

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: 307327

	nodeLabels	nodesWithThatLabels	nodesWithThatLabelsPercent
0	[Git, Change]	231145	75.211420
1	[Git, Commit]	11644	3.788798
2	[Java, ByteCode, Parameter]	11202	3.644977
3	[Java, ByteCode, Method, Member]	10667	3.470896
4	[File, Git]	10563	3.437056
5	[Java, ByteCode, Bound, ParameterizedType]	6542	2.128677
6	[Java, ByteCode, Bound]	6316	2.055140
7	[Java, ByteCode, Member, Field]	2847	0.926375
8	[Java, ByteCode, Bound, WildcardType]	2723	0.886027
9	[Java, Value, ByteCode, Annotation]	2225	0.723985
10	[Java, ByteCode, Constructor, Method, Member]	1649	0.536562
11	[Xml, Element]	1534	0.499143
12	[Xml, Text]	1016	0.330592
13	[Java, ByteCode, Bound, TypeVariable]	989	0.321807
14	[Java, ByteCode, Method, Member, Lambda]	769	0.250222
15	[Type, File, Java, ByteCode, Class]	699	0.227445
16	[Type, File, Java, ByteCode, JavaType]	597	0.194256
17	[Type, File, Java, ByteCode, ResolvedDuplicate...	542	0.176359
18	[Java, ByteCode, Method, Member, GenericDeclar...	525	0.170828
19	[Java, Value, ByteCode, Primitive]	467	0.151955
20	[Author, Git, Person]	288	0.093711
21	[Committer, Git, Person]	242	0.078743
22	[Type, File, Java, ByteCode, Class, GenericDec...	215	0.069958
23	[Type, File, Java, ByteCode, ExternalType]	194	0.063125
24	[Type, File, Java, ByteCode, Interface]	167	0.054340
25	[Git, Tag]	165	0.053689
26	[Java, ByteCode, Bound, GenericArrayType]	145	0.047181
27	[Java, Value, ByteCode, Enum]	142	0.046205
28	[Maven, Dependency]	116	0.037745
29	[Value, Property]	109	0.035467

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)

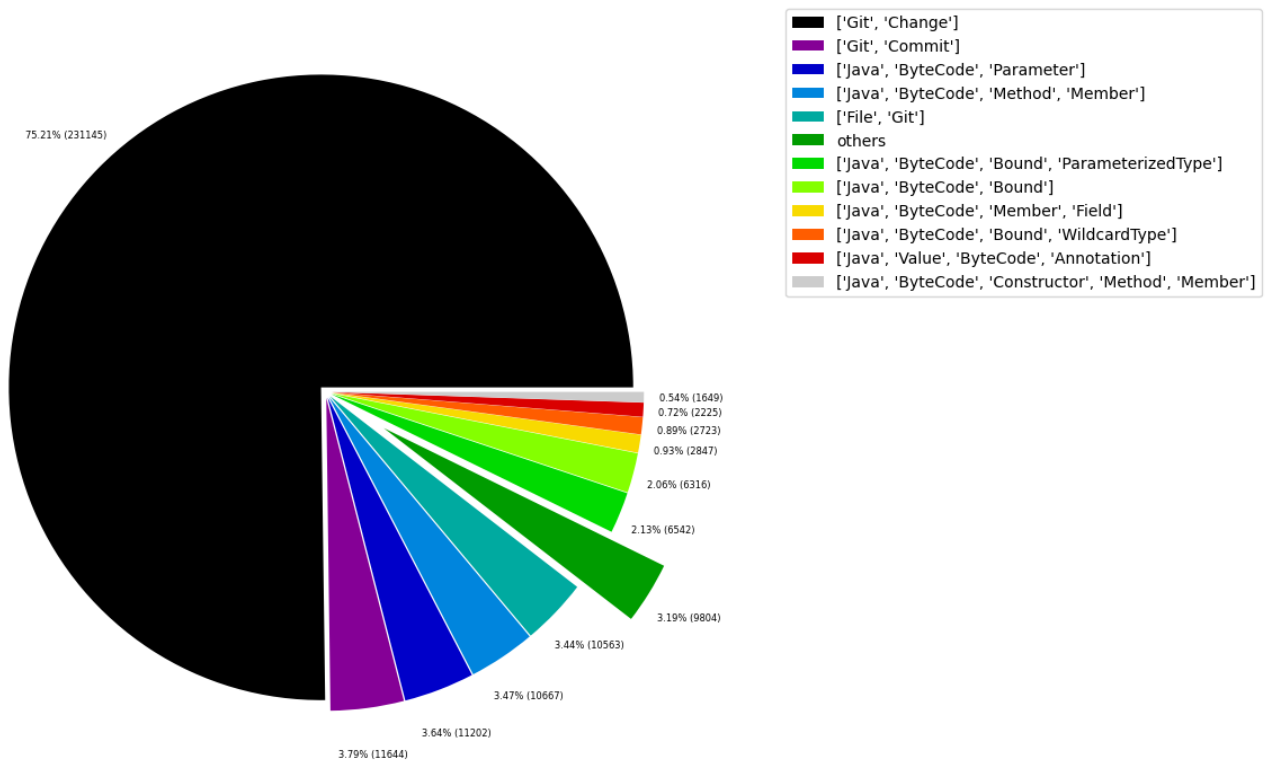


Table 1b - Lowest node count by label combination

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	0.000325
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, Maven, Xml, 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	0.002928
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	0.013015
26	[Type, File, Java, ByteCode, ExternalType, Ext...]	65	0.021150
27	[Artifact, Maven]	69	0.022452
28	[Type, File, Java, ByteCode, GenericDeclaratio...]	80	0.026031
29	[Value, ManifestEntry]	91	0.029610

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)

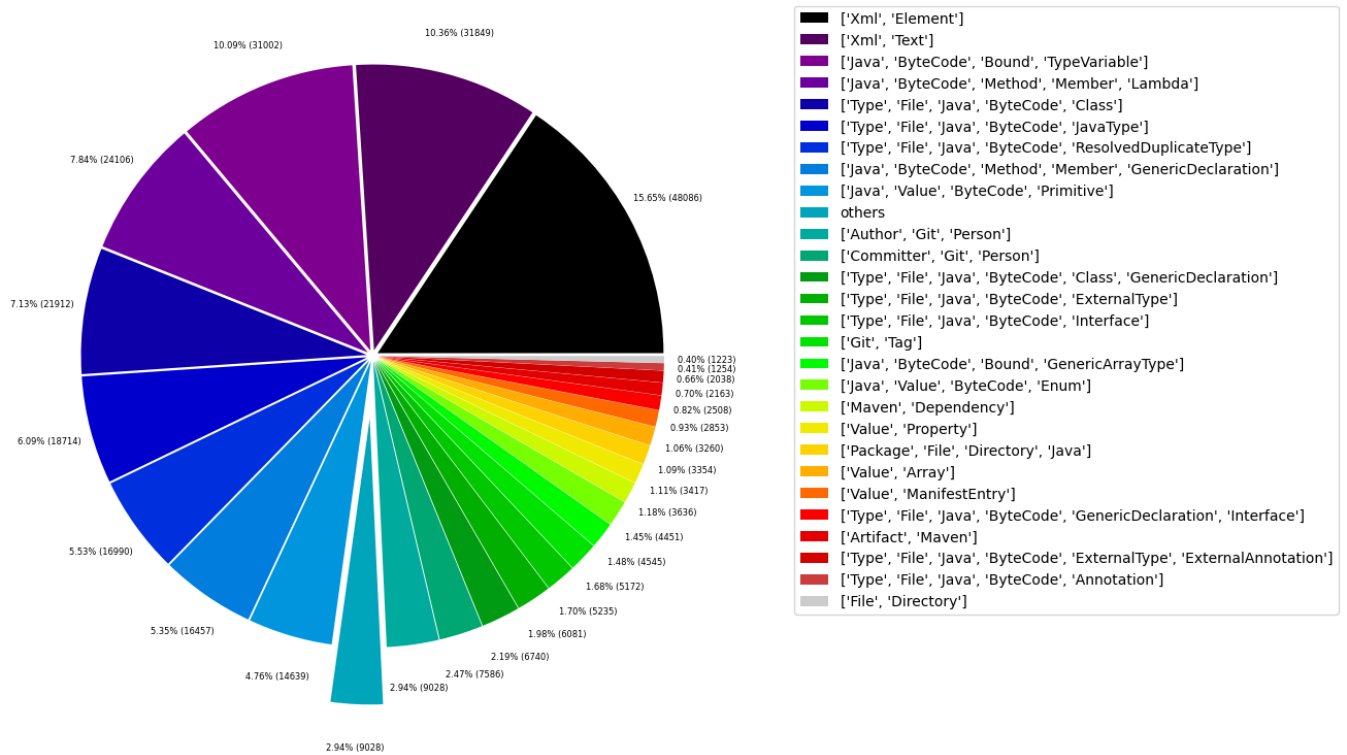


Table 1c - Highest node count by single label

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.

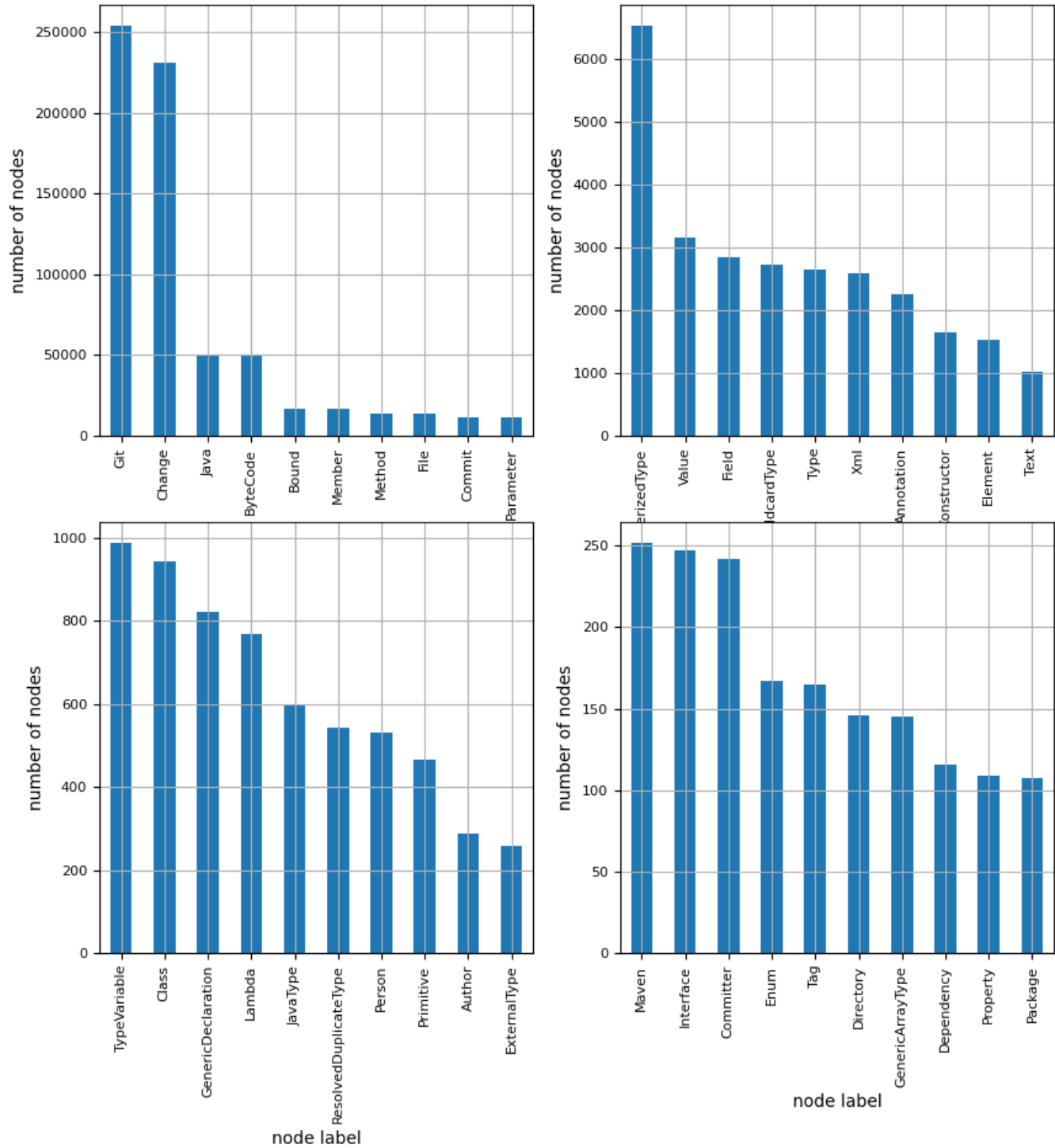
	nodeLabel	nodesWithThatLabel	nodesWithThatLabelPercent
0	Git	254072	82.671552
1	Change	231145	75.211420
2	Java	50032	16.279728
3	ByteCode	49890	16.233523
4	Bound	16715	5.438832
5	Member	16460	5.355859
6	Method	13613	4.429484
7	File	13418	4.366034
8	Commit	11644	3.788798
9	Parameter	11202	3.644977
10	ParameterizedType	6542	2.128677
11	Value	3166	1.030173
12	Field	2847	0.926375
13	WildcardType	2723	0.886027
14	Type	2651	0.862599
15	Xml	2592	0.843401
16	Annotation	2265	0.737000
17	Constructor	1652	0.537538
18	Element	1534	0.499143
19	Text	1016	0.330592
20	TypeVariable	989	0.321807
21	Class	942	0.306514
22	GenericDeclaration	823	0.267793
23	Lambda	769	0.250222
24	JavaType	597	0.194256
25	ResolvedDuplicateType	542	0.176359
26	Person	530	0.172455
27	Primitive	467	0.151955
28	Author	288	0.093711
29	ExternalType	259	0.084275
30	Maven	252	0.081997
31	Interface	247	0.080370
32	Committer	242	0.078743
33	Enum	167	0.054340
34	Tag	165	0.053689
35	Directory	146	0.047506
36	GenericArrayType	145	0.047181
37	Dependency	116	0.037745
38	Property	109	0.035467
39	Package	107	0.034816

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: 954049

	relationshipType	nodesWithThatRelationshipType	nodesWithThatRelationshipTypePercent
0	CONTAINS_CHANGE	231145	24.227791
1	MODIFIES	231145	24.227791
2	UPDATES	148089	15.522159
3	CREATES	57573	6.034596
4	DELETES	35338	3.704003
5	INVOKES	29726	3.115773
6	COMMITTED	23288	2.440965
7	OF_TYPE	17636	1.848542
8	DEPENDS_ON	17445	1.828522
9	DECLARES	16822	1.763222
10	OF_RAW_TYPE	15200	1.593210
11	HAS_PARENT	14153	1.483467
12	HAS	11902	1.247525
13	HAS_COMMIT	11644	1.220482
14	RETURNS	10643	1.115561
15	HAS_FILE	10563	1.107176
16	RENAMES	9855	1.032966
17	READS	7695	0.806562
18	HAS_ACTUAL_TYPE_ARGUMENT	7501	0.786228
19	HAS_NEW_NAME	6159	0.645564
20	OF_GENERIC_TYPE	5349	0.560663
21	RESOLVES_TO	3797	0.397988
22	SIMILAR	3419	0.358367
23	RETURNS_GENERIC	3253	0.340968
24	CONTAINS	3084	0.323254
25	WRITES	3066	0.321367
26	ANNOTATED_BY	2213	0.231959
27	HAS_FIRST_CHILD	1534	0.160788
28	HAS_LAST_CHILD	1534	0.160788
29	HAS_ELEMENT	1522	0.159531

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)

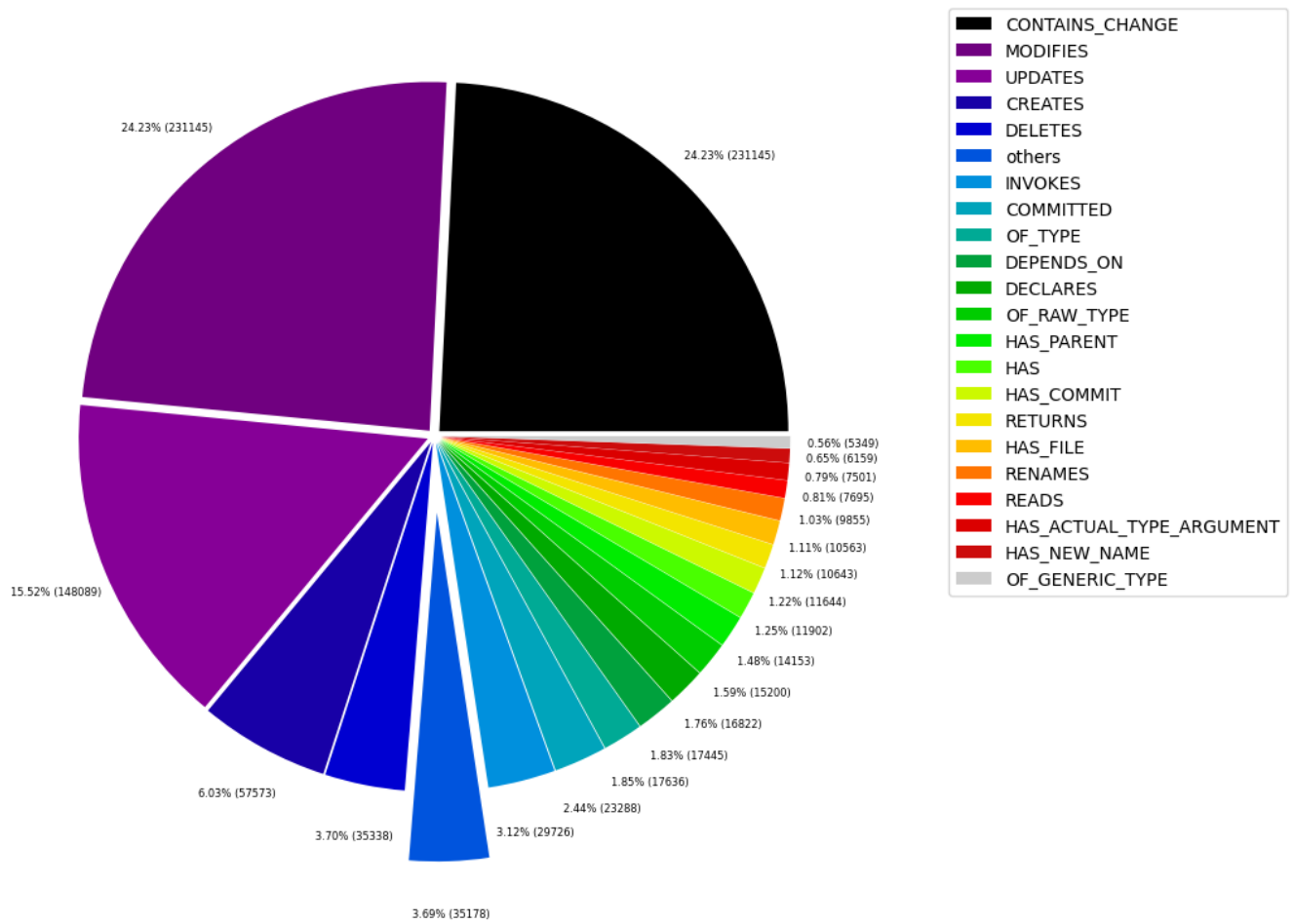


Table 2b - Lowest relationship count by type

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.

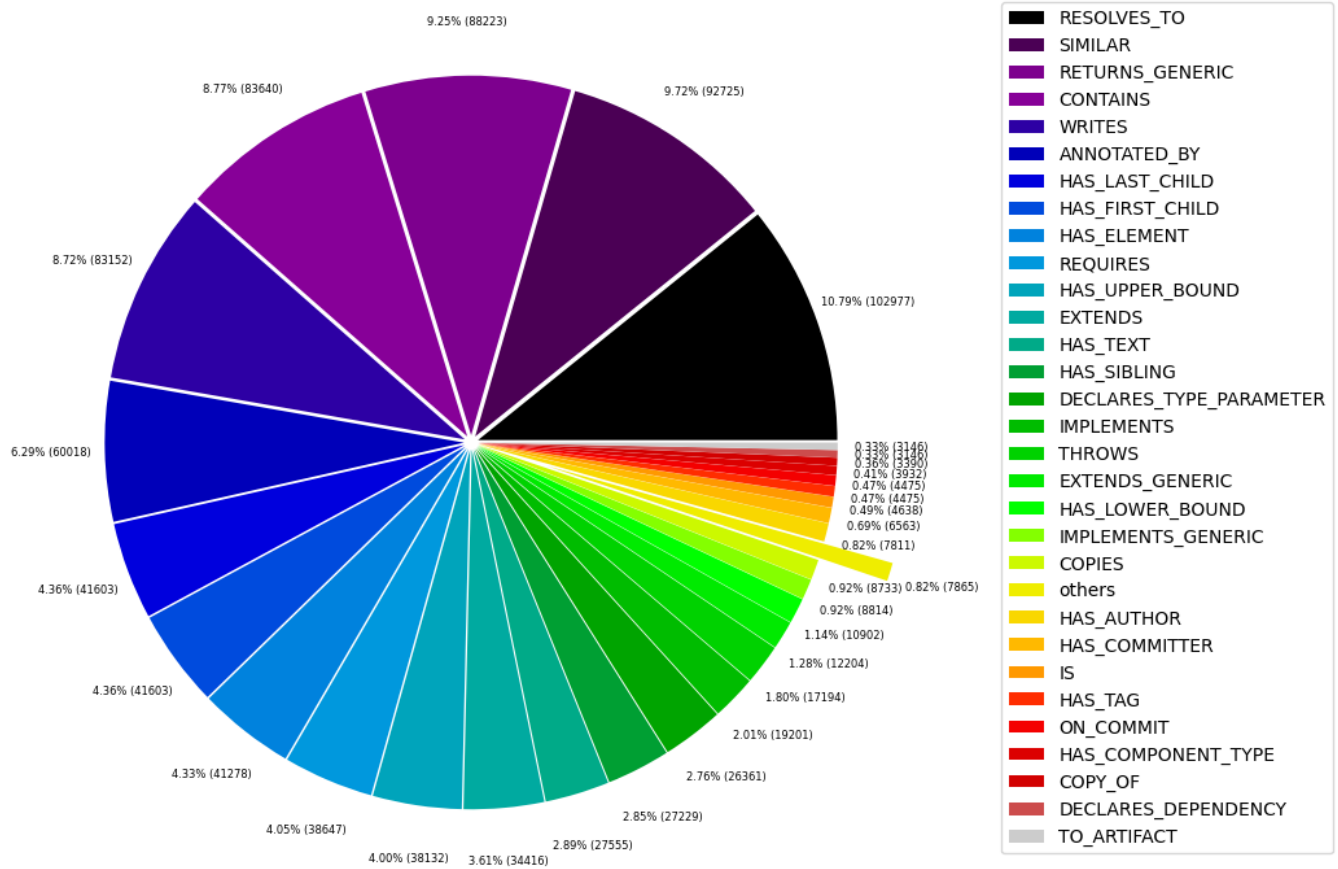
	relationshipType	nodesWithThatRelationshipType	nodesWithThatRelationshipTypePercent
0	EXCLUDES	1	0.000105
1	THROWS_GENERIC	5	0.000524
2	DESCRIBES	6	0.000629
3	HAS_ROOT_ELEMENT	7	0.000734
4	OF_NAMESPACE	12	0.001258
5	HAS_ATTRIBUTE	12	0.001258
6	HAS_GOAL	14	0.001467
7	HAS_EXECUTION	14	0.001467
8	USES_PLUGIN	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	0.025366
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]	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]	18205	10580	
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	10580	
13	[Java, ByteCode, Method, Member]	READS	[Java, ByteCode, Member, Field]	6917	10580	
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	1649	
22	[Java, ByteCode, Method, Member]	RETURNS	[Type, File, Java, ByteCode, JavaType]	1892	10580	
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]	1739	1649	
26	[Java, ByteCode, Constructor, Method, Member]	HAS	[Java, ByteCode, Parameter]	1710	1649	
27	[Java, ByteCode, Method, Member]	INVOKES	[Java, ByteCode, Constructor, Method, Member]	1704	10580	
28	[Java, ByteCode, Parameter]	ANNOTATED_BY	[Java, Value, ByteCode, Annotation]	1594	11202	
29	[Java, ByteCode, Constructor, Method, Member]	INVOKES	[Java, ByteCode, Method, Member]	1539	1649	

Graph Density

```
total_number_of_nodes (vertices): 307327
total_number_of_relationships (edges): 954049
-> total directed graph density: 1.010114628590777e-05
-> total directed graph density in percent: 0.001010114628590777
```