

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`.

	nodeLabels	nodesWithThatLabels	nodesWithThatLabelsPercent
0	[Git, Change]	259023	74.297606
1	[Java, ByteCode, Member, Method]	13284	3.810354
2	[Java, ByteCode, Parameter]	13029	3.737211
3	[Git, Commit]	12699	3.642554
4	[File, Git]	10809	3.100431
5	[Java, ByteCode, ParameterizedType, Bound]	7176	2.058349
6	[Java, ByteCode, Bound]	7118	2.041712
7	[Java, ByteCode, Member, Field]	3511	1.007088
8	[Java, ByteCode, Bound, WildcardType]	2908	0.834125
9	[Java, Value, ByteCode, Annotation]	2822	0.809456
10	[Xml, Element]	2144	0.614980
11	[Java, ByteCode, Member, Constructor, Method]	2068	0.593181
12	[Xml, Text]	1436	0.411899
13	[Java, ByteCode, Bound, TypeVariable]	1096	0.314374
14	[Java, ByteCode, Member, Method, Lambda]	942	0.270201
15	[Type, File, Java, ByteCode, ResolvedDuplicate...	877	0.251557
16	[Type, File, Java, ByteCode, Class]	810	0.232339
17	[Java, Value, ByteCode, Primitive]	652	0.187018
18	[Type, File, Java, ByteCode, JavaType]	644	0.184724
19	[Java, ByteCode, Member, Method, GenericDeclar...	569	0.163211
20	[Json, Key]	560	0.160629
21	[Value, Json, Scalar]	544	0.156040
22	[Type, File, Java, ByteCode, ExternalType]	380	0.108998
23	[Author, Git, Person]	298	0.085478
24	[Value, Array]	267	0.076586
25	[Committer, Git, Person]	252	0.072283
26	[Type, File, Java, ByteCode, Class, GenericDec...	236	0.067694
27	[Value, Property]	202	0.057941
28	[Type, File, Java, ByteCode, Interface]	188	0.053926
29	[Java, Value, ByteCode, Class]	172	0.049336

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)

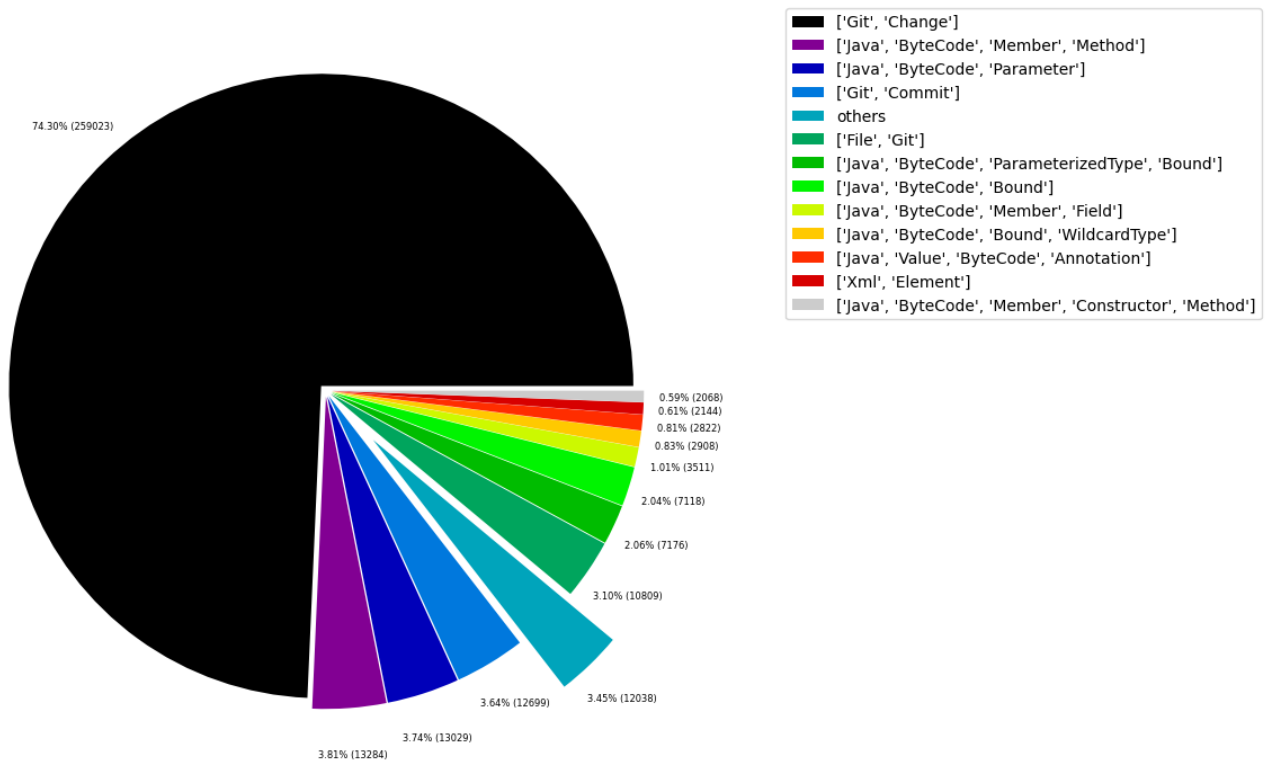


Table 1b - Lowest node count by label combination

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	0.000287
1	[Repository, File, Git]	1	0.000287
2	[File, Json]	2	0.000574
3	[File]	3	0.000861
4	[Java, ByteCode, Member, Constructor, Method, ...]	4	0.001147
5	[Maven, Exclusion]	5	0.001434
6	[Value, Json, Array]	6	0.001721
7	[File, Maven, Xml, Pom, Document]	9	0.002582
8	[Type, File, Java, ByteCode, Void]	9	0.002582
9	[Java, ManifestSection]	9	0.002582
10	[File, Java, Manifest]	9	0.002582
11	[Artifact, File, Jar, Archive, Zip, Java]	9	0.002582
12	[File, Java, ServiceLoader]	10	0.002868
13	[File, Java, Properties]	12	0.003442
14	[Maven, ExecutionGoal]	16	0.004589
15	[Maven, PluginExecution]	16	0.004589
16	[Type, File, Java, ByteCode, Throwable, Extern...	16	0.004589
17	[Xml, Attribute]	18	0.005163
18	[jQAssistant, Rule, Concept]	19	0.005450
19	[Maven, Plugin]	21	0.006024
20	[Maven, Configuration]	21	0.006024
21	[Type, File, Java, ByteCode, Throwable, Resolv...	22	0.006310
22	[Type, File, Java, ByteCode, Enum]	28	0.008031
23	[Type, File, Java, ByteCode, PrimitiveType]	29	0.008318
24	[Git, Branch]	35	0.010039
25	[Xml, Namespace]	36	0.010326
26	[Type, File, Java, ByteCode, Annotation]	43	0.012334
27	[File, Directory]	44	0.012621
28	[Type, File, Java, ByteCode, Class, Throwable]	54	0.015489
29	[Type, File, Java, ByteCode, GenericDeclaratio...	85	0.024381

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)

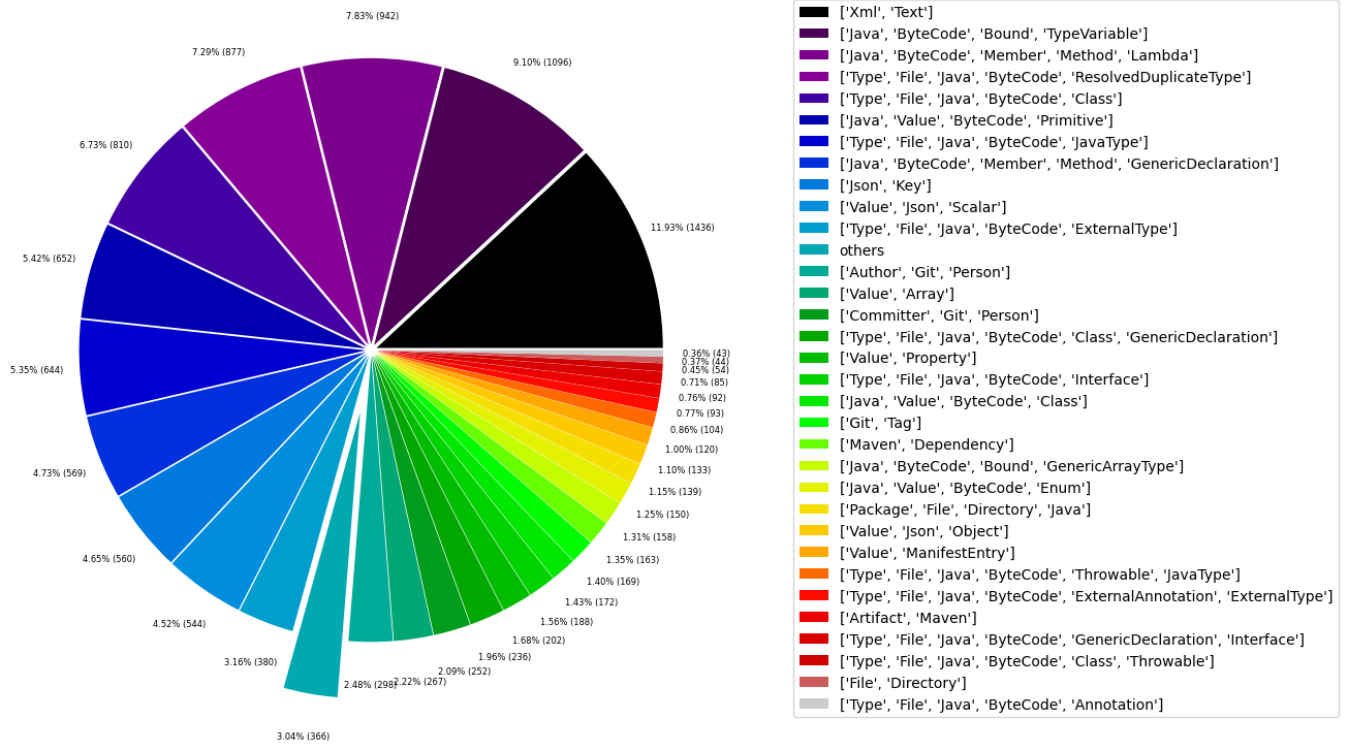


Table 1c - Highest node count by single label

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.

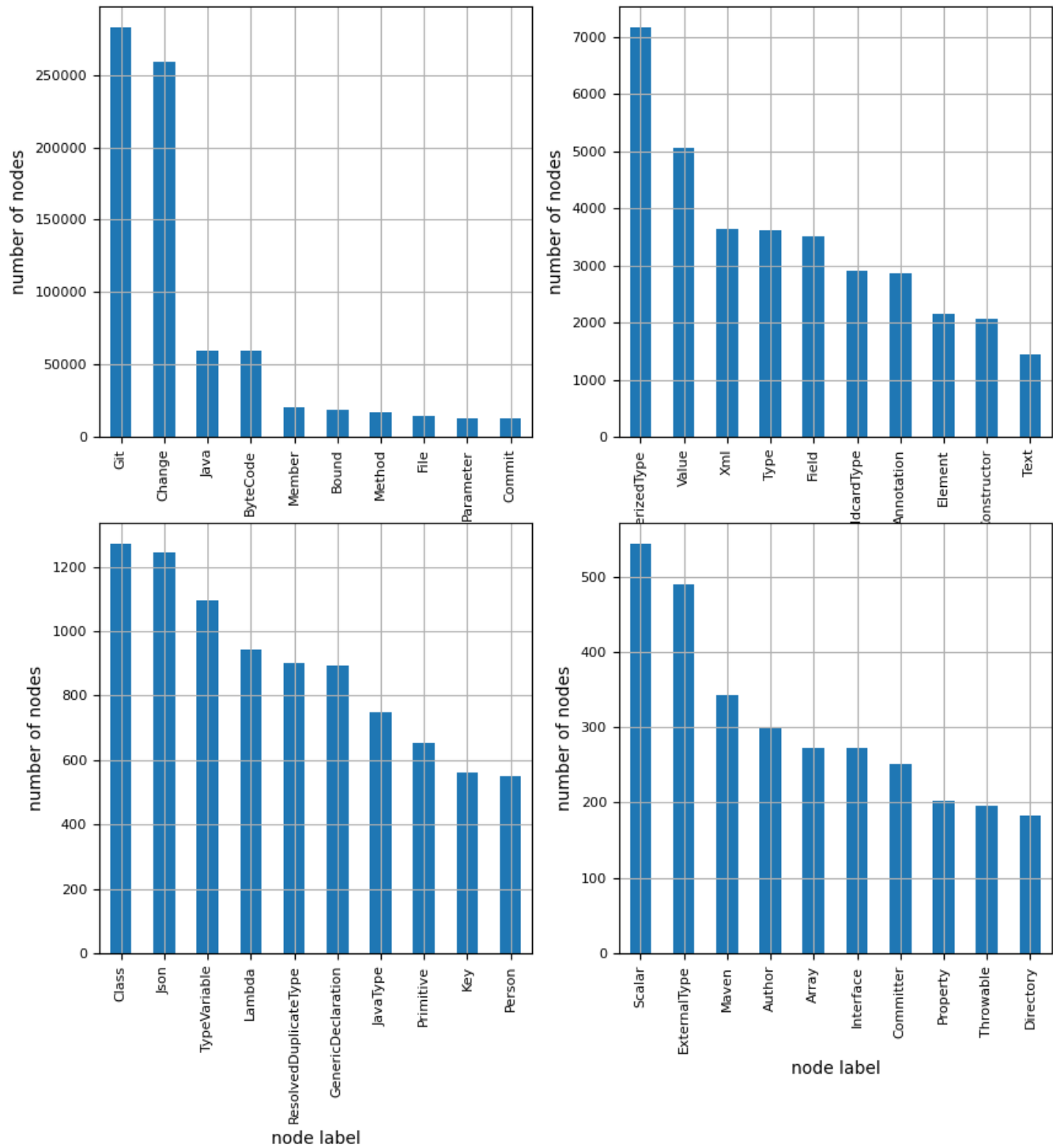
	nodeLabel	nodesWithThatLabel	nodesWithThatLabelPercent
0	Git	283286	81.257153
1	Change	259023	74.297606
2	Java	59465	17.056814
3	ByteCode	59277	17.002888
4	Member	20378	5.845182
5	Bound	18456	5.293880
6	Method	16867	4.838094
7	File	14665	4.206477
8	Parameter	13029	3.737211
9	Commit	12699	3.642554
10	ParameterizedType	7176	2.058349
11	Value	5068	1.453694
12	Xml	3643	1.044950
13	Type	3618	1.037779
14	Field	3511	1.007088
15	WildcardType	2908	0.834125
16	Annotation	2865	0.821790
17	Element	2144	0.614980
18	Constructor	2072	0.594328
19	Text	1436	0.411899
20	Class	1272	0.364858
21	Json	1245	0.357113
22	TypeVariable	1096	0.314374
23	Lambda	942	0.270201
24	ResolvedDuplicateType	899	0.257867
25	GenericDeclaration	894	0.256433
26	JavaType	748	0.214555
27	Primitive	652	0.187018
28	Key	560	0.160629
29	Person	550	0.157761
30	Scalar	544	0.156040
31	ExternalType	489	0.140264
32	Maven	343	0.098385
33	Author	298	0.085478
34	Array	273	0.078307
35	Interface	273	0.078307
36	Committer	252	0.072283
37	Property	202	0.057941
38	Throwable	196	0.056220
39	Directory	183	0.052491

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: 1082569

	relationshipType	nodesWithThatRelationshipType	nodesWithThatRelationshipTypePercent
0	CONTAINS_CHANGE	259023	23.926697
1	MODIFIES	259023	23.926697
2	UPDATES	170401	15.740429
3	CREATES	61192	5.652480
4	DELETES	37976	3.507952
5	INVOKES	36005	3.325885
6	COMMITTED	25398	2.346086
7	DEPENDS_ON	21931	2.025829
8	OF_TYPE	21394	1.976225
9	DECLARES	20823	1.923480
10	OF_RAW_TYPE	17093	1.578929
11	HAS_PARENT	15380	1.420695
12	HAS	14125	1.304767
13	HAS_COMMIT	12699	1.173043
14	RETURNS	12578	1.161866
15	HAS_FILE	10809	0.998458
16	RENAMES	10546	0.974164
17	READS	9166	0.846690
18	HAS_ACTUAL_TYPE_ARGUMENT	8288	0.765586
19	HAS_NEW_NAME	6237	0.576130
20	OF_GENERIC_TYPE	5906	0.545554
21	RESOLVES_TO	5253	0.485235
22	SIMILAR	3977	0.367367
23	WRITES	3818	0.352680
24	CONTAINS	3814	0.352310
25	RETURNS_GENERIC	3545	0.327462
26	ANNOTATED_BY	2810	0.259568
27	REQUIRES	2174	0.200819
28	HAS_FIRST_CHILD	2144	0.198047
29	HAS_LAST_CHILD	2144	0.198047

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)

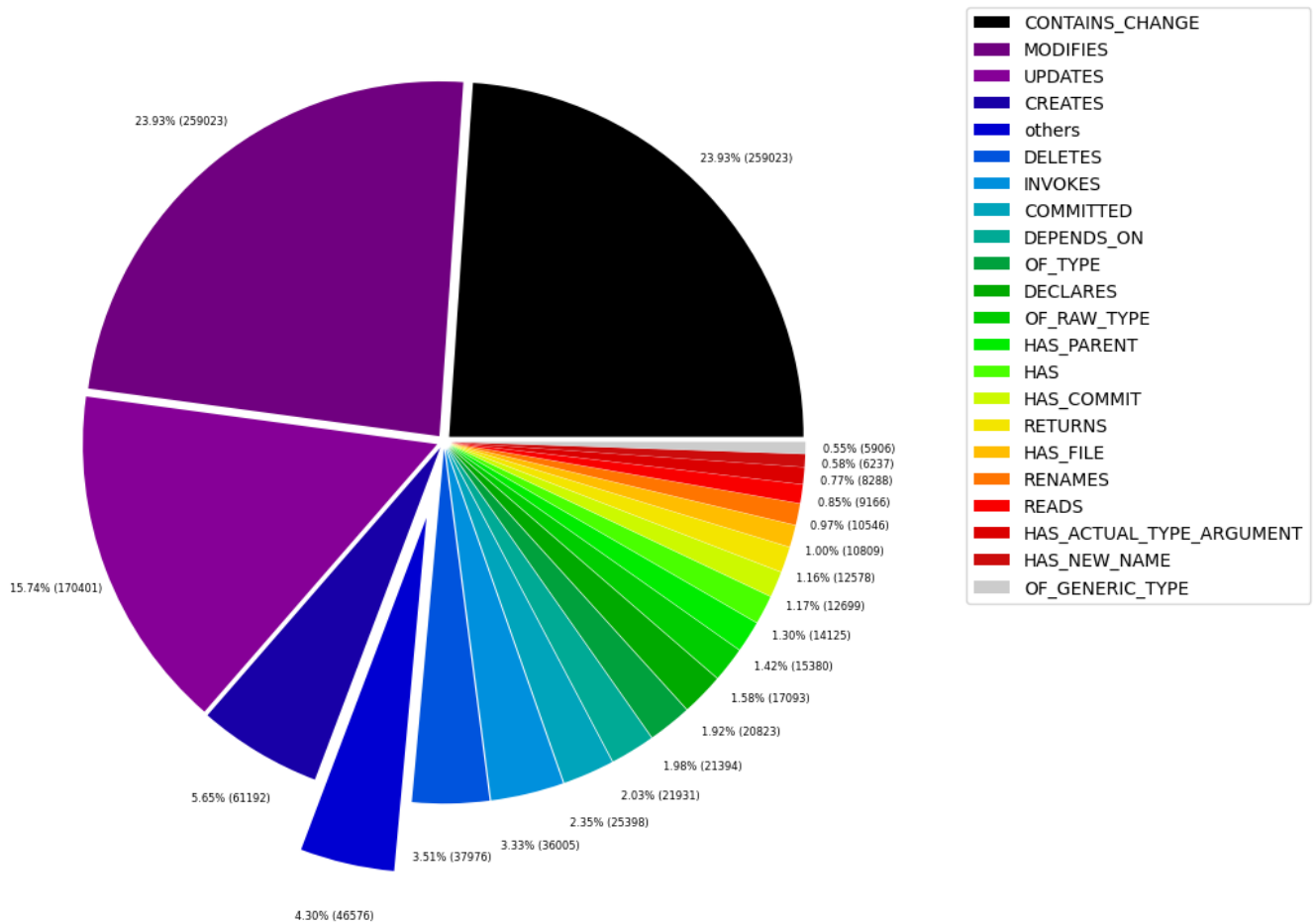


Table 2b - Lowest relationship count by type

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.

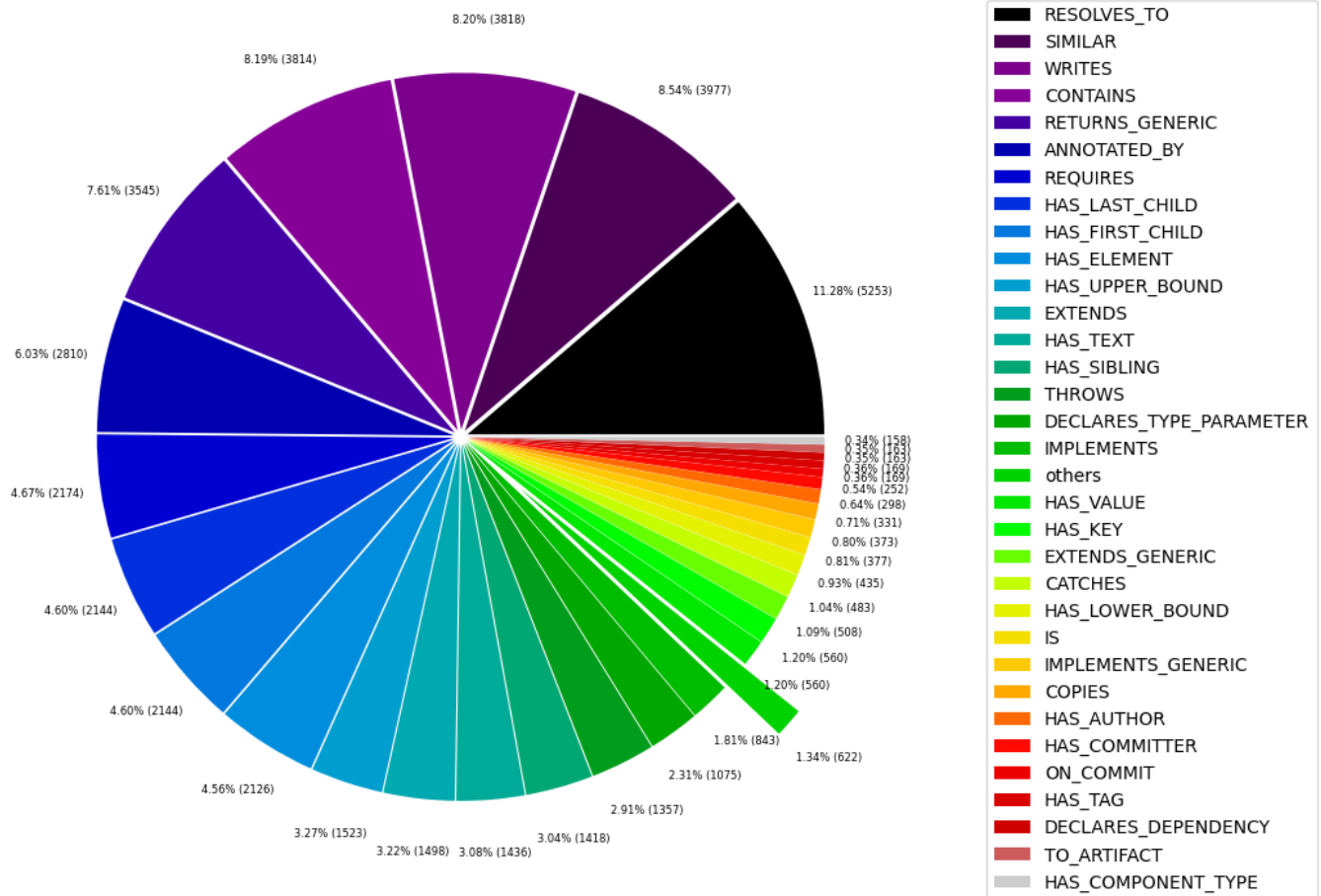
	relationshipType	nodesWithThatRelationshipType	nodesWithThatRelationshipTypePercent
0	HAS_PROPERTY	1	0.000092
1	THROWS_GENERIC	5	0.000462
2	EXCLUDES	5	0.000462
3	DESCRIBES	9	0.000831
4	HAS_ROOT_ELEMENT	13	0.001201
5	HAS_GOAL	16	0.001478
6	HAS_EXECUTION	16	0.001478
7	OF_NAMESPACE	18	0.001663
8	HAS_ATTRIBUTE	18	0.001663
9	INCLUDES_CONCEPT	19	0.001755
10	USES_PLUGIN	21	0.001940
11	IS_ARTIFACT	21	0.001940
12	HAS_CONFIGURATION	21	0.001940
13	REQUIRES_TYPE_PARAMETER	21	0.001940
14	REQUIRES_CONCEPT	28	0.002586
15	HAS_BRANCH	35	0.003233
16	DECLARES_NAMESPACE	36	0.003325
17	HAS_HEAD	36	0.003325
18	HAS_DEFAULT	36	0.003325
19	CONTAINS_VALUE	121	0.011177
20	COPY_OF	126	0.011639
21	HAS_COMPONENT_TYPE	158	0.014595
22	DECLARES_DEPENDENCY	163	0.015057
23	TO_ARTIFACT	163	0.015057
24	ON_COMMIT	169	0.015611
25	HAS_TAG	169	0.015611
26	HAS_COMMITTER	252	0.023278
27	HAS_AUTHOR	298	0.027527
28	COPIES	331	0.030575
29	IMPLEMENTS_GENERIC	373	0.034455

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, Change]	MODIFIES	[File, Git]	259023	259023	
1	[Git, Commit]	CONTAINS_CHANGE	[Git, Change]	259023	12699	
2	[Git, Change]	UPDATES	[File, Git]	170401	259023	
3	[Git, Change]	CREATES	[File, Git]	61192	259023	
4	[Git, Change]	DELETES	[File, Git]	37976	259023	
5	[Java, ByteCode, Member, Method]	INVOKES	[Java, ByteCode, Member, Method]	21955	13192	
6	[Git, Commit]	HAS_PARENT	[Git, Commit]	15371	12699	
7	[Repository, File, Git]	HAS_COMMIT	[Git, Commit]	12699	1	
8	[Author, Git, Person]	COMMITTED	[Git, Commit]	12699	298	
9	[Committer, Git, Person]	COMMITTED	[Git, Commit]	12699	252	
10	[Repository, File, Git]	HAS_FILE	[File, Git]	10809	1	
11	[Git, Change]	RENAMES	[File, Git]	10546	259023	
12	[Java, ByteCode, Member, Method]	HAS	[Java, ByteCode, Parameter]	8361	13192	
13	[Java, ByteCode, Member, Method]	READS	[Java, ByteCode, Member, Field]	8192	13192	
14	[File, Git]	HAS_NEW_NAME	[File, Git]	6237	10809	
15	[Java, ByteCode, Parameter]	OF_TYPE	[Type, File, Java, ByteCode, JavaType]	6079	13029	
16	[Type, File, Java, ByteCode, Class]	DECLARES	[Java, ByteCode, Member, Method]	5013	760	
17	[Type, File, Java, ByteCode, Class]	DEPENDS_ON	[Type, File, Java, ByteCode, JavaType]	3995	760	
18	[Java, ByteCode, Bound]	OF_RAW_TYPE	[Type, File, Java, ByteCode, JavaType]	3427	7118	
19	[Java, ByteCode, ParameterizedType, Bound]	OF_RAW_TYPE	[Type, File, Java, ByteCode, JavaType]	3053	7176	
20	[Java, ByteCode, ParameterizedType, Bound]	HAS_ACTUAL_TYPE_ARGUMENT	[Java, ByteCode, Bound, WildcardType]	2908	7176	
21	[Java, ByteCode, Parameter]	OF_GENERIC_TYPE	[Java, ByteCode, ParameterizedType, Bound]	2657	13029	
22	[Java, ByteCode, ParameterizedType, Bound]	HAS_ACTUAL_TYPE_ARGUMENT	[Java, ByteCode, Bound, TypeVariable]	2454	7176	
23	[Java, ByteCode, Member, Constructor, Method]	WRITES	[Java, ByteCode, Member, Field]	2438	2068	
24	[Java, Value, ByteCode, Annotation]	OF_TYPE	[Type, File, Java, ByteCode, ExternalAnnotatio...	2341	2822	
25	[Xml, Element]	HAS_ELEMENT	[Xml, Element]	2126	2144	
26	[Java, ByteCode, Member, Constructor, Method]	INVOKES	[Java, ByteCode, Member, Constructor, Method]	2123	2068	
27	[Type, File, Java, ByteCode, Class]	DECLARES	[Java, ByteCode, Member, Field]	2090	760	
28	[Java, ByteCode, Member, Method]	RETURNS	[Type, File, Java, ByteCode, JavaType]	2078	13192	
29	[Type, File, Java, ByteCode, Class, GenericDec...	DECLARES	[Java, ByteCode, Member, Method]	2070	229	

Graph Density

```
total_number_of_nodes (vertices): 348629
total_number_of_relationships (edges): 1082569
-> total directed graph density: 8.906966358710825e-06
-> total directed graph density in percent: 0.0008906966358710824
```