, Person]	COMMITTED	[Git, Commit]	11618	288	
9	[Committer, Git, Person]	COMMITTED	[Git, Commit]	11618	242	
10	[Repository, File, Git]	HAS_FILE	[File, Git]	10547	1	
11	[Git, Change]	RENAMES	[File, Git]	9855	231027	
12	[Java, ByteCode, Method, Member]	HAS	[Java, ByteCode, Parameter]	7306	10548	
13	[Java, ByteCode, Method, Member]	READS	[Java, ByteCode, Member, Field]	6918	10548	
14	[File, Git]	HAS_NEW_NAME	[File, Git]	6159	10547	
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	1643	
22	[Java, ByteCode, Method, Member]	RETURNS	[Type, File, Java, ByteCode, JavaType]	1892	10548	
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]	1735	1643	
26	[Java, ByteCode, Constructor, Method, Member]	HAS	[Java, ByteCode, Parameter]	1710	1643	
27	[Java, ByteCode, Method, Member]	INVOKES	[Java, ByteCode, Constructor, Method, Member]	1697	10548	
28	[Java, ByteCode, Parameter]	ANNOTATED_BY	[Java, Value, ByteCode, Annotation]	1594	11202	
29	[Java, ByteCode, Constructor, Method, Member]	INVOKES	[Java, ByteCode, Method, Member]	1539	1643	

Graph Density

```
total_number_of_nodes (vertices): 307131
total_number_of_relationships (edges): 953504
-> total directed graph density: 1.0108265158186446e-05
-> total directed graph density in percent: 0.0010108265158186446
```