

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: 307152

	nodeLabels	nodesWithThatLabels	nodesWithThatLabelsPercent
0	[Git, Change]	231027	75.215854
1	[Git, Commit]	11618	3.782492
2	[Java, ByteCode, Parameter]	11202	3.647054
3	[Java, ByteCode, Method, Member]	10657	3.469618
4	[File, Git]	10547	3.433805
5	[Java, ByteCode, Bound, ParameterizedType]	6542	2.129890
6	[Java, ByteCode, Bound]	6316	2.056311
7	[Java, ByteCode, Member, Field]	2848	0.927228
8	[Java, ByteCode, Bound, WildcardType]	2723	0.886532
9	[Java, Value, ByteCode, Annotation]	2225	0.724397
10	[Java, ByteCode, Constructor, Method, Member]	1643	0.534914
11	[Xml, Element]	1534	0.499427
12	[Xml, Text]	1016	0.330781
13	[Java, ByteCode, Bound, TypeVariable]	989	0.321990
14	[Java, ByteCode, Method, Member, Lambda]	769	0.250365
15	[Type, File, Java, ByteCode, Class]	699	0.227575
16	[Type, File, Java, ByteCode, JavaType]	597	0.194366
17	[Type, File, Java, ByteCode, ResolvedDuplicate...	542	0.176460
18	[Java, ByteCode, Method, Member, GenericDeclar...	525	0.170925
19	[Java, Value, ByteCode, Primitive]	467	0.152042
20	[Author, Git, Person]	288	0.093765
21	[Committer, Git, Person]	242	0.078788
22	[Type, File, Java, ByteCode, Class, GenericDec...	215	0.069998
23	[Type, File, Java, ByteCode, ExternalType]	194	0.063161
24	[Type, File, Java, ByteCode, Interface]	167	0.054370
25	[Git, Tag]	165	0.053719
26	[Java, ByteCode, Bound, GenericArrayType]	145	0.047208
27	[Java, Value, ByteCode, Enum]	142	0.046231
28	[Maven, Dependency]	116	0.037766
29	[Value, Property]	109	0.035487

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)

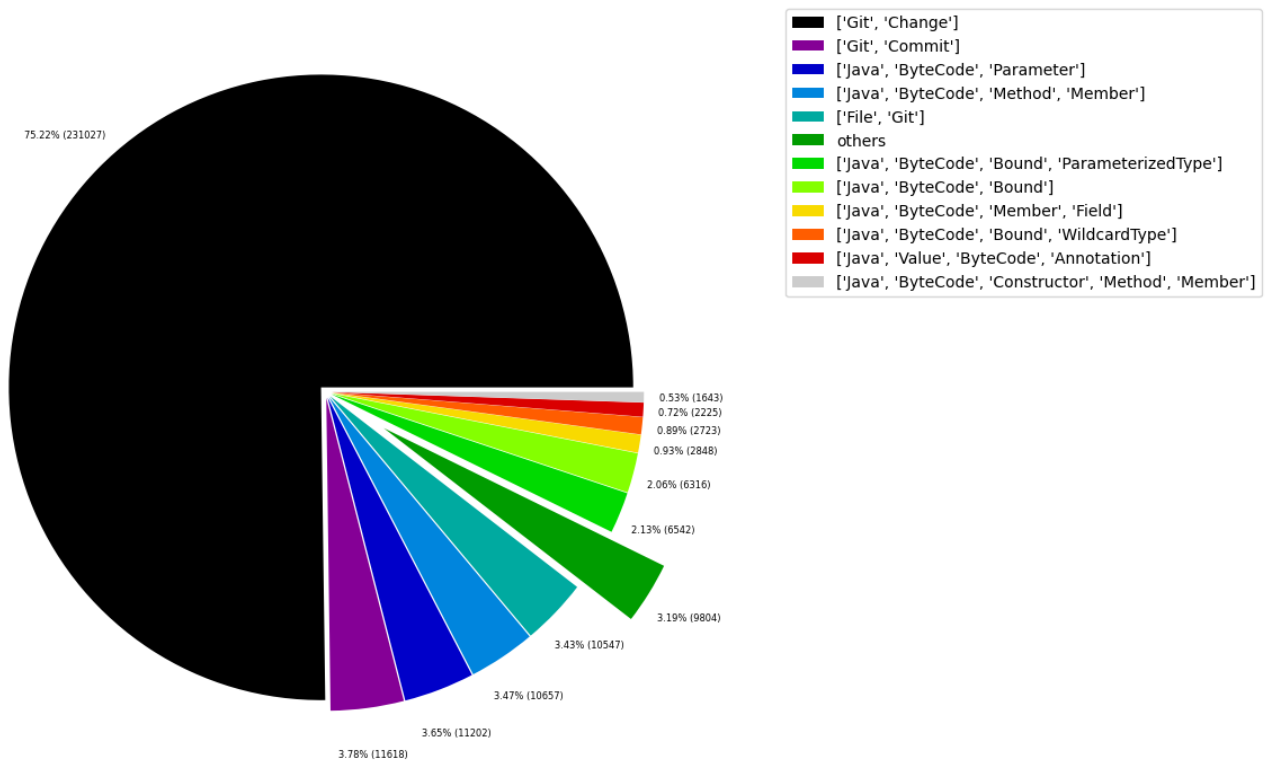


Table 1b - Lowest node count by label combination

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, Maven, Xml, Pom, Document]	6	0.001953
6	[Type, File, Java, ByteCode, Void]	6	0.001953
7	[Java, ManifestSection]	6	0.001953
8	[File, Java, Manifest]	6	0.001953
9	[Artifact, File, Jar, Archive, Zip, Java]	6	0.001953
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	0.005209
16	[Maven, Configuration]	16	0.005209
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	0.008139
23	[Java, Value, ByteCode, Class]	28	0.009116
24	[File, Directory]	39	0.012697
25	[Type, File, Java, ByteCode, Annotation]	40	0.013023
26	[Type, File, Java, ByteCode, ExternalType, Ext...]	65	0.021162
27	[Artifact, Maven]	69	0.022464
28	[Type, File, Java, ByteCode, GenericDeclaratio...]	80	0.026046
29	[Value, ManifestEntry]	91	0.029627

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)

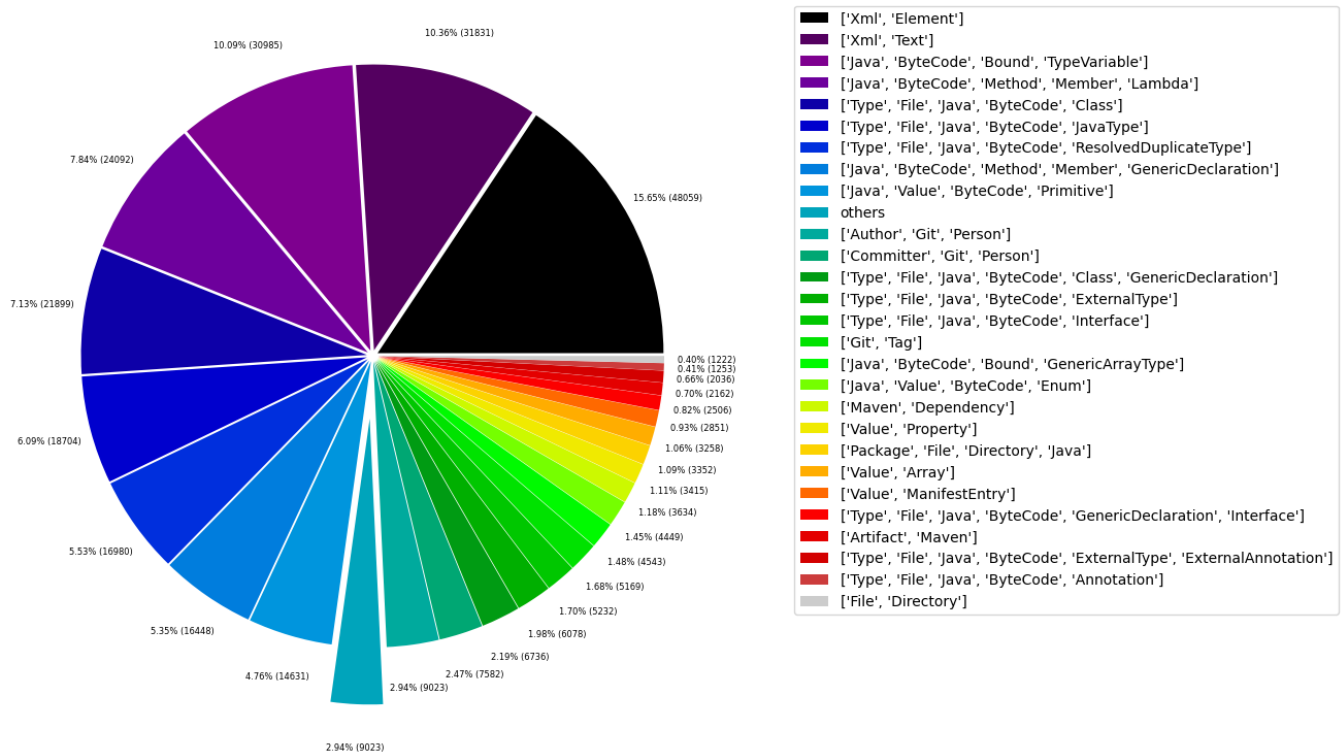


Table 1c - Highest node count by single label

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.

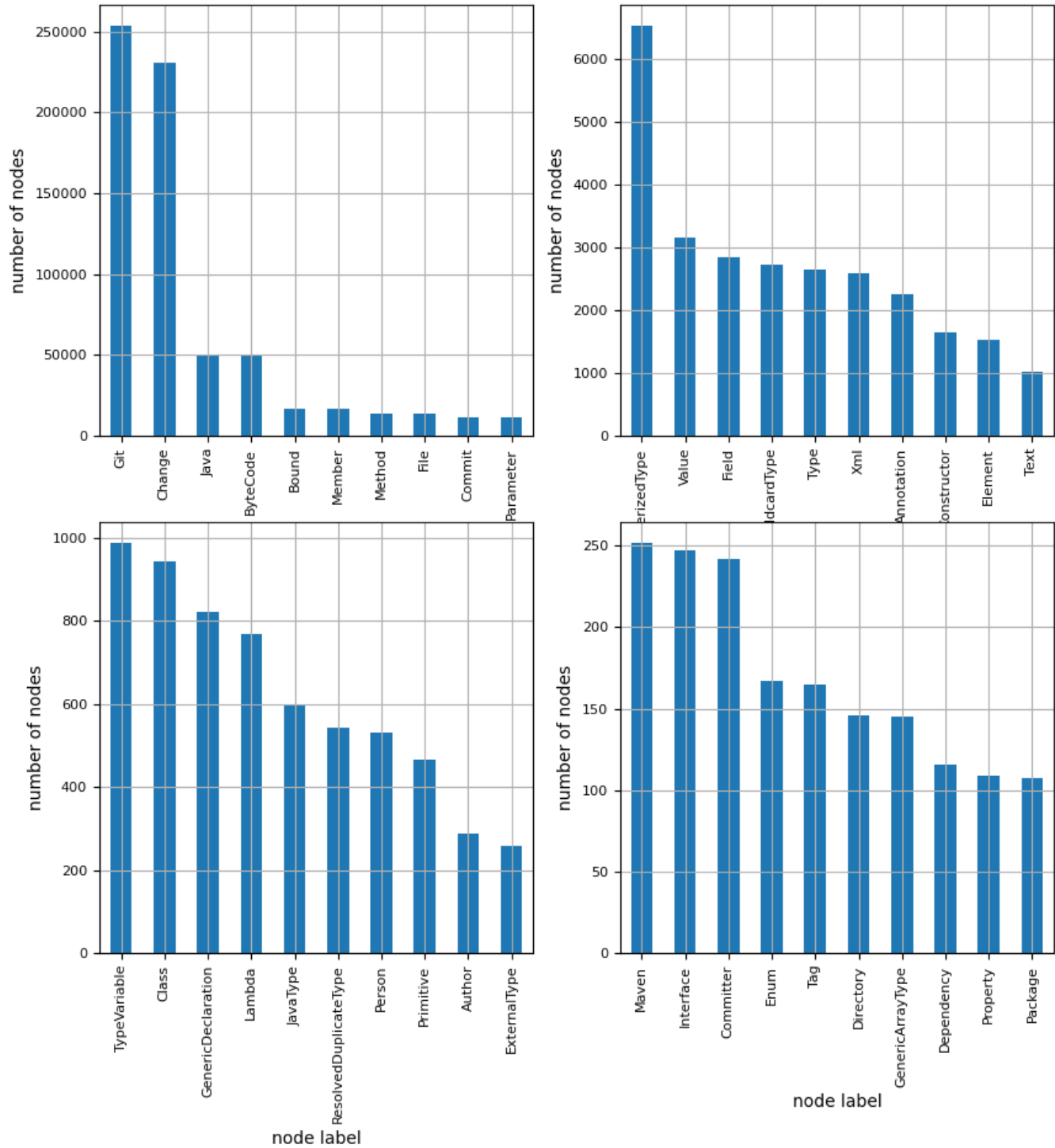
	nodeLabel	nodesWithThatLabel	nodesWithThatLabelPercent
0	Git	253912	82.666562
1	Change	231027	75.215854
2	Java	50017	16.284120
3	ByteCode	49875	16.237889
4	Bound	16715	5.441931
5	Member	16445	5.354027
6	Method	13597	4.426798
7	File	13402	4.363312
8	Commit	11618	3.782492
9	Parameter	11202	3.647054
10	ParameterizedType	6542	2.129890
11	Value	3166	1.030760
12	Field	2848	0.927228
13	WildcardType	2723	0.886532
14	Type	2651	0.863091
15	Xml	2592	0.843882
16	Annotation	2265	0.737420
17	Constructor	1646	0.535891
18	Element	1534	0.499427
19	Text	1016	0.330781
20	TypeVariable	989	0.321990
21	Class	942	0.306689
22	GenericDeclaration	823	0.267946
23	Lambda	769	0.250365
24	JavaType	597	0.194366
25	ResolvedDuplicateType	542	0.176460
26	Person	530	0.172553
27	Primitive	467	0.152042
28	Author	288	0.093765
29	ExternalType	259	0.084323
30	Maven	252	0.082044
31	Interface	247	0.080416
32	Committer	242	0.078788
33	Enum	167	0.054370
34	Tag	165	0.053719
35	Directory	146	0.047533
36	GenericArrayType	145	0.047208
37	Dependency	116	0.037766
38	Property	109	0.035487
39	Package	107	0.034836

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: 953539

	relationshipType	nodesWithThatRelationshipType	nodesWithThatRelationshipTypePercent
0	CONTAINS_CHANGE	231027	24.228375
1	MODIFIES	231027	24.228375
2	UPDATES	148004	15.521547
3	CREATES	57540	6.034363
4	DELETES	35338	3.705984
5	INVOKES	29716	3.116391
6	COMMITTED	23236	2.436817
7	OF_TYPE	17636	1.849531
8	DEPENDS_ON	17445	1.829500
9	DECLARES	16807	1.762592
10	OF_RAW_TYPE	15200	1.594062
11	HAS_PARENT	14122	1.481009
12	HAS	11902	1.248192
13	HAS_COMMIT	11618	1.218408
14	RETURNS	10643	1.116158
15	HAS_FILE	10547	1.106090
16	RENAMES	9855	1.033518
17	READS	7695	0.806994
18	HAS_ACTUAL_TYPE_ARGUMENT	7501	0.786648
19	HAS_NEW_NAME	6159	0.645910
20	OF_GENERIC_TYPE	5349	0.560963
21	RESOLVES_TO	3791	0.397572
22	SIMILAR	3419	0.358559
23	RETURNS_GENERIC	3253	0.341150
24	CONTAINS	3084	0.323427
25	WRITES	3066	0.321539
26	ANNOTATED_BY	2213	0.232083
27	HAS_FIRST_CHILD	1534	0.160874
28	HAS_LAST_CHILD	1534	0.160874
29	HAS_ELEMENT	1522	0.159616

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)

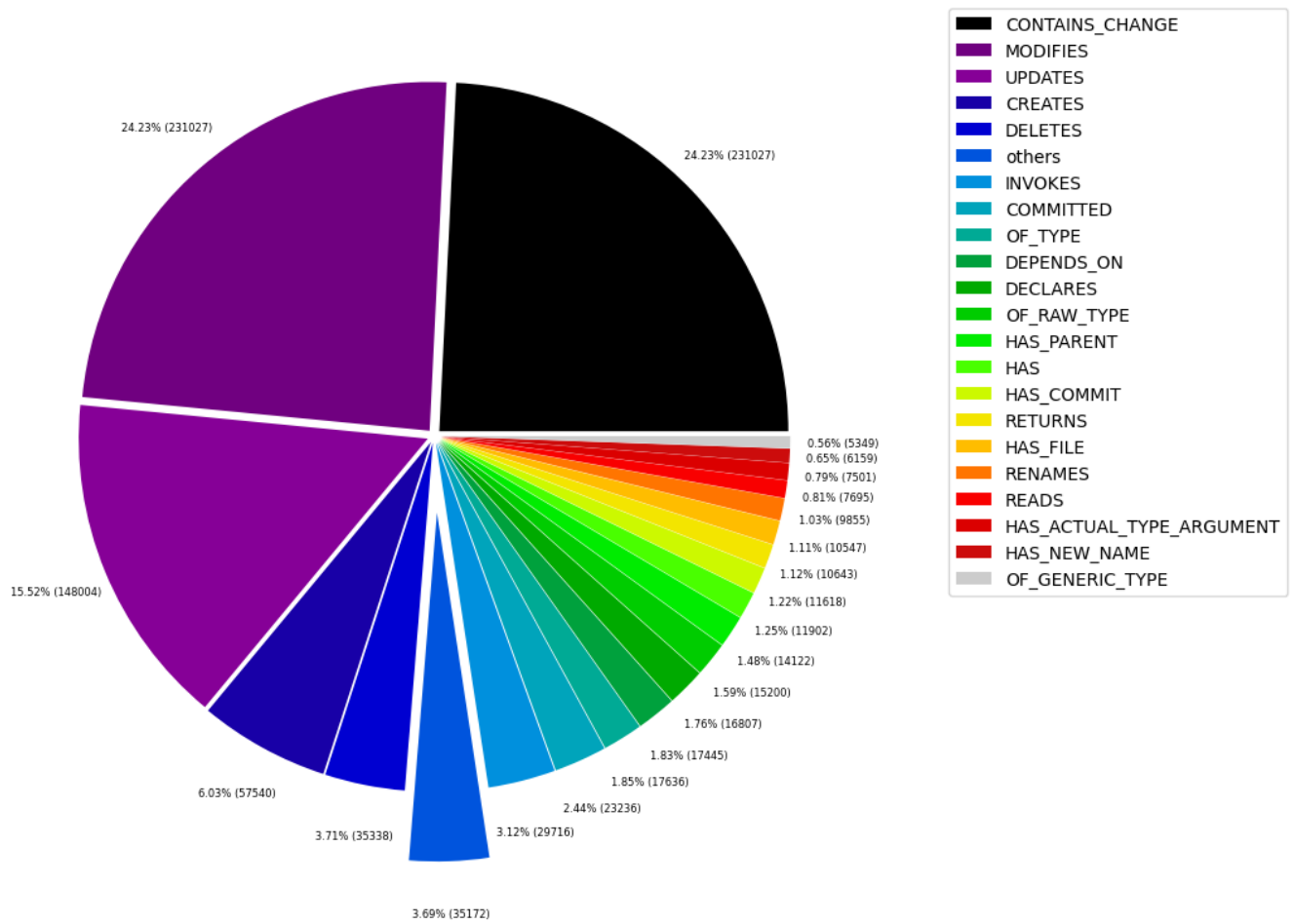


Table 2b - Lowest relationship count by type

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.

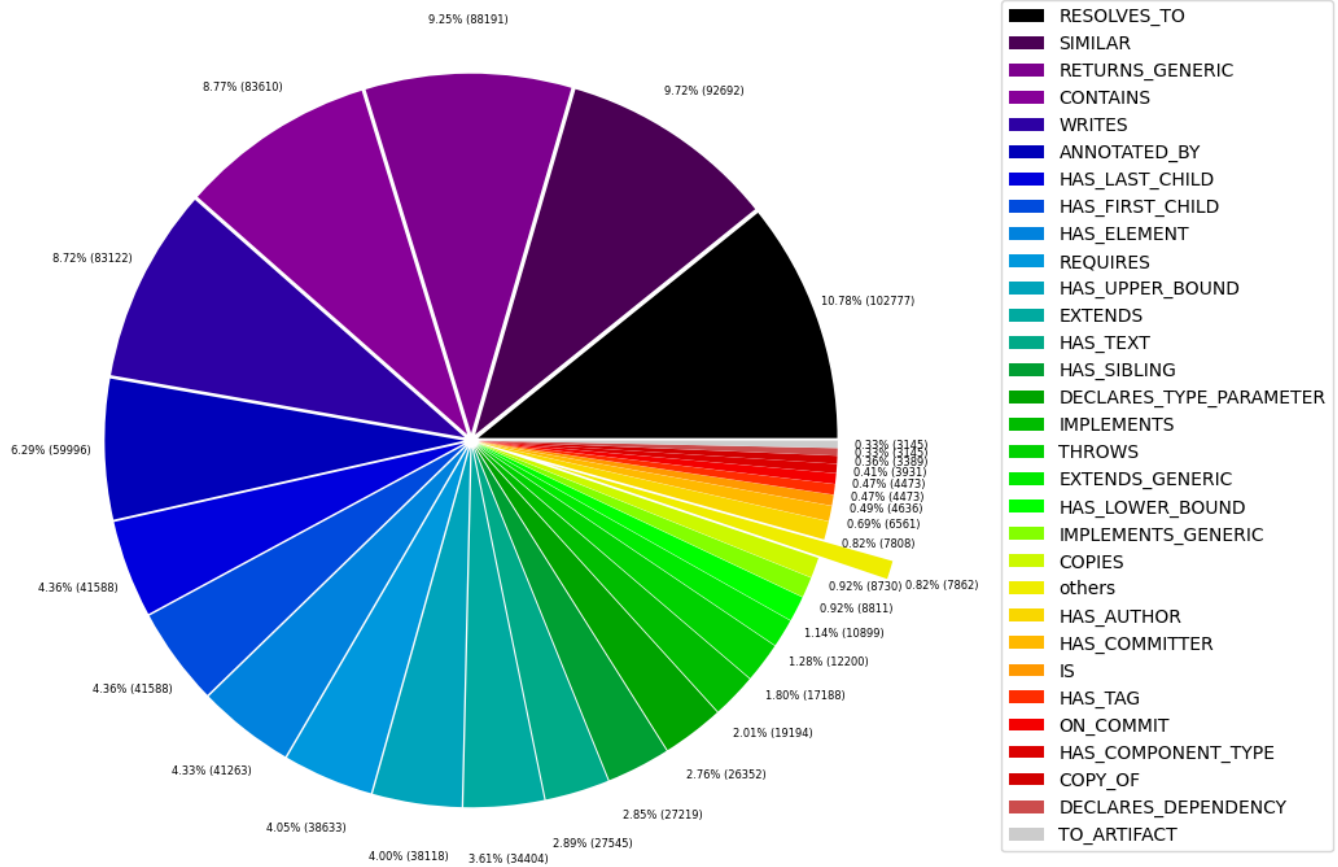
	relationshipType	nodesWithThatRelationshipType	nodesWithThatRelationshipTypePercent
0	EXCLUDES	1	0.000105
1	THROWS_GENERIC	5	0.000524
2	DESCRIBES	6	0.000629
3	HAS_ROOT_ELEMENT	7	0.000734
4	OF_NAMESPACE	12	0.001258
5	HAS_ATTRIBUTE	12	0.001258
6	HAS_GOAL	14	0.001468
7	HAS_EXECUTION	14	0.001468
8	USES_PLUGIN	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	0.002936
17	HAS_DEFAULT	34	0.003566
18	DECLARES_DEPENDENCY	116	0.012165
19	TO_ARTIFACT	116	0.012165
20	COPY_OF	125	0.013109
21	HAS_COMPONENT_TYPE	145	0.015207
22	ON_COMMIT	165	0.017304
23	HAS_TAG	165	0.017304
24	IS	171	0.017933
25	HAS_COMMITTER	242	0.025379
26	HAS_AUTHOR	288	0.030203
27	COPIES	322	0.033769
28	IMPLEMENTS_GENERIC	325	0.034084
29	HAS_LOWER_BOUND	402	0.042159

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]	18199	10570	
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	10570	
13	[Java, ByteCode, Method, Member]	READS	[Java, ByteCode, Member, Field]	6917	10570	
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	10570	
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]	1702	10570	
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): 307152
total_number_of_relationships (edges): 953539
-> total directed graph density: 1.0107253988318806e-05
-> total directed graph density in percent: 0.0010107253988318806
```