

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]	254236	74.056510
1	[Java, ByteCode, Member, Method]	13196	3.843868
2	[Java, ByteCode, Parameter]	13029	3.795223
3	[Git, Commit]	12338	3.593941
4	[File, Git]	10742	3.129042
5	[Java, ByteCode, Bound, ParameterizedType]	7176	2.090300
6	[Java, ByteCode, Bound]	7118	2.073405
7	[Java, ByteCode, Member, Field]	3505	1.020973
8	[Java, ByteCode, Bound, WildcardType]	2908	0.847073
9	[Java, Value, ByteCode, Annotation]	2822	0.822022
10	[Xml, Element]	2144	0.624527
11	[Java, ByteCode, Member, Method, Constructor]	2051	0.597437
12	[Xml, Text]	1436	0.418293
13	[Java, ByteCode, Bound, TypeVariable]	1096	0.319254
14	[Java, ByteCode, Member, Method, Lambda]	942	0.274396
15	[Type, File, Java, ByteCode, ResolvedDuplicate...	899	0.261870
16	[Type, File, Java, ByteCode, Class]	864	0.251675
17	[Type, File, Java, ByteCode, JavaType]	748	0.217885
18	[Java, Value, ByteCode, Primitive]	652	0.189921
19	[Java, ByteCode, GenericDeclaration, Member, M...	569	0.165744
20	[Json, Key]	560	0.163123
21	[Value, Json, Scalar]	544	0.158462
22	[Type, File, Java, ByteCode, ExternalType]	396	0.115351
23	[Author, Git, Person]	298	0.086805
24	[Value, Array]	267	0.077775
25	[Committer, Git, Person]	252	0.073405
26	[Type, File, Java, ByteCode, Class, GenericDec...	236	0.068745
27	[Value, Property]	202	0.058841
28	[Type, File, Java, ByteCode, Interface]	188	0.054763
29	[Java, Value, ByteCode, Class]	172	0.050102

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)

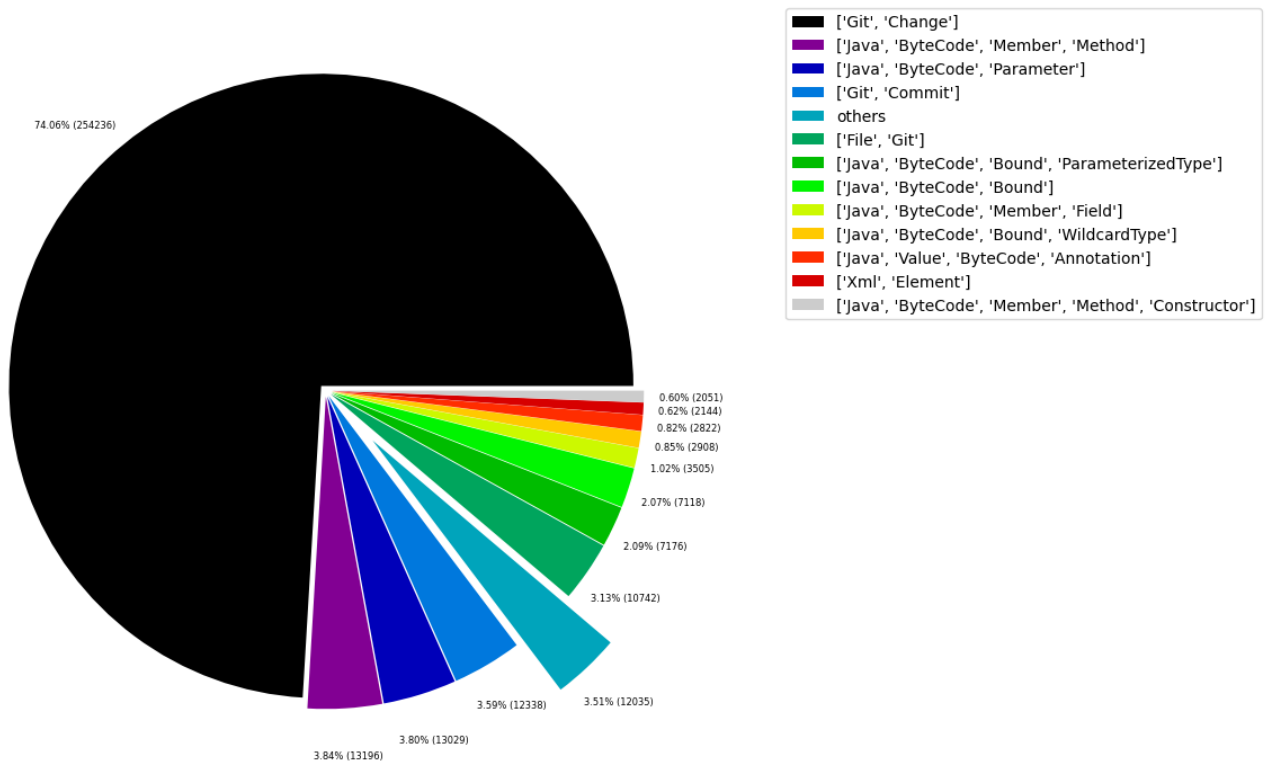


Table 1b - Lowest node count by label combination

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	0.000291
1	[Repository, File, Git]	1	0.000291
2	[File, Json]	2	0.000583
3	[File]	3	0.000874
4	[Java, ByteCode, GenericDeclaration, Member, M...	4	0.001165
5	[Maven, Exclusion]	5	0.001456
6	[Value, Array, Json]	6	0.001748
7	[Type, File, Java, ByteCode, Void]	9	0.002622
8	[File, Maven, Xml, Pom, Document]	9	0.002622
9	[Java, ManifestSection]	9	0.002622
10	[File, Java, Manifest]	9	0.002622
11	[Artifact, File, Jar, Archive, Zip, Java]	9	0.002622
12	[File, Java, ServiceLoader]	10	0.002913
13	[File, Java, Properties]	12	0.003495
14	[Maven, ExecutionGoal]	16	0.004661
15	[Maven, PluginExecution]	16	0.004661
16	[Xml, Attribute]	18	0.005243
17	[jQAssistant, Rule, Concept]	19	0.005535
18	[Maven, Plugin]	21	0.006117
19	[Maven, Configuration]	21	0.006117
20	[Type, File, Java, ByteCode, Enum]	28	0.008156
21	[Type, File, Java, ByteCode, PrimitiveType]	29	0.008447
22	[Git, Branch]	32	0.009321
23	[Xml, Namespace]	36	0.010486
24	[Type, File, Java, ByteCode, Annotation]	43	0.012525
25	[File, Directory]	44	0.012817
26	[Type, File, Java, ByteCode, GenericDeclaratio...	85	0.024760
27	[Artifact, Maven]	92	0.026799
28	[Type, File, Java, ByteCode, ExternalAnnotatio...	93	0.027090
29	[Value, ManifestEntry]	120	0.034955

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)

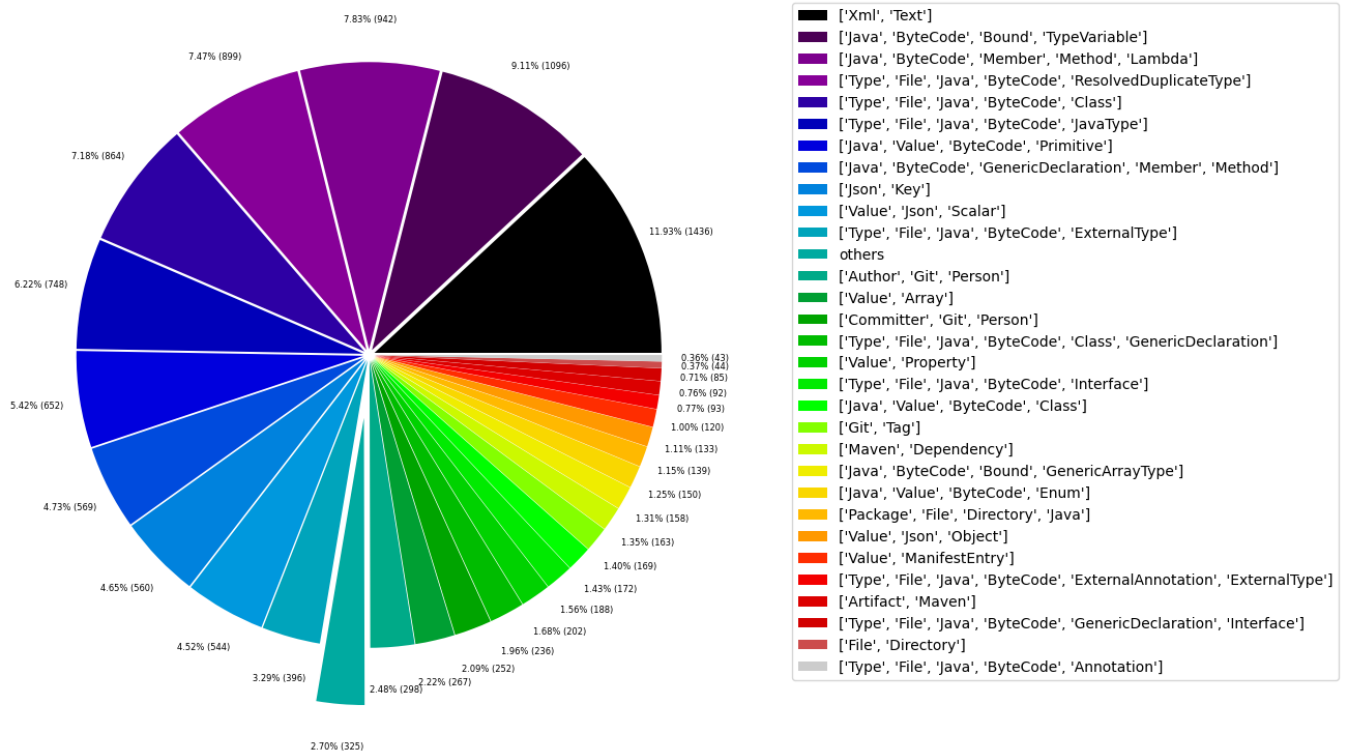


Table 1c - Highest node count by single label

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.

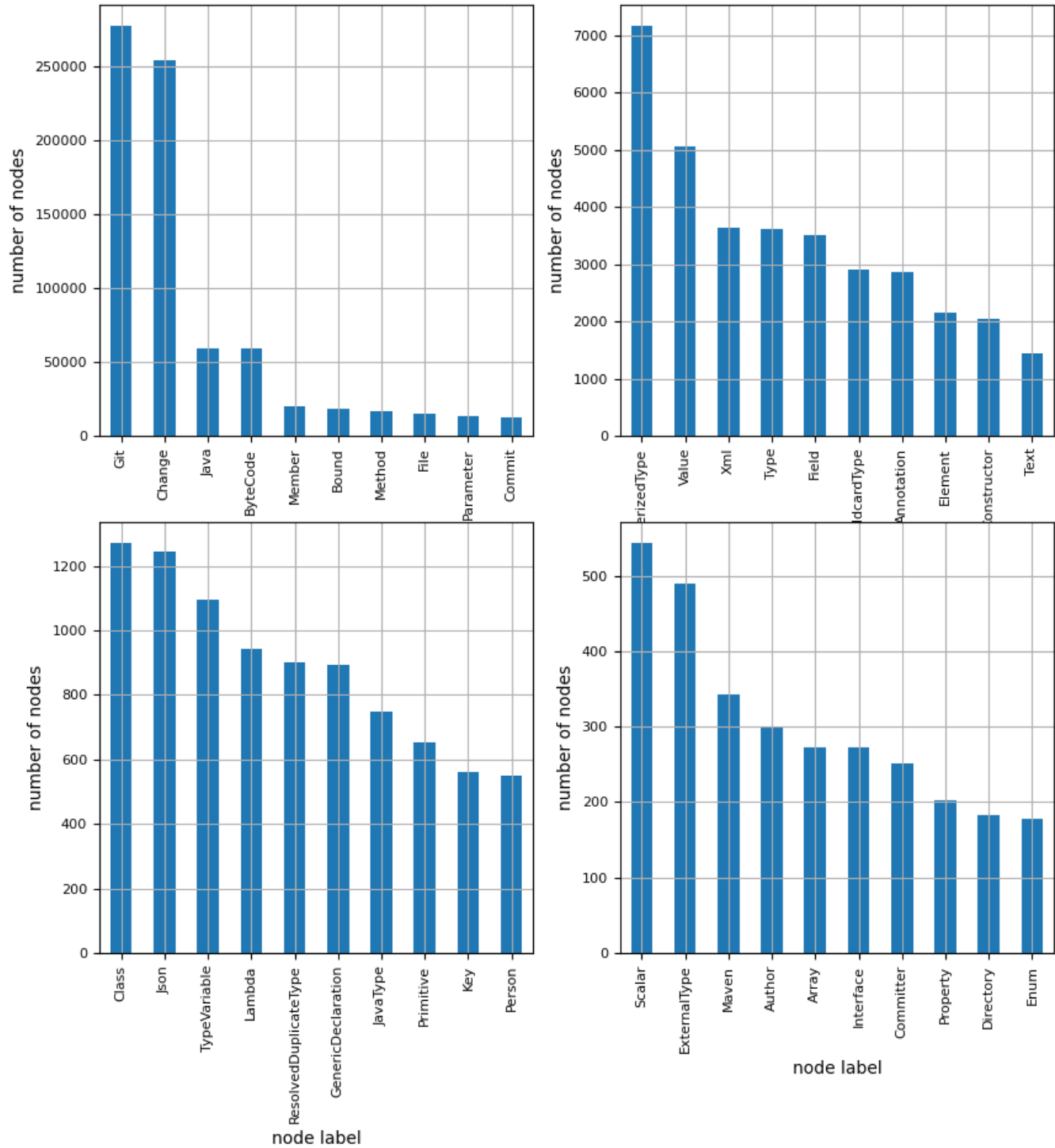
	nodeLabel	nodesWithThatLabel	nodesWithThatLabelPercent
0	Git	278068	80.998544
1	Change	254236	74.056510
2	Java	59354	17.289251
3	ByteCode	59166	17.234489
4	Member	20267	5.903583
5	Bound	18456	5.376056
6	Method	16762	4.882610
7	File	14598	4.252258
8	Parameter	13029	3.795223
9	Commit	12338	3.593941
10	ParameterizedType	7176	2.090300
11	Value	5068	1.476260
12	Xml	3643	1.061171
13	Type	3618	1.053889
14	Field	3505	1.020973
15	WildcardType	2908	0.847073
16	Annotation	2865	0.834547
17	Element	2144	0.624527
18	Constructor	2055	0.598602
19	Text	1436	0.418293
20	Class	1272	0.370521
21	Json	1245	0.362657
22	TypeVariable	1096	0.319254
23	Lambda	942	0.274396
24	ResolvedDuplicateType	899	0.261870
25	GenericDeclaration	894	0.260414
26	JavaType	748	0.217885
27	Primitive	652	0.189921
28	Key	560	0.163123
29	Person	550	0.160210
30	Scalar	544	0.158462
31	ExternalType	489	0.142441
32	Maven	343	0.099913
33	Author	298	0.086805
34	Array	273	0.079522
35	Interface	273	0.079522
36	Committer	252	0.073405
37	Property	202	0.058841
38	Directory	183	0.053306
39	Enum	178	0.051850

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: 1065422

	relationshipType	nodesWithThatRelationshipType	nodesWithThatRelationshipTypePercent
0	CONTAINS_CHANGE	254236	23.862470
1	MODIFIES	254236	23.862470
2	UPDATES	166325	15.611185
3	CREATES	60615	5.689295
4	DELETES	37745	3.542728
5	INVOKES	35663	3.347312
6	COMMITTED	24676	2.316078
7	DEPENDS_ON	21931	2.058433
8	OF_TYPE	21394	2.008031
9	DECLARES	20712	1.944018
10	OF_RAW_TYPE	17093	1.604341
11	HAS_PARENT	14987	1.406673
12	HAS	14125	1.325766
13	RETURNS	12578	1.180565
14	HAS_COMMIT	12338	1.158039
15	HAS_FILE	10742	1.008239
16	RENAMES	10449	0.980738
17	READS	9164	0.860129
18	HAS_ACTUAL_TYPE_ARGUMENT	8288	0.777908
19	HAS_NEW_NAME	6211	0.582961
20	OF_GENERIC_TYPE	5906	0.554334
21	RESOLVES_TO	5176	0.485817
22	SIMILAR	3977	0.373279
23	WRITES	3818	0.358356
24	CONTAINS	3814	0.357980
25	RETURNS_GENERIC	3545	0.332732
26	ANNOTATED_BY	2810	0.263745
27	REQUIRES	2174	0.204051
28	HAS_FIRST_CHILD	2144	0.201235
29	HAS_LAST_CHILD	2144	0.201235

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)

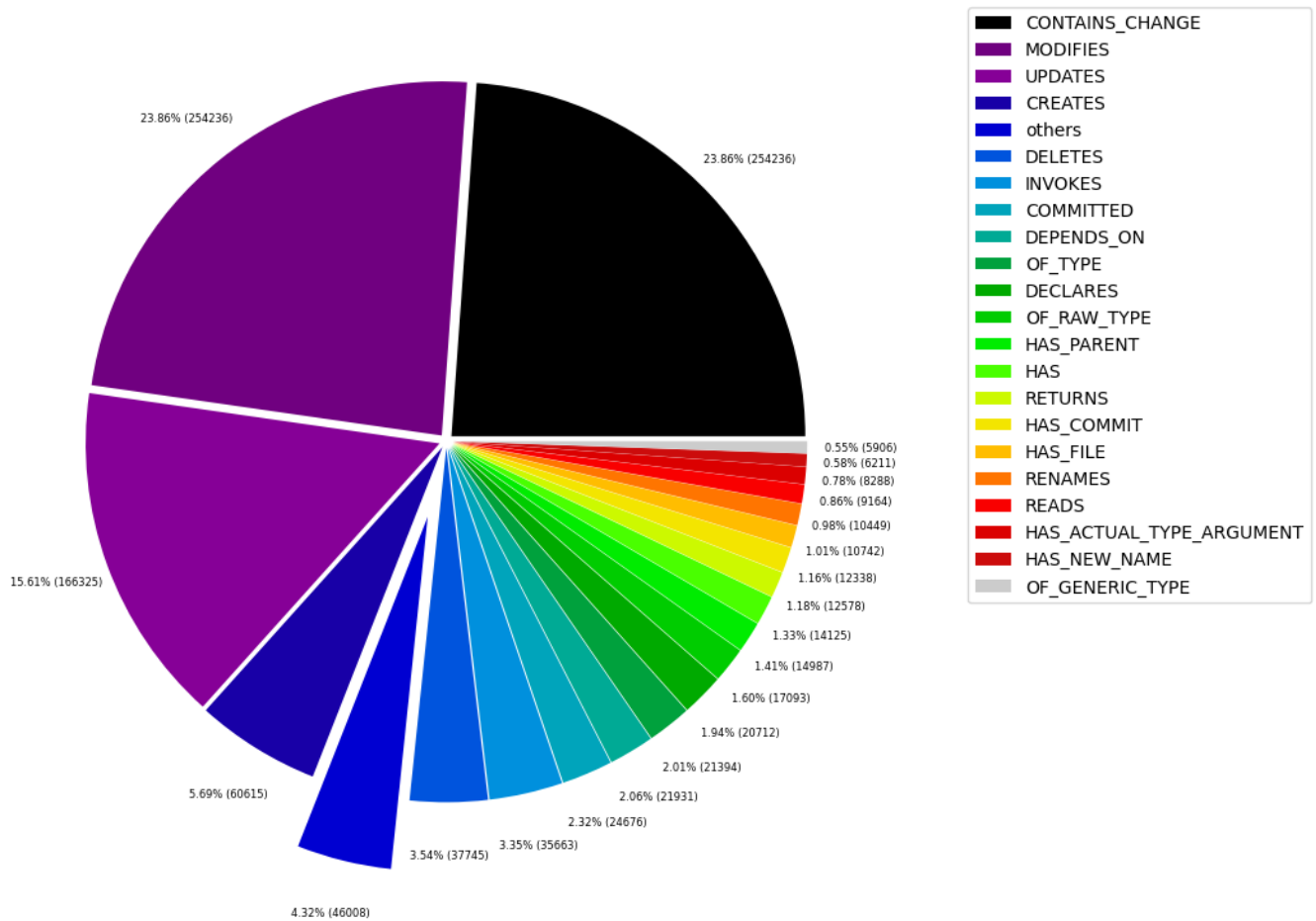


Table 2b - Lowest relationship count by type

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.

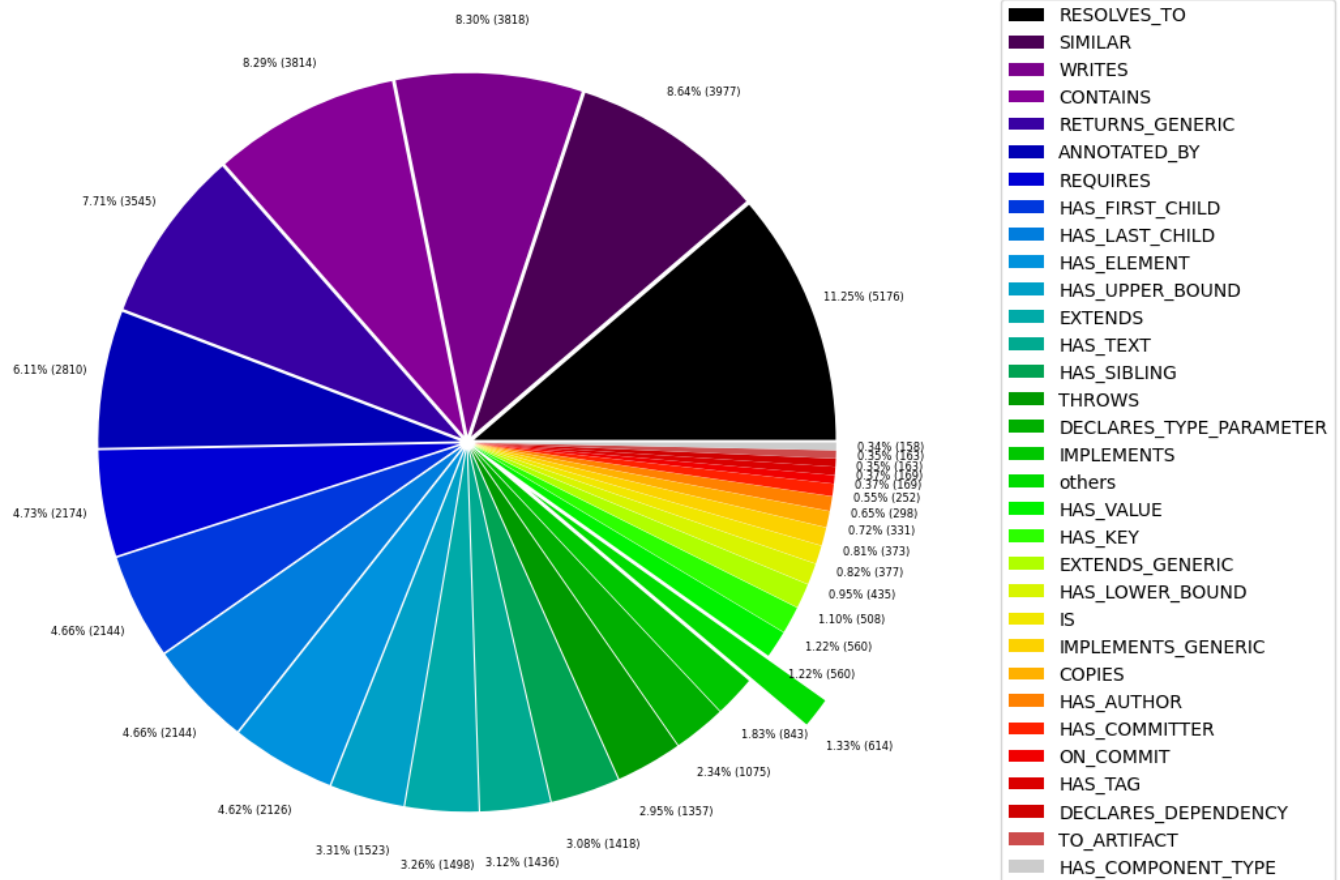
	relationshipType	nodesWithThatRelationshipType	nodesWithThatRelationshipTypePercent
0	HAS_PROPERTY	1	0.000094
1	THROWS_GENERIC	5	0.000469
2	EXCLUDES	5	0.000469
3	DESCRIBES	9	0.000845
4	HAS_ROOT_ELEMENT	11	0.001032
5	HAS_GOAL	16	0.001502
6	HAS_EXECUTION	16	0.001502
7	OF_NAMESPACE	18	0.001689
8	HAS_ATTRIBUTE	18	0.001689
9	INCLUDES_CONCEPT	19	0.001783
10	USES_PLUGIN	21	0.001971
11	REQUIRES_TYPE_PARAMETER	21	0.001971
12	IS_ARTIFACT	21	0.001971
13	HAS_CONFIGURATION	21	0.001971
14	REQUIRES_CONCEPT	28	0.002628
15	HAS_BRANCH	32	0.003004
16	HAS_HEAD	33	0.003097
17	DECLARES_NAMESPACE	36	0.003379
18	HAS_DEFAULT	36	0.003379
19	CONTAINS_VALUE	121	0.011357
20	COPY_OF	126	0.011826
21	HAS_COMPONENT_TYPE	158	0.014830
22	TO_ARTIFACT	163	0.015299
23	DECLARES_DEPENDENCY	163	0.015299
24	ON_COMMIT	169	0.015862
25	HAS_TAG	169	0.015862
26	HAS_COMMITTER	252	0.023653
27	HAS_AUTHOR	298	0.027970
28	COPIES	331	0.031068
29	IMPLEMENTS_GENERIC	373	0.035010

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]	254236	12338	
1	[Git, Change]	MODIFIES	[File, Git]	254236	254236	
2	[Git, Change]	UPDATES	[File, Git]	166325	254236	
3	[Git, Change]	CREATES	[File, Git]	60615	254236	
4	[Git, Change]	DELETES	[File, Git]	37745	254236	
5	[Java, ByteCode, Member, Method]	INVOKES	[Java, ByteCode, Member, Method]	21710	13102	
6	[Git, Commit]	HAS_PARENT	[Git, Commit]	14978	12338	
7	[Repository, File, Git]	HAS_COMMIT	[Git, Commit]	12338	1	
8	[Author, Git, Person]	COMMITTED	[Git, Commit]	12338	298	
9	[Committer, Git, Person]	COMMITTED	[Git, Commit]	12338	252	
10	[Repository, File, Git]	HAS_FILE	[File, Git]	10742	1	
11	[Git, Change]	RENAMES	[File, Git]	10449	254236	
12	[Java, ByteCode, Member, Method]	HAS	[Java, ByteCode, Parameter]	8362	13102	
13	[Java, ByteCode, Member, Method]	READS	[Java, ByteCode, Member, Field]	8218	13102	
14	[Java, ByteCode, Parameter]	OF_TYPE	[Type, File, Java, ByteCode, JavaType]	6371	13029	
15	[File, Git]	HAS_NEW_NAME	[File, Git]	6211	10742	
16	[Type, File, Java, ByteCode, Class]	DECLARES	[Java, ByteCode, Member, Method]	5101	814	
17	[Type, File, Java, ByteCode, Class]	DEPENDS_ON	[Type, File, Java, ByteCode, JavaType]	4480	814	
18	[Java, ByteCode, Bound]	OF_RAW_TYPE	[Type, File, Java, ByteCode, JavaType]	3570	7118	
19	[Java, ByteCode, Bound, ParameterizedType]	OF_RAW_TYPE	[Type, File, Java, ByteCode, JavaType]	3053	7176	
20	[Java, ByteCode, Bound, ParameterizedType]	HAS_ACTUAL_TYPE_ARGUMENT	[Java, ByteCode, Bound, WildcardType]	2908	7176	
21	[Java, ByteCode, Parameter]	OF_GENERIC_TYPE	[Java, ByteCode, Bound, ParameterizedType]	2657	13029	
22	[Java, ByteCode, Bound, ParameterizedType]	HAS_ACTUAL_TYPE_ARGUMENT	[Java, ByteCode, Bound, TypeVariable]	2454	7176	
23	[Java, ByteCode, Member, Method, Constructor]	WRITES	[Java, ByteCode, Member, Field]	2438	2051	
24	[Java, Value, ByteCode, Annotation]	OF_TYPE	[Type, File, Java, ByteCode, ExternalAnnotatio...	2341	2822	
25	[Type, File, Java, ByteCode, Class]	DECLARES	[Java, ByteCode, Member, Field]	2203	814	
26	[Xml, Element]	HAS_ELEMENT	[Xml, Element]	2126	2144	
27	[Java, ByteCode, Member, Method, Constructor]	INVOKES	[Java, ByteCode, Member, Method, Constructor]	2118	2051	
28	[Type, File, Java, ByteCode, Class, GenericDec...	DECLARES	[Java, ByteCode, Member, Method]	2115	231	
29	[Java, ByteCode, Member, Method]	RETURNS	[Type, File, Java, ByteCode, JavaType]	2091	13102	

Graph Density

```
total_number_of_nodes (vertices): 343300
total_number_of_relationships (edges): 1065422
-> total directed graph density: 9.040143378702589e-06
-> total directed graph density in percent: 0.0009040143378702589
```