

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]	258357	74.256094
1	[Java, ByteCode, Member, Method]	13247	3.807408
2	[Java, ByteCode, Parameter]	13029	3.744751
3	[Git, Commit]	12699	3.649904
4	[File, Git]	10809	3.106686
5	[Java, ByteCode, ParameterizedType, Bound]	7176	2.062502
6	[Java, ByteCode, Bound]	7118	2.045831
7	[Java, ByteCode, Member, Field]	3509	1.008545
8	[Java, ByteCode, Bound, WildcardType]	2908	0.835808
9	[Java, Value, ByteCode, Annotation]	2822	0.811090
10	[Xml, Element]	2144	0.616221
11	[Java, ByteCode, Member, Constructor, Method]	2069	0.594665
12	[Xml, Text]	1436	0.412730
13	[Java, ByteCode, Bound, TypeVariable]	1096	0.315009
14	[Java, ByteCode, Member, Method, Lambda]	942	0.270746
15	[Type, File, Java, ByteCode, ResolvedDuplicate...	877	0.252064
16	[Type, File, Java, ByteCode, Class]	810	0.232807
17	[Java, Value, ByteCode, Primitive]	652	0.187396
18	[Type, File, Java, ByteCode, JavaType]	644	0.185096
19	[Java, ByteCode, Member, Method, GenericDeclar...	569	0.163540
20	[Json, Key]	560	0.160953
21	[Value, Json, Scalar]	544	0.156355
22	[Type, File, Java, ByteCode, ExternalType]	380	0.109218
23	[Author, Git, Person]	298	0.085650
24	[Value, Array]	267	0.076740
25	[Committer, Git, Person]	252	0.072429
26	[Type, File, Java, ByteCode, Class, GenericDec...	236	0.067830
27	[Value, Property]	202	0.058058
28	[Type, File, Java, ByteCode, Interface]	188	0.054034
29	[Java, Value, ByteCode, Class]	172	0.049436

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)

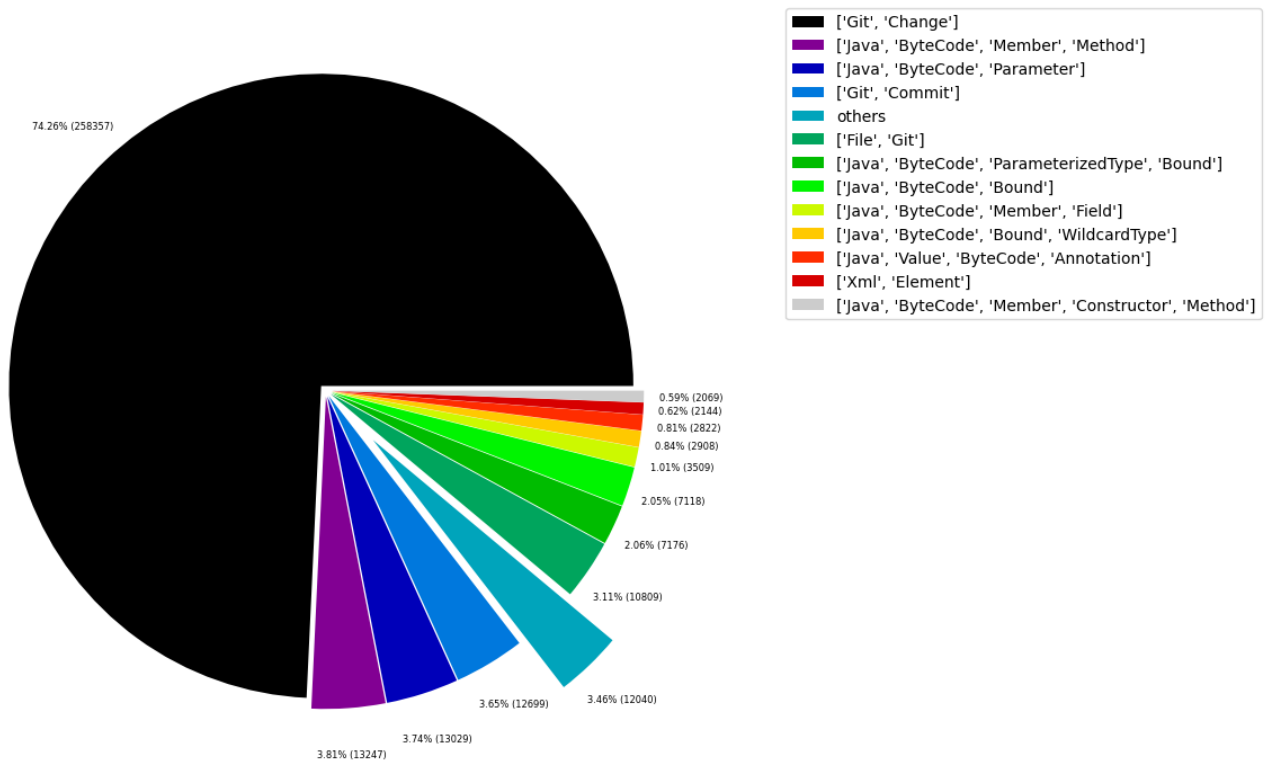


Table 1b - Lowest node count by label combination

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	0.000575
3	[File]	3	0.000862
4	[Java, ByteCode, Member, Constructor, Method, ...]	4	0.001150
5	[Maven, Exclusion]	5	0.001437
6	[Value, Json, Array]	6	0.001724
7	[File, Maven, Xml, Pom, Document]	9	0.002587
8	[Type, File, Java, ByteCode, Void]	9	0.002587
9	[Java, ManifestSection]	9	0.002587
10	[File, Java, Manifest]	9	0.002587
11	[Artifact, File, Jar, Archive, Zip, Java]	9	0.002587
12	[File, Java, ServiceLoader]	10	0.002874
13	[File, Java, Properties]	12	0.003449
14	[Maven, ExecutionGoal]	16	0.004599
15	[Maven, PluginExecution]	16	0.004599
16	[Type, File, Java, ByteCode, Throwable, Extern...	16	0.004599
17	[Xml, Attribute]	18	0.005173
18	[jQAssistant, Rule, Concept]	19	0.005461
19	[Maven, Plugin]	21	0.006036
20	[Maven, Configuration]	21	0.006036
21	[Type, File, Java, ByteCode, Throwable, Resolv...	22	0.006323
22	[Type, File, Java, ByteCode, Enum]	28	0.008048
23	[Type, File, Java, ByteCode, PrimitiveType]	29	0.008335
24	[Xml, Namespace]	36	0.010347
25	[Git, Branch]	37	0.010634
26	[Type, File, Java, ByteCode, Annotation]	43	0.012359
27	[File, Directory]	44	0.012646
28	[Type, File, Java, ByteCode, Class, Throwable]	54	0.015520
29	[Type, File, Java, ByteCode, GenericDeclaratio...	85	0.024430

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)

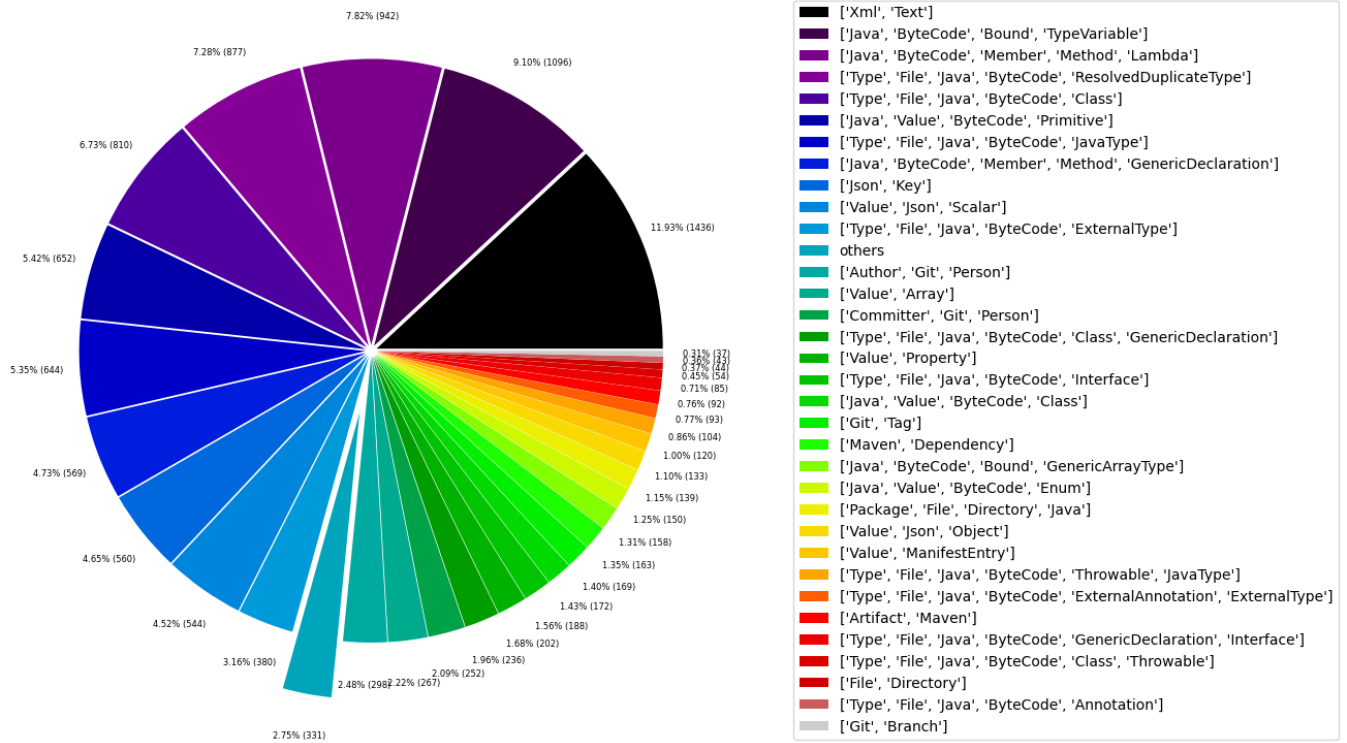


Table 1c - Highest node count by single label

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.

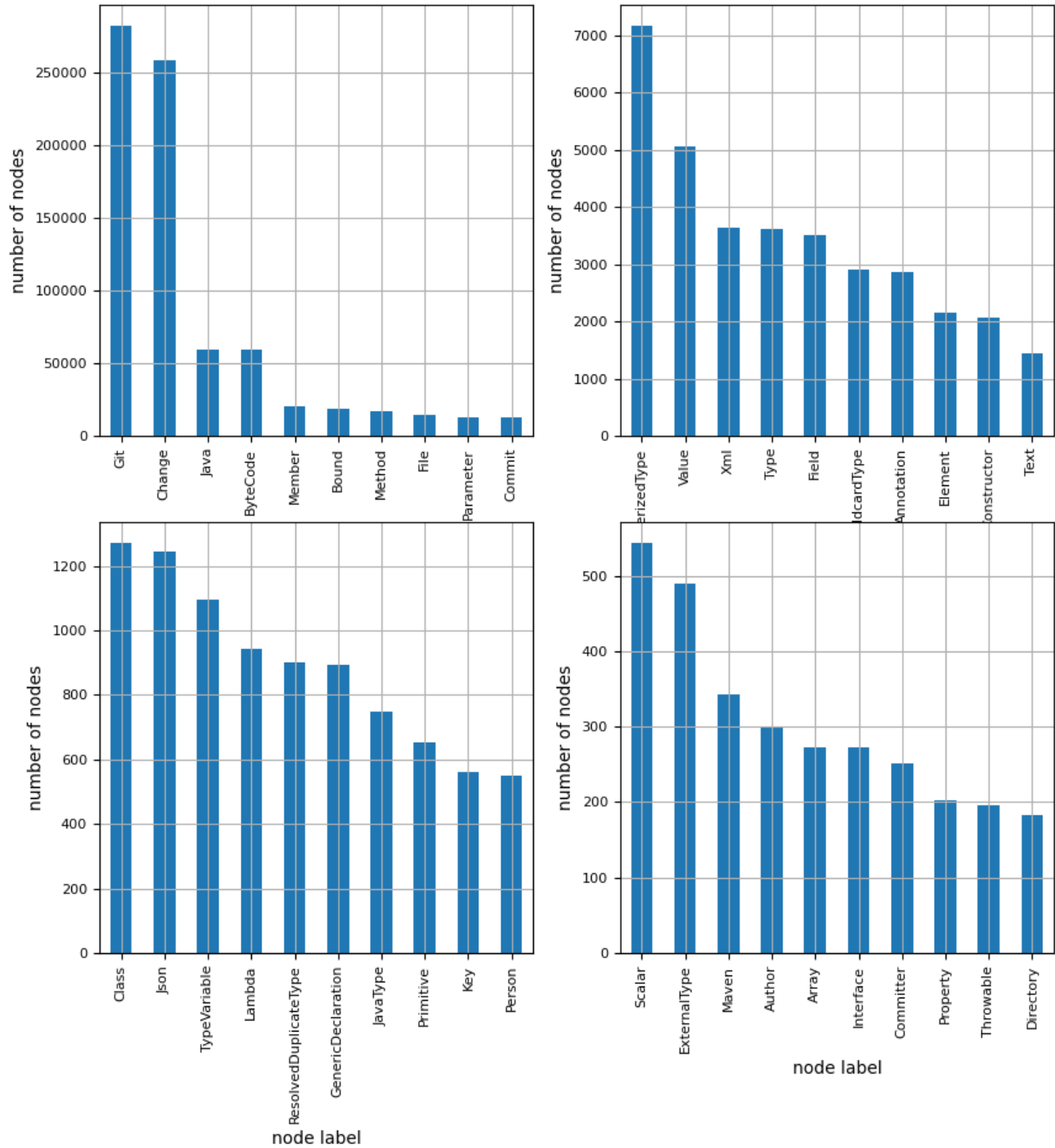
	nodeLabel	nodesWithThatLabel	nodesWithThatLabelPercent
0	Git	282622	81.230258
1	Change	258357	74.256094
2	Java	59427	17.080307
3	ByteCode	59239	17.026273
4	Member	20340	5.846054
5	Bound	18456	5.304561
6	Method	16831	4.837509
7	File	14665	4.214965
8	Parameter	13029	3.744751
9	Commit	12699	3.649904
10	ParameterizedType	7176	2.062502
11	Value	5068	1.456627
12	Xml	3643	1.047059
13	Type	3618	1.039873
14	Field	3509	1.008545
15	WildcardType	2908	0.835808
16	Annotation	2865	0.823449
17	Element	2144	0.616221
18	Constructor	2073	0.595815
19	Text	1436	0.412730
20	Class	1272	0.365594
21	Json	1245	0.357834
22	TypeVariable	1096	0.315009
23	Lambda	942	0.270746
24	ResolvedDuplicateType	899	0.258388
25	GenericDeclaration	894	0.256950
26	JavaType	748	0.214988
27	Primitive	652	0.187396
28	Key	560	0.160953
29	Person	550	0.158079
30	Scalar	544	0.156355
31	ExternalType	489	0.140547
32	Maven	343	0.098584
33	Author	298	0.085650
34	Array	273	0.078465
35	Interface	273	0.078465
36	Committer	252	0.072429
37	Property	202	0.058058
38	Throwable	196	0.056334
39	Directory	183	0.052597

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: 1080283

	relationshipType	nodesWithThatRelationshipType	nodesWithThatRelationshipTypePercent
0	CONTAINS_CHANGE	258357	23.915678
1	MODIFIES	258357	23.915678
2	UPDATES	169780	15.716252
3	CREATES	61161	5.661572
4	DELETES	37961	3.513987
5	INVOKES	35775	3.311632
6	COMMITTED	25398	2.351051
7	DEPENDS_ON	21931	2.030116
8	OF_TYPE	21394	1.980407
9	DECLARES	20785	1.924033
10	OF_RAW_TYPE	17093	1.582271
11	HAS_PARENT	15378	1.423516
12	HAS	14125	1.307528
13	HAS_COMMIT	12699	1.175525
14	RETURNS	12578	1.164325
15	HAS_FILE	10809	1.000571
16	RENAMES	10545	0.976133
17	READS	9161	0.848019
18	HAS_ACTUAL_TYPE_ARGUMENT	8288	0.767206
19	HAS_NEW_NAME	6237	0.577349
20	OF_GENERIC_TYPE	5906	0.546709
21	RESOLVES_TO	5238	0.484873
22	SIMILAR	3977	0.368144
23	WRITES	3818	0.353426
24	CONTAINS	3814	0.353056
25	RETURNS_GENERIC	3545	0.328155
26	ANNOTATED_BY	2810	0.260117
27	REQUIRES	2174	0.201244
28	HAS_FIRST_CHILD	2144	0.198467
29	HAS_LAST_CHILD	2144	0.198467

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)

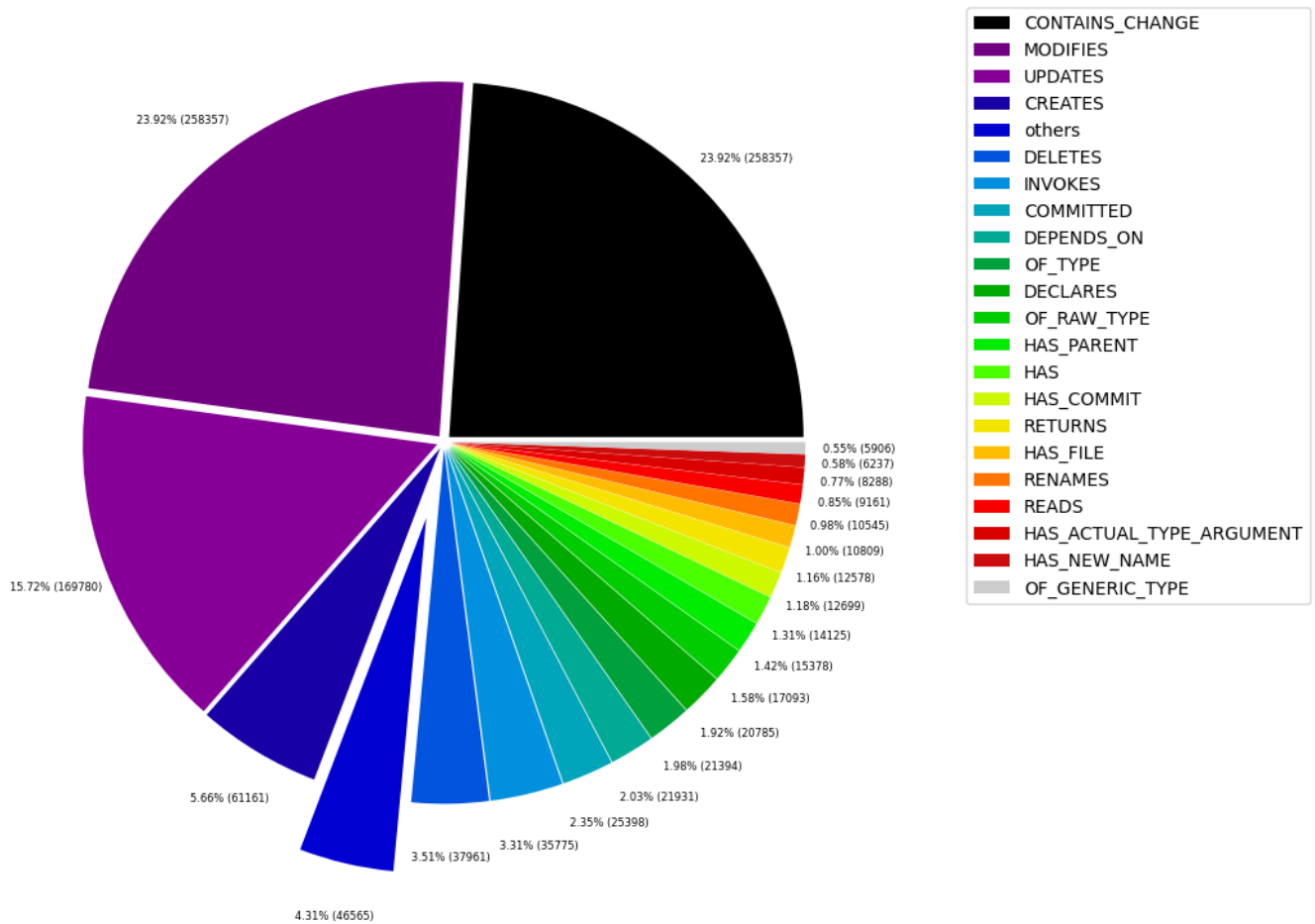


Table 2b - Lowest relationship count by type

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.

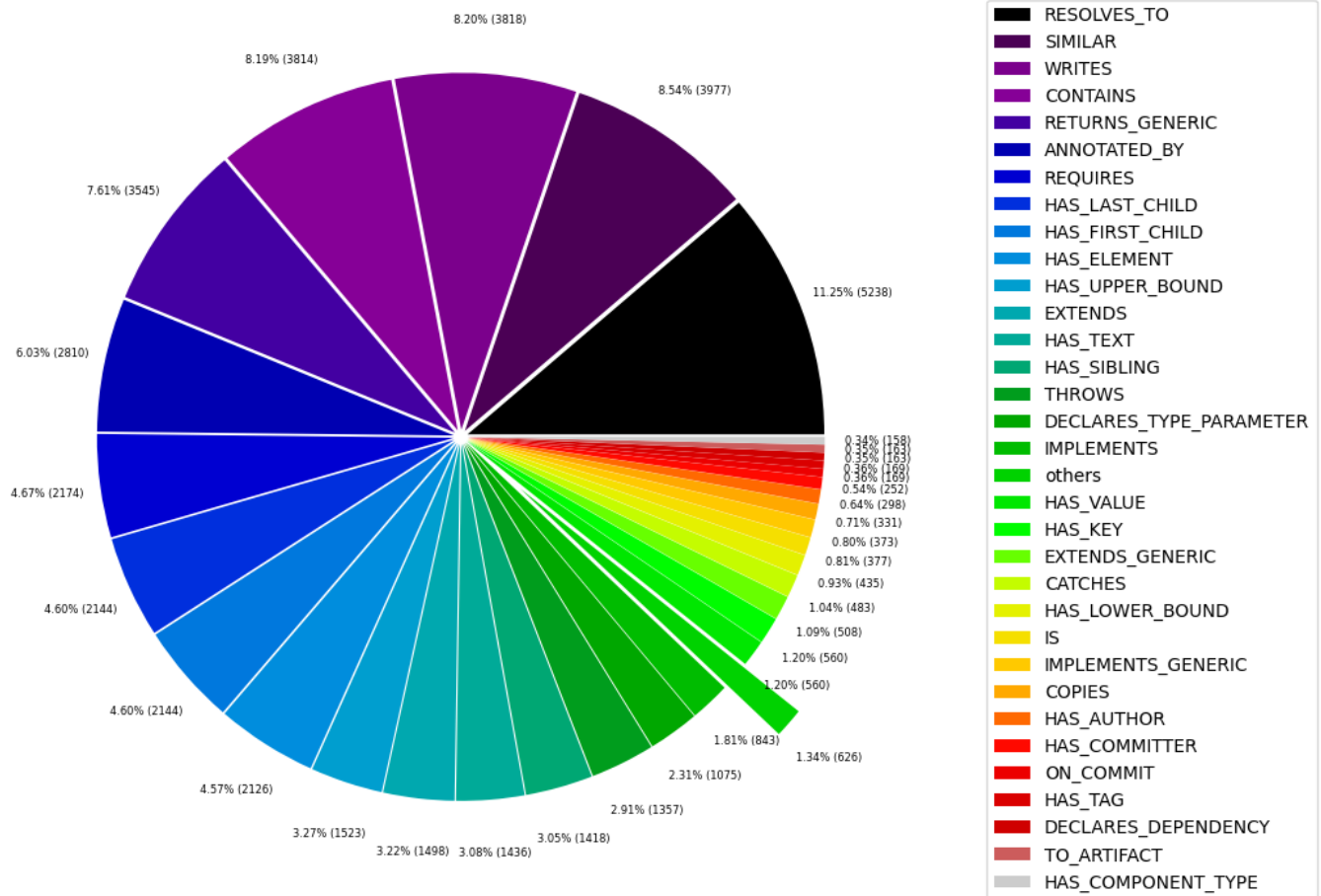
	relationshipType	nodesWithThatRelationshipType	nodesWithThatRelationshipTypePercent
0	HAS_PROPERTY	1	0.000093
1	THROWS_GENERIC	5	0.000463
2	EXCLUDES	5	0.000463
3	DESCRIBES	9	0.000833
4	HAS_ROOT_ELEMENT	13	0.001203
5	HAS_GOAL	16	0.001481
6	HAS_EXECUTION	16	0.001481
7	OF_NAMESPACE	18	0.001666
8	HAS_ATTRIBUTE	18	0.001666
9	INCLUDES_CONCEPT	19	0.001759
10	USES_PLUGIN	21	0.001944
11	IS_ARTIFACT	21	0.001944
12	HAS_CONFIGURATION	21	0.001944
13	REQUIRES_TYPE_PARAMETER	21	0.001944
14	REQUIRES_CONCEPT	28	0.002592
15	HAS_DEFAULT	36	0.003332
16	DECLARES_NAMESPACE	36	0.003332
17	HAS_BRANCH	37	0.003425
18	HAS_HEAD	38	0.003518
19	CONTAINS_VALUE	121	0.011201
20	COPY_OF	126	0.011664
21	HAS_COMPONENT_TYPE	158	0.014626
22	DECLARES_DEPENDENCY	163	0.015089
23	TO_ARTIFACT	163	0.015089
24	ON_COMMIT	169	0.015644
25	HAS_TAG	169	0.015644
26	HAS_COMMITTER	252	0.023327
27	HAS_AUTHOR	298	0.027585
28	COPIES	331	0.030640
29	IMPLEMENTS_GENERIC	373	0.034528

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]	258357	258357	
1	[Git, Commit]	CONTAINS_CHANGE	[Git, Change]	258357	12699	
2	[Git, Change]	UPDATES	[File, Git]	169780	258357	
3	[Git, Change]	CREATES	[File, Git]	61161	258357	
4	[Git, Change]	DELETES	[File, Git]	37961	258357	
5	[Java, ByteCode, Member, Method]	INVOKES	[Java, ByteCode, Member, Method]	21674	13151	
6	[Git, Commit]	HAS_PARENT	[Git, Commit]	15369	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]	10545	258357	
12	[Java, ByteCode, Member, Method]	HAS	[Java, ByteCode, Parameter]	8357	13151	
13	[Java, ByteCode, Member, Method]	READS	[Java, ByteCode, Member, Field]	8189	13151	
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]	5005	761	
17	[Type, File, Java, ByteCode, Class]	DEPENDS_ON	[Type, File, Java, ByteCode, JavaType]	3996	761	
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	2069	
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]	2124	2069	
27	[Type, File, Java, ByteCode, Class]	DECLARES	[Java, ByteCode, Member, Field]	2091	761	
28	[Java, ByteCode, Member, Method]	RETURNS	[Type, File, Java, ByteCode, JavaType]	2078	13151	
29	[Type, File, Java, ByteCode, Class, GenericDec...	DECLARES	[Java, ByteCode, Member, Method]	2072	229	

Graph Density

```
total_number_of_nodes (vertices): 347927
total_number_of_relationships (edges): 1080283
-> total directed graph density: 8.924060898496718e-06
-> total directed graph density in percent: 0.0008924060898496718
```