

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: 307321

	nodeLabels	nodesWithThatLabels	nodesWithThatLabelsPercent
0	[Git, Change]	231145	75.212888
1	[Git, Commit]	11644	3.788872
2	[Java, ByteCode, Parameter]	11202	3.645049
3	[Java, ByteCode, Method, Member]	10663	3.469662
4	[File, Git]	10563	3.437123
5	[Java, ByteCode, Bound, ParameterizedType]	6542	2.128719
6	[Java, ByteCode, Bound]	6316	2.055180
7	[Java, ByteCode, Member, Field]	2847	0.926393
8	[Java, ByteCode, Bound, WildcardType]	2723	0.886044
9	[Java, Value, ByteCode, Annotation]	2225	0.723999
10	[Java, ByteCode, Constructor, Method, Member]	1647	0.535922
11	[Xml, Element]	1534	0.499152
12	[Xml, Text]	1016	0.330599
13	[Java, ByteCode, Bound, TypeVariable]	989	0.321813
14	[Java, ByteCode, Method, Member, Lambda]	769	0.250227
15	[Type, File, Java, ByteCode, Class]	699	0.227449
16	[Type, File, Java, ByteCode, JavaType]	597	0.194259
17	[Type, File, Java, ByteCode, ResolvedDuplicate...	542	0.176363
18	[Java, ByteCode, Method, Member, GenericDeclar...	525	0.170831
19	[Java, Value, ByteCode, Primitive]	467	0.151958
20	[Author, Git, Person]	288	0.093713
21	[Committer, Git, Person]	242	0.078745
22	[Type, File, Java, ByteCode, Class, GenericDec...	215	0.069959
23	[Type, File, Java, ByteCode, ExternalType]	194	0.063126
24	[Type, File, Java, ByteCode, Interface]	167	0.054341
25	[Git, Tag]	165	0.053690
26	[Java, ByteCode, Bound, GenericArrayType]	145	0.047182
27	[Java, Value, ByteCode, Enum]	142	0.046206
28	[Maven, Dependency]	116	0.037746
29	[Value, Property]	109	0.035468

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>

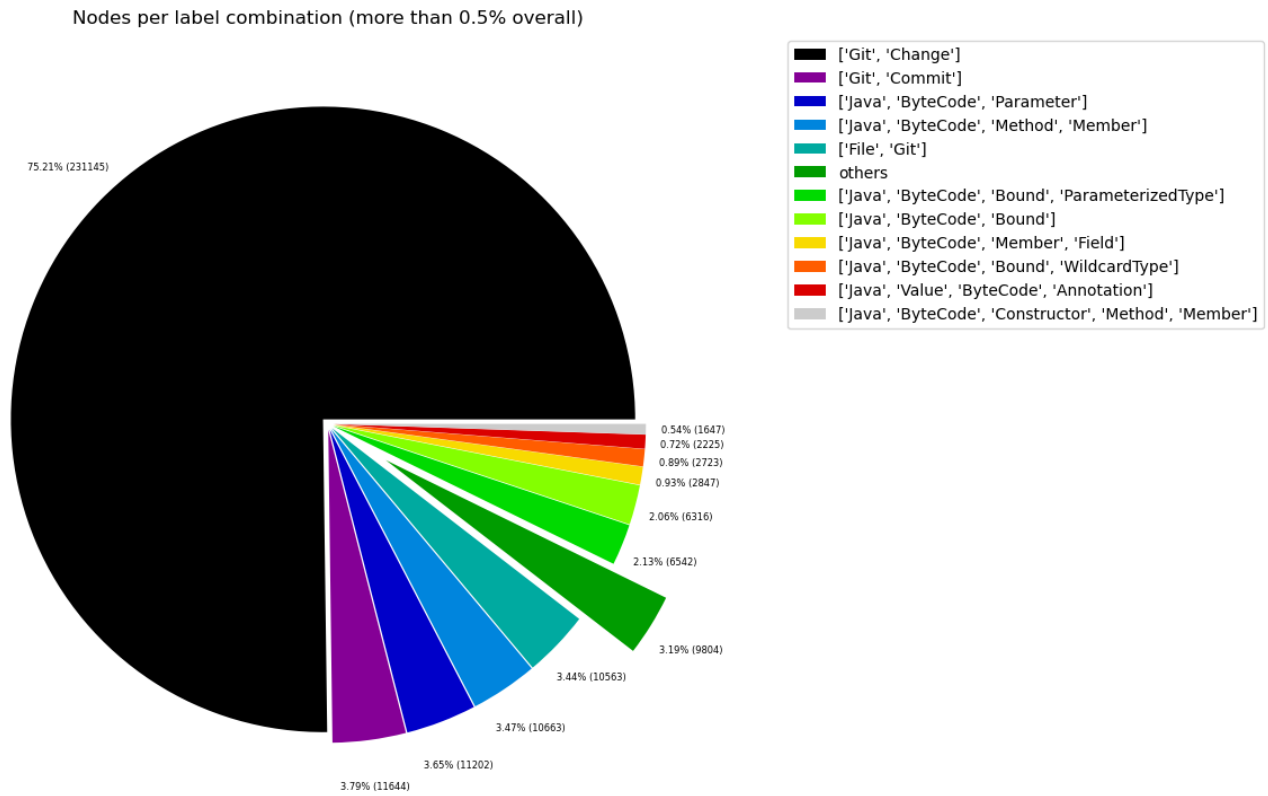


Table 1b - Lowest node count by label combination

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	0.004555
14	[Maven, PluginExecution]	14	0.004555
15	[Maven, Plugin]	16	0.005206
16	[Maven, Configuration]	16	0.005206
17	[jQAssistant, Rule, Concept]	19	0.006182
18	[File]	21	0.006833
19	[Type, File, Java, ByteCode, PrimitiveType]	21	0.006833
20	[Git, Branch]	24	0.007809
21	[Xml, Namespace]	24	0.007809
22	[Type, File, Java, ByteCode, Enum]	25	0.008135
23	[Java, Value, ByteCode, Class]	28	0.009111
24	[File, Directory]	39	0.012690
25	[Type, File, Java, ByteCode, Annotation]	40	0.013016
26	[Type, File, Java, ByteCode, ExternalType, Ext...]	65	0.021151
27	[Artifact, Maven]	69	0.022452
28	[Type, File, Java, ByteCode, GenericDeclaratio...]	80	0.026031
29	[Value, ManifestEntry]	91	0.029611

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)

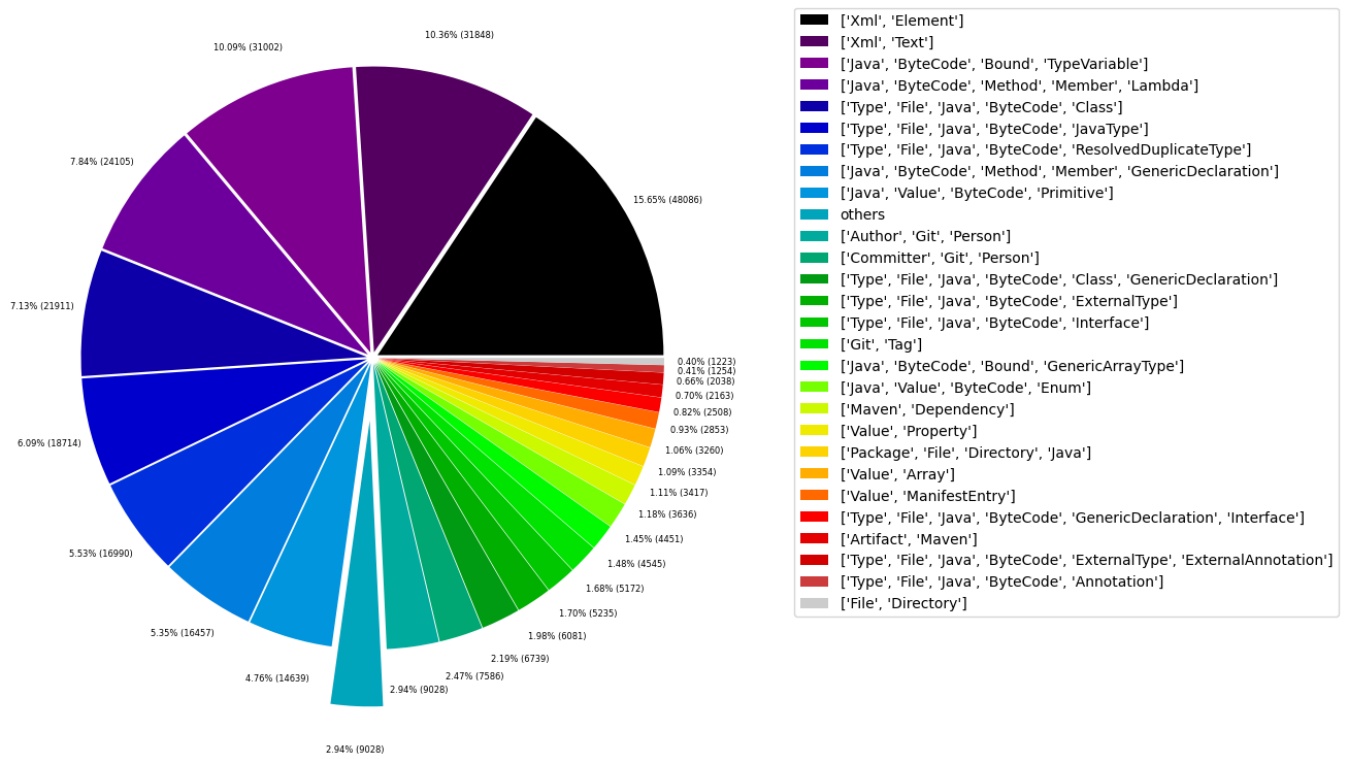


Table 1c - Highest node count by single label

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.

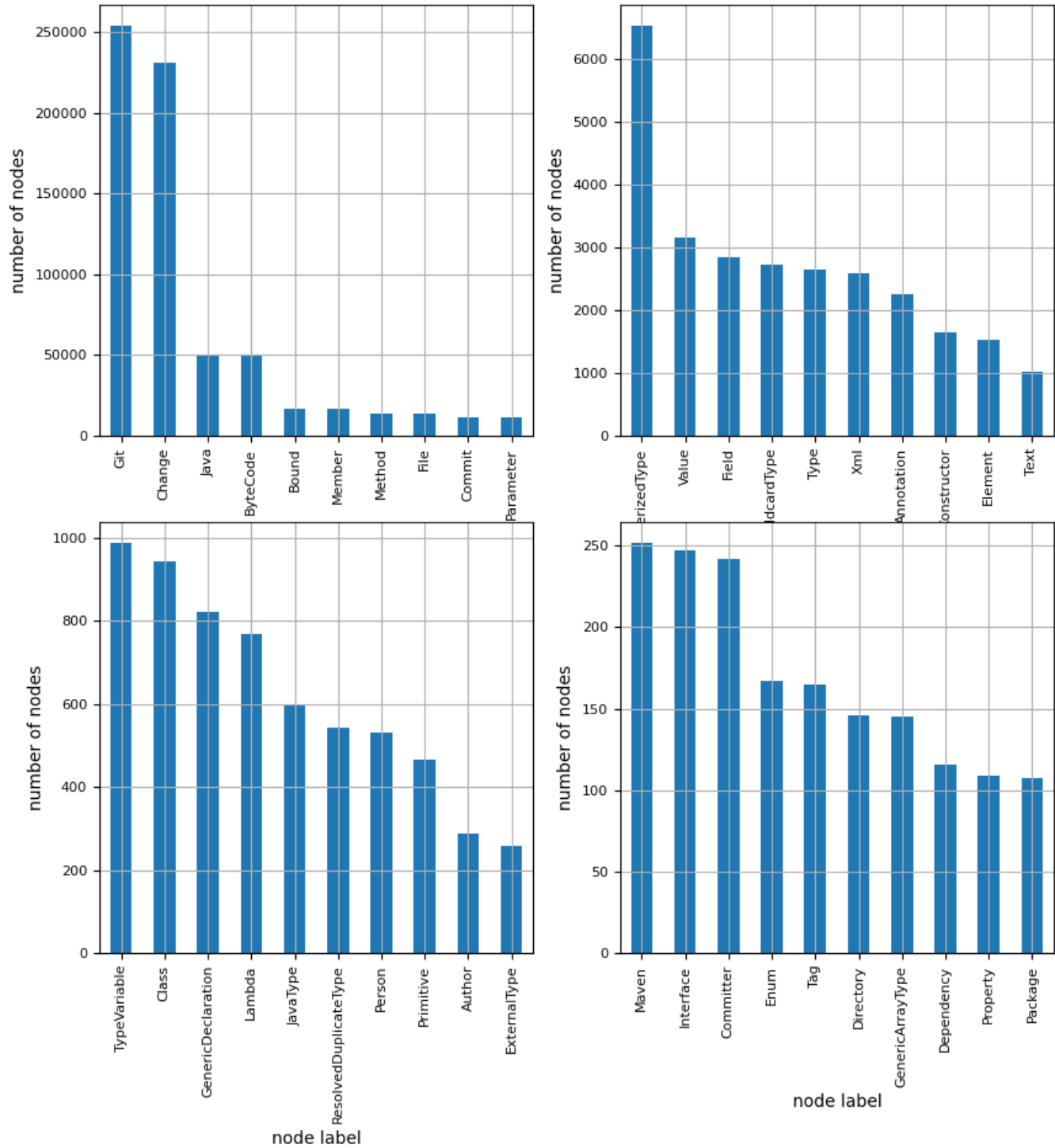
	nodeLabel	nodesWithThatLabel	nodesWithThatLabelPercent
0	Git	254072	82.673166
1	Change	231145	75.212888
2	Java	50026	16.278094
3	ByteCode	49884	16.231888
4	Bound	16715	5.438938
5	Member	16454	5.354011
6	Method	13607	4.427618
7	File	13418	4.366119
8	Commit	11644	3.788872
9	Parameter	11202	3.645049
10	ParameterizedType	6542	2.128719
11	Value	3166	1.030193
12	Field	2847	0.926393
13	WildcardType	2723	0.886044
14	Type	2651	0.862616
15	Xml	2592	0.843418
16	Annotation	2265	0.737014
17	Constructor	1650	0.536898
18	Element	1534	0.499152
19	Text	1016	0.330599
20	TypeVariable	989	0.321813
21	Class	942	0.306520
22	GenericDeclaration	823	0.267798
23	Lambda	769	0.250227
24	JavaType	597	0.194259
25	ResolvedDuplicateType	542	0.176363
26	Person	530	0.172458
27	Primitive	467	0.151958
28	Author	288	0.093713
29	ExternalType	259	0.084277
30	Maven	252	0.081999
31	Interface	247	0.080372
32	Committer	242	0.078745
33	Enum	167	0.054341
34	Tag	165	0.053690
35	Directory	146	0.047507
36	GenericArrayType	145	0.047182
37	Dependency	116	0.037746
38	Property	109	0.035468
39	Package	107	0.034817

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: 954037

	relationshipType	nodesWithThatRelationshipType	nodesWithThatRelationshipTypePercent
0	CONTAINS_CHANGE	231145	24.228096
1	MODIFIES	231145	24.228096
2	UPDATES	148089	15.522354
3	CREATES	57573	6.034672
4	DELETES	35338	3.704049
5	INVOKES	29722	3.115393
6	COMMITTED	23288	2.440995
7	OF_TYPE	17636	1.848566
8	DEPENDS_ON	17445	1.828545
9	DECLARES	16816	1.762615
10	OF_RAW_TYPE	15200	1.593230
11	HAS_PARENT	14153	1.483485
12	HAS	11902	1.247541
13	HAS_COMMIT	11644	1.220498
14	RETURNS	10643	1.115575
15	HAS_FILE	10563	1.107190
16	RENAMES	9855	1.032979
17	READS	7695	0.806572
18	HAS_ACTUAL_TYPE_ARGUMENT	7501	0.786238
19	HAS_NEW_NAME	6159	0.645572
20	OF_GENERIC_TYPE	5349	0.560670
21	RESOLVES_TO	3795	0.397783
22	SIMILAR	3419	0.358372
23	RETURNS_GENERIC	3253	0.340972
24	CONTAINS	3084	0.323258
25	WRITES	3066	0.321371
26	ANNOTATED_BY	2213	0.231962
27	HAS_FIRST_CHILD	1534	0.160790
28	HAS_LAST_CHILD	1534	0.160790
29	HAS_ELEMENT	1522	0.159533

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)

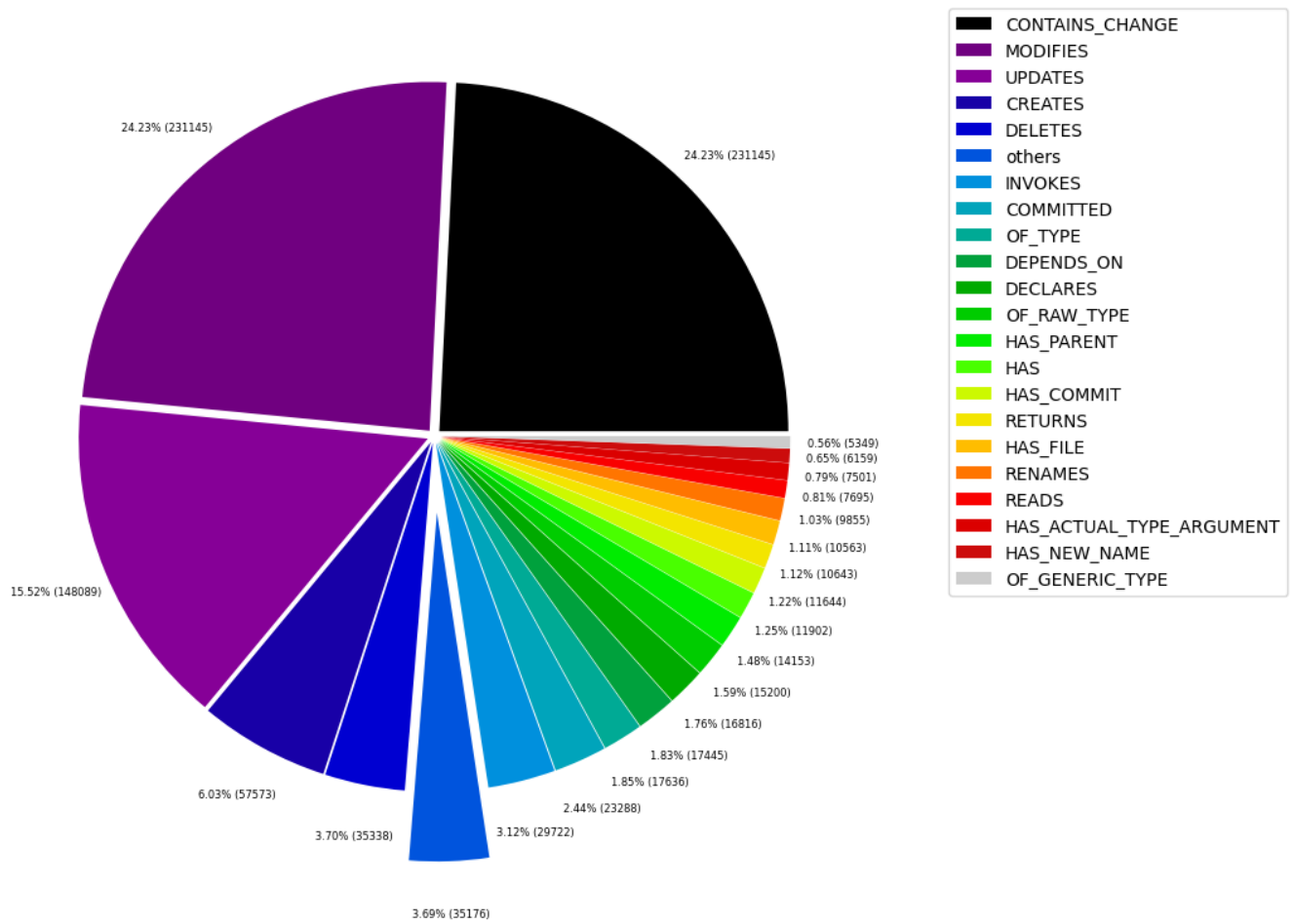


Table 2b - Lowest relationship count by type

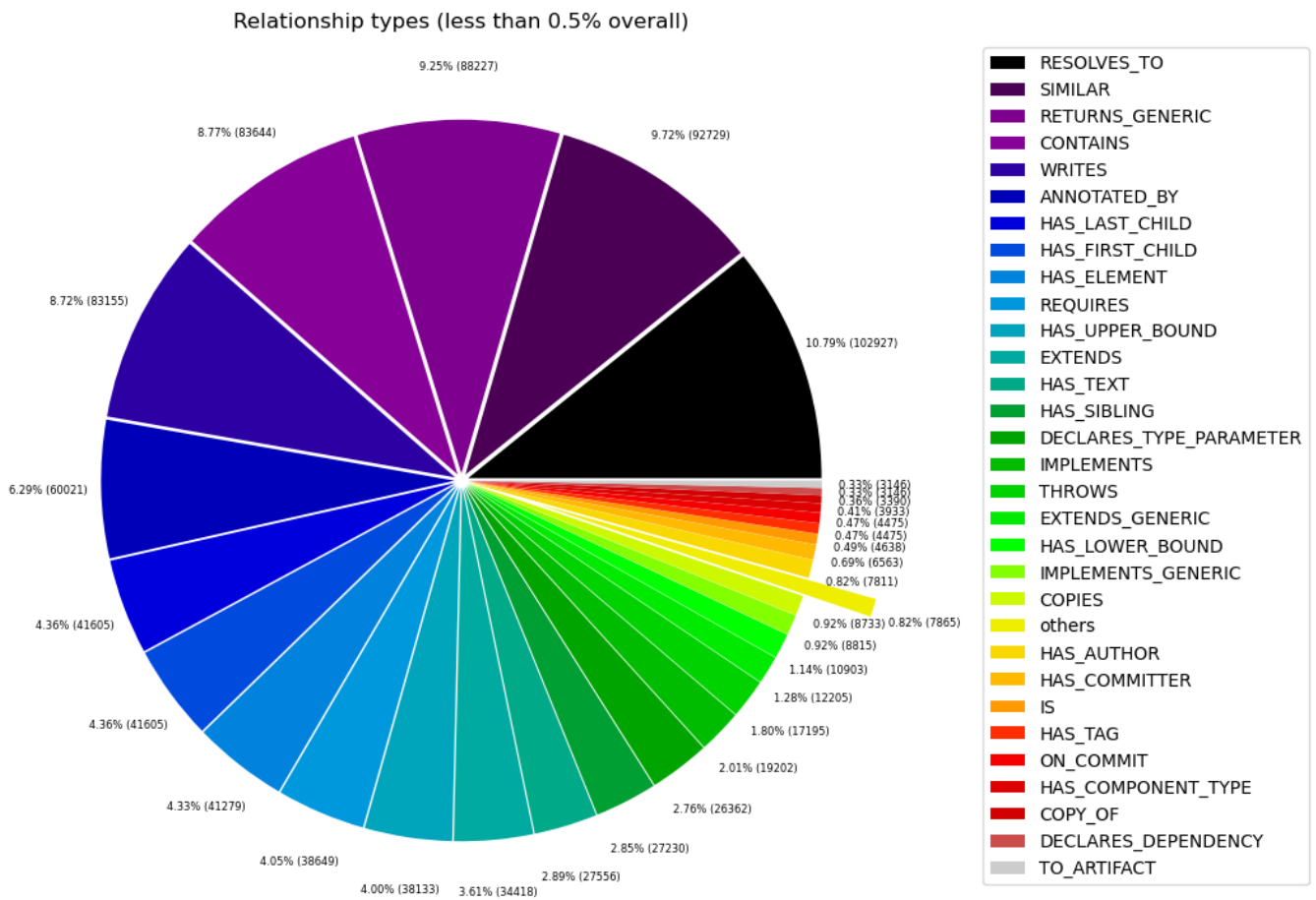
Lists the 30 relationships type with the lowest number of occurrences up to 0.5% of the total node count. This is essentially breaking down the "others" slice from the chart above.

	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	0.015199
22	ON_COMMIT	165	0.017295
23	HAS_TAG	165	0.017295
24	IS	171	0.017924
25	HAS_COMMITTER	242	0.025366
26	HAS_AUTHOR	288	0.030188
27	COPIES	322	0.033751
28	IMPLEMENTS_GENERIC	325	0.034066
29	HAS_LOWER_BOUND	402	0.042137

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	numberOfNodesWithS
0	[Git, Commit]	CONTAINS_CHANGE	[Git, Change]	231145	11644	
1	[Git, Change]	MODIFIES	[File, Git]	231145	231145	
2	[Git, Change]	UPDATES	[File, Git]	148089	231145	
3	[Git, Change]	CREATES	[File, Git]	57573	231145	
4	[Git, Change]	DELETES	[File, Git]	35338	231145	
5	[Java, ByteCode, Method, Member]	INVOKES	[Java, ByteCode, Method, Member]	18204	10576	
6	[Git, Commit]	HAS_PARENT	[Git, Commit]	14147	11644	
7	[Repository, File, Git]	HAS_COMMIT	[Git, Commit]	11644	1	
8	[Author, Git, Person]	COMMITTED	[Git, Commit]	11644	288	
9	[Committer, Git, Person]	COMMITTED	[Git, Commit]	11644	242	
10	[Repository, File, Git]	HAS_FILE	[File, Git]	10563	1	
11	[Git, Change]	RENAMES	[File, Git]	9855	231145	
12	[Java, ByteCode, Method, Member]	HAS	[Java, ByteCode, Parameter]	7306	10576	
13	[Java, ByteCode, Method, Member]	READS	[Java, ByteCode, Member, Field]	6917	10576	
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	10576	
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	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	10576	
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): 307321
total_number_of_relationships (edges): 954037
-> total directed graph density: 1.010141365419285e-05
-> total directed graph density in percent: 0.0010101413654192849
```