

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]	254349	74.075401
1	[Java, ByteCode, Member, Method]	13191	3.841685
2	[Java, ByteCode, Parameter]	13029	3.794504
3	[Git, Commit]	12296	3.581029
4	[File, Git]	10743	3.128741
5	[Java, ByteCode, Bound, ParameterizedType]	7176	2.089904
6	[Java, ByteCode, Bound]	7118	2.073013
7	[Java, ByteCode, Member, Field]	3505	1.020780
8	[Java, ByteCode, Bound, WildcardType]	2908	0.846912
9	[Java, Value, ByteCode, Annotation]	2822	0.821866
10	[Xml, Element]	2144	0.624408
11	[Java, ByteCode, Member, Method, Constructor]	2051	0.597324
12	[Xml, Text]	1436	0.418214
13	[Java, ByteCode, Bound, TypeVariable]	1096	0.319194
14	[Java, ByteCode, Member, Method, Lambda]	942	0.274344
15	[Type, File, Java, ByteCode, ResolvedDuplicate...	899	0.261821
16	[Type, File, Java, ByteCode, Class]	864	0.251627
17	[Type, File, Java, ByteCode, JavaType]	748	0.217844
18	[Java, Value, ByteCode, Primitive]	652	0.189885
19	[Java, ByteCode, GenericDeclaration, Member, M...	569	0.165713
20	[Json, Key]	560	0.163092
21	[Value, Json, Scalar]	544	0.158432
22	[Type, File, Java, ByteCode, ExternalType]	396	0.115329
23	[Author, Git, Person]	298	0.086788
24	[Value, Array]	267	0.077760
25	[Committer, Git, Person]	252	0.073391
26	[Type, File, Java, ByteCode, Class, GenericDec...	236	0.068732
27	[Value, Property]	202	0.058830
28	[Type, File, Java, ByteCode, Interface]	188	0.054752
29	[Java, Value, ByteCode, Class]	172	0.050092

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)

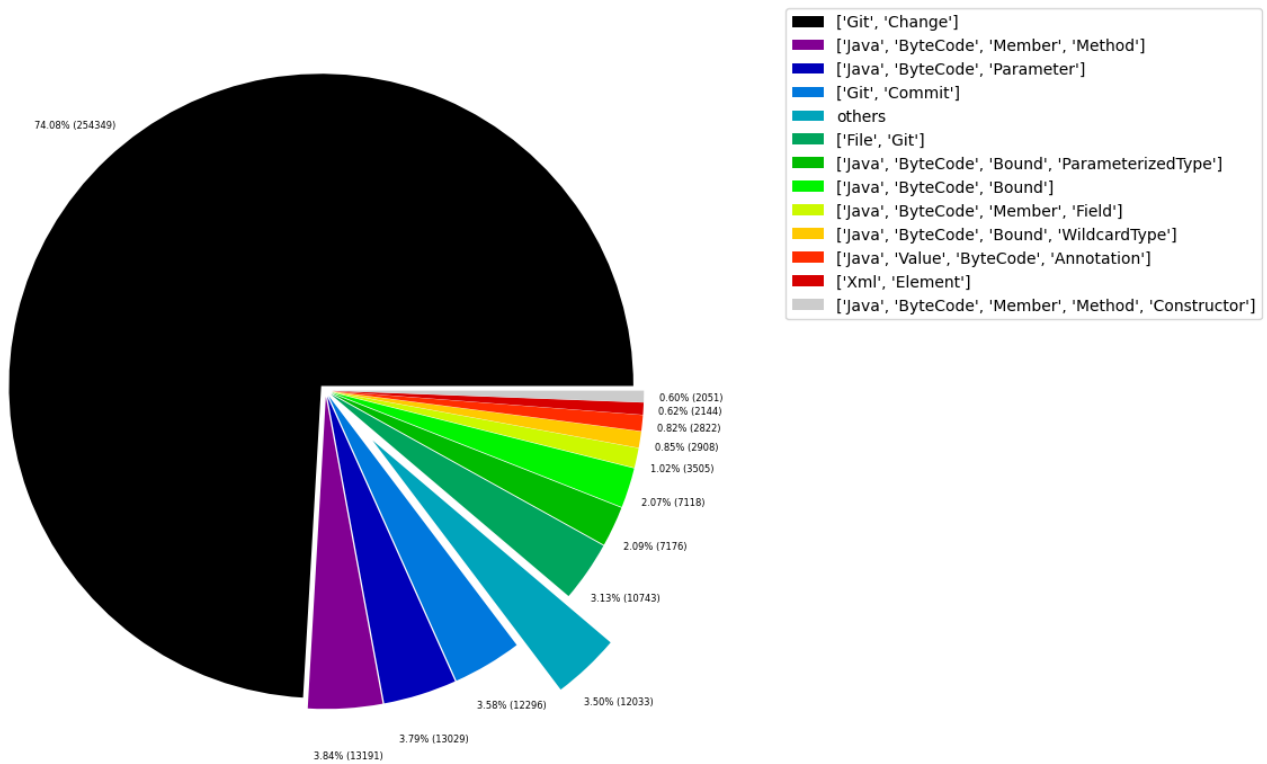


Table 1b - Lowest node count by label combination

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	0.000582
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	0.001747
7	[Type, File, Java, ByteCode, Void]	9	0.002621
8	[File, Maven, Xml, Pom, Document]	9	0.002621
9	[Java, ManifestSection]	9	0.002621
10	[File, Java, Manifest]	9	0.002621
11	[Artifact, File, Jar, Archive, Zip, Java]	9	0.002621
12	[File, Java, ServiceLoader]	10	0.002912
13	[File, Java, Properties]	12	0.003495
14	[Maven, ExecutionGoal]	16	0.004660
15	[Maven, PluginExecution]	16	0.004660
16	[Xml, Attribute]	18	0.005242
17	[jQAssistant, Rule, Concept]	19	0.005533
18	[Maven, Plugin]	21	0.006116
19	[Maven, Configuration]	21	0.006116
20	[Type, File, Java, ByteCode, Enum]	28	0.008155
21	[Type, File, Java, ByteCode, PrimitiveType]	29	0.008446
22	[Git, Branch]	30	0.008737
23	[Xml, Namespace]	36	0.010484
24	[Type, File, Java, ByteCode, Annotation]	43	0.012523
25	[File, Directory]	44	0.012814
26	[Type, File, Java, ByteCode, GenericDeclaratio...	85	0.024755
27	[Artifact, Maven]	92	0.026794
28	[Type, File, Java, ByteCode, ExternalAnnotatio...	93	0.027085
29	[Value, ManifestEntry]	120	0.034948

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)

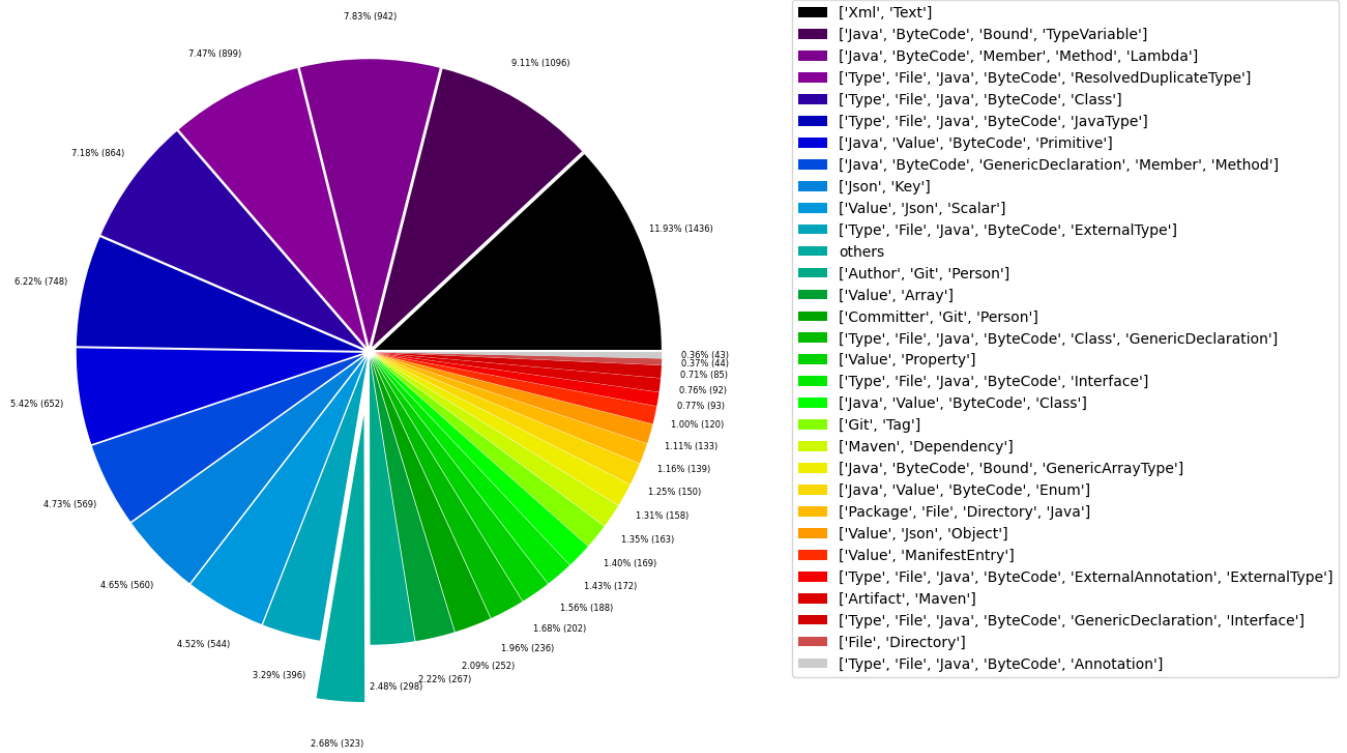


Table 1c - Highest node count by single label

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.

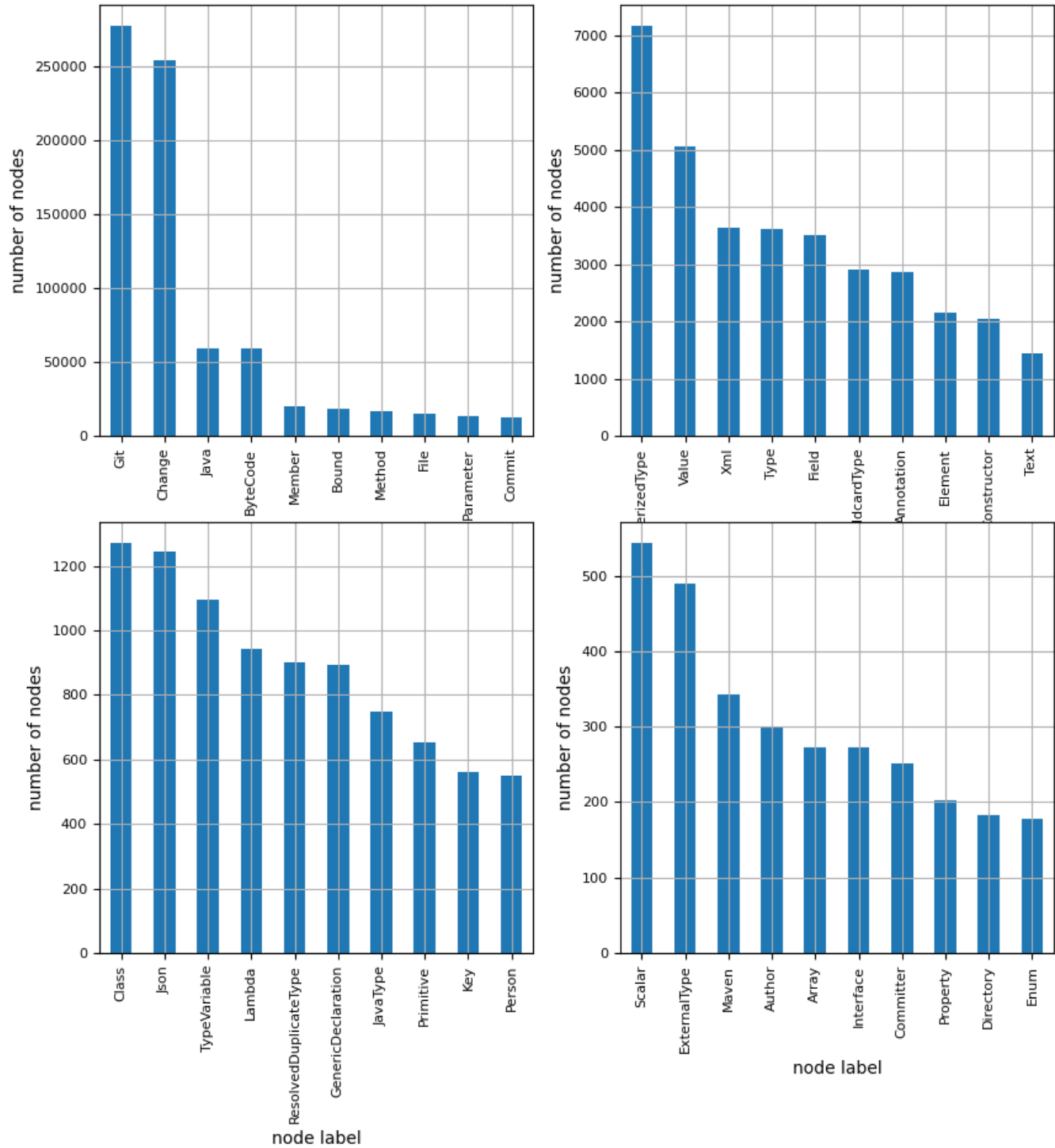
	nodeLabel	nodesWithThatLabel	nodesWithThatLabelPercent
0	Git	278138	81.003597
1	Change	254349	74.075401
2	Java	59349	17.284522
3	ByteCode	59161	17.229770
4	Member	20262	5.901009
5	Bound	18456	5.375038
6	Method	16757	4.880229
7	File	14599	4.251744
8	Parameter	13029	3.794504
9	Commit	12296	3.581029
10	ParameterizedType	7176	2.089904
11	Value	5068	1.475980
12	Xml	3643	1.060970
13	Type	3618	1.053689
14	Field	3505	1.020780
15	WildcardType	2908	0.846912
16	Annotation	2865	0.834389
17	Element	2144	0.624408
18	Constructor	2055	0.598488
19	Text	1436	0.418214
20	Class	1272	0.370451
21	Json	1245	0.362588
22	TypeVariable	1096	0.319194
23	Lambda	942	0.274344
24	ResolvedDuplicateType	899	0.261821
25	GenericDeclaration	894	0.260364
26	JavaType	748	0.217844
27	Primitive	652	0.189885
28	Key	560	0.163092
29	Person	550	0.160179
30	Scalar	544	0.158432
31	ExternalType	489	0.142414
32	Maven	343	0.099894
33	Author	298	0.086788
34	Array	273	0.079507
35	Interface	273	0.079507
36	Committer	252	0.073391
37	Property	202	0.058830
38	Directory	183	0.053296
39	Enum	178	0.051840

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: 1065593

	relationshipType	nodesWithThatRelationshipType	nodesWithThatRelationshipTypePercent
0	CONTAINS_CHANGE	254349	23.869245
1	MODIFIES	254349	23.869245
2	UPDATES	166350	15.611026
3	CREATES	60677	5.694200
4	DELETES	37782	3.545631
5	INVOKES	35654	3.345930
6	COMMITTED	24592	2.307823
7	DEPENDS_ON	21931	2.058103
8	OF_TYPE	21394	2.007708
9	DECLARES	20707	1.943237
10	OF_RAW_TYPE	17093	1.604083
11	HAS_PARENT	14944	1.402412
12	HAS	14125	1.325553
13	RETURNS	12578	1.180376
14	HAS_COMMIT	12296	1.153911
15	HAS_FILE	10743	1.008171
16	RENAMES	10460	0.981613
17	READS	9164	0.859991
18	HAS_ACTUAL_TYPE_ARGUMENT	8288	0.777783
19	HAS_NEW_NAME	6212	0.582962
20	OF_GENERIC_TYPE	5906	0.554245
21	RESOLVES_TO	5171	0.485270
22	SIMILAR	3977	0.373219
23	WRITES	3818	0.358298
24	CONTAINS	3814	0.357923
25	RETURNS_GENERIC	3545	0.332679
26	ANNOTATED_BY	2810	0.263703
27	REQUIRES	2174	0.204018
28	HAS_FIRST_CHILD	2144	0.201203
29	HAS_LAST_CHILD	2144	0.201203

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)

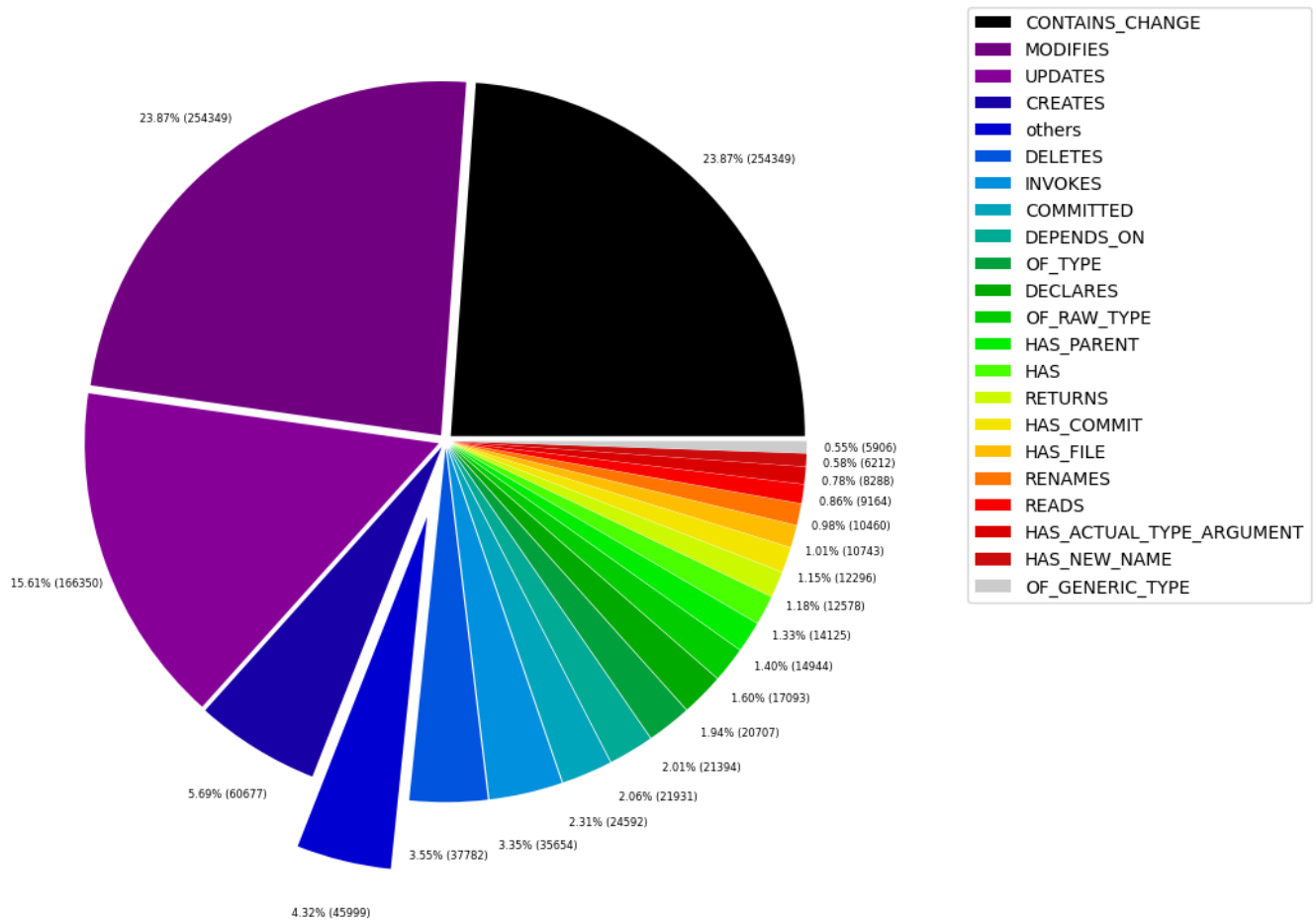


Table 2b - Lowest relationship count by type

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.

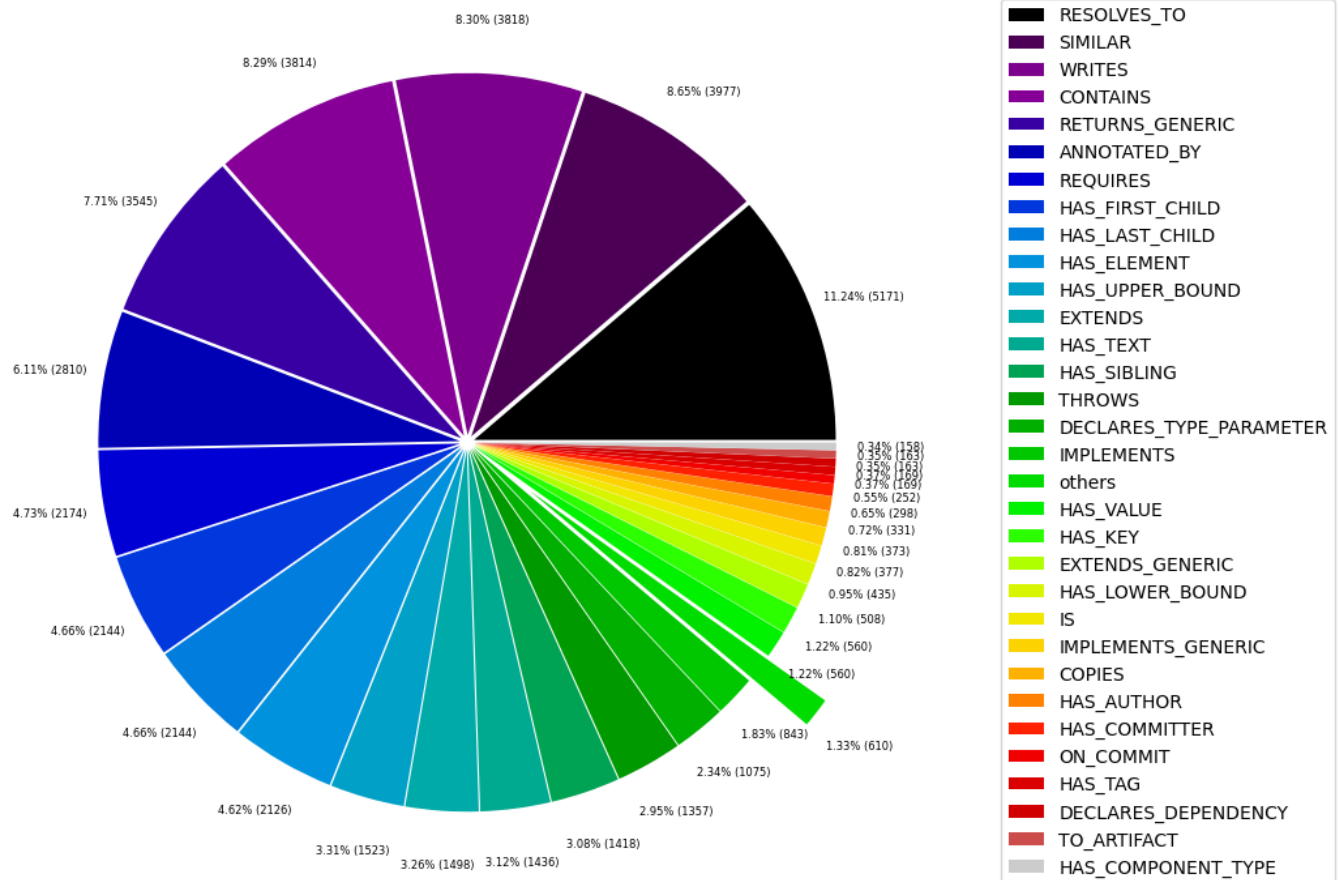
	relationshipType	nodesWithThatRelationshipType	nodesWithThatRelationshipTypePercent
0	HAS_PROPERTY	1	0.000094
1	THROWS_GENERIC	5	0.000469
2	EXCLUDES	5	0.000469
3	DESCRIBES	9	0.000845
4	HAS_ROOT_ELEMENT	11	0.001032
5	HAS_GOAL	16	0.001502
6	HAS_EXECUTION	16	0.001502
7	OF_NAMESPACE	18	0.001689
8	HAS_ATTRIBUTE	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	30	0.002815
16	HAS_HEAD	31	0.002909
17	DECLARES_NAMESPACE	36	0.003378
18	HAS_DEFAULT	36	0.003378
19	CONTAINS_VALUE	121	0.011355
20	COPY_OF	126	0.011824
21	HAS_COMPONENT_TYPE	158	0.014827
22	TO_ARTIFACT	163	0.015297
23	DECLARES_DEPENDENCY	163	0.015297
24	ON_COMMIT	169	0.015860
25	HAS_TAG	169	0.015860
26	HAS_COMMITTER	252	0.023649
27	HAS_AUTHOR	298	0.027966
28	COPIES	331	0.031063
29	IMPLEMENTS_GENERIC	373	0.035004

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]	254349		12296
1	[Git, Change]	MODIFIES	[File, Git]	254349		254349
2	[Git, Change]	UPDATES	[File, Git]	166350		254349
3	[Git, Change]	CREATES	[File, Git]	60677		254349
4	[Git, Change]	DELETES	[File, Git]	37782		254349
5	[Java, ByteCode, Member, Method]	INVOKES	[Java, ByteCode, Member, Method]	21702		13097
6	[Git, Commit]	HAS_PARENT	[Git, Commit]	14935		12296
7	[Repository, File, Git]	HAS_COMMIT	[Git, Commit]	12296		1
8	[Author, Git, Person]	COMMITTED	[Git, Commit]	12296		298
9	[Committer, Git, Person]	COMMITTED	[Git, Commit]	12296		252
10	[Repository, File, Git]	HAS_FILE	[File, Git]	10743		1
11	[Git, Change]	RENAMES	[File, Git]	10460		254349
12	[Java, ByteCode, Member, Method]	HAS	[Java, ByteCode, Parameter]	8362		13097
13	[Java, ByteCode, Member, Method]	READS	[Java, ByteCode, Member, Field]	8218		13097
14	[Java, ByteCode, Parameter]	OF_TYPE	[Type, File, Java, ByteCode, JavaType]	6371		13029
15	[File, Git]	HAS_NEW_NAME	[File, Git]	6212		10743
16	[Type, File, Java, ByteCode, Class]	DECLARES	[Java, ByteCode, Member, Method]	5108		814
17	[Type, File, Java, ByteCode, Class]	DEPENDS_ON	[Type, File, Java, ByteCode, JavaType]	4481		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]	2204		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		13097

Graph Density

```
total_number_of_nodes (vertices): 343365
total_number_of_relationships (edges): 1065593
-> total directed graph density: 9.038171438218179e-06
-> total directed graph density in percent: 0.0009038171438218179
```