

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]	248086	73.640498
1	[Java, ByteCode, Member, Method]	13201	3.918513
2	[Java, ByteCode, Parameter]	13016	3.863599
3	[Git, Commit]	12166	3.611289
4	[File, Git]	10694	3.174349
5	[Java, ByteCode, ParameterizedType, Bound]	7172	2.128897
6	[Java, ByteCode, Bound]	7113	2.111384
7	[Java, ByteCode, Member, Field]	3503	1.039811
8	[Java, ByteCode, Bound, WildcardType]	2908	0.863195
9	[Java, Value, ByteCode, Annotation]	2822	0.837667
10	[Xml, Element]	2144	0.636413
11	[Java, ByteCode, Member, Constructor, Method]	2043	0.606433
12	[Xml, Text]	1436	0.426254
13	[Java, ByteCode, Bound, TypeVariable]	1096	0.325331
14	[Java, ByteCode, Member, Method, Lambda]	938	0.278431
15	[Type, File, Java, ByteCode, ResolvedDuplicate...	900	0.267151
16	[Type, File, Java, ByteCode, Class]	861	0.255575
17	[Type, File, Java, ByteCode, JavaType]	748	0.222032
18	[Java, Value, ByteCode, Primitive]	650	0.192942
19	[Java, ByteCode, Member, Method, GenericDeclar...	569	0.168899
20	[Json, Key]	560	0.166227
21	[Value, Json, Scalar]	544	0.161478
22	[Type, File, Java, ByteCode, ExternalType]	396	0.117546
23	[Author, Git, Person]	295	0.087566
24	[Value, Array]	267	0.079255
25	[Committer, Git, Person]	250	0.074209
26	[Type, File, Java, ByteCode, Class, GenericDec...	236	0.070053
27	[Value, Property]	202	0.059961
28	[Type, File, Java, ByteCode, Interface]	187	0.055508
29	[Java, Value, ByteCode, Class]	172	0.051056

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)

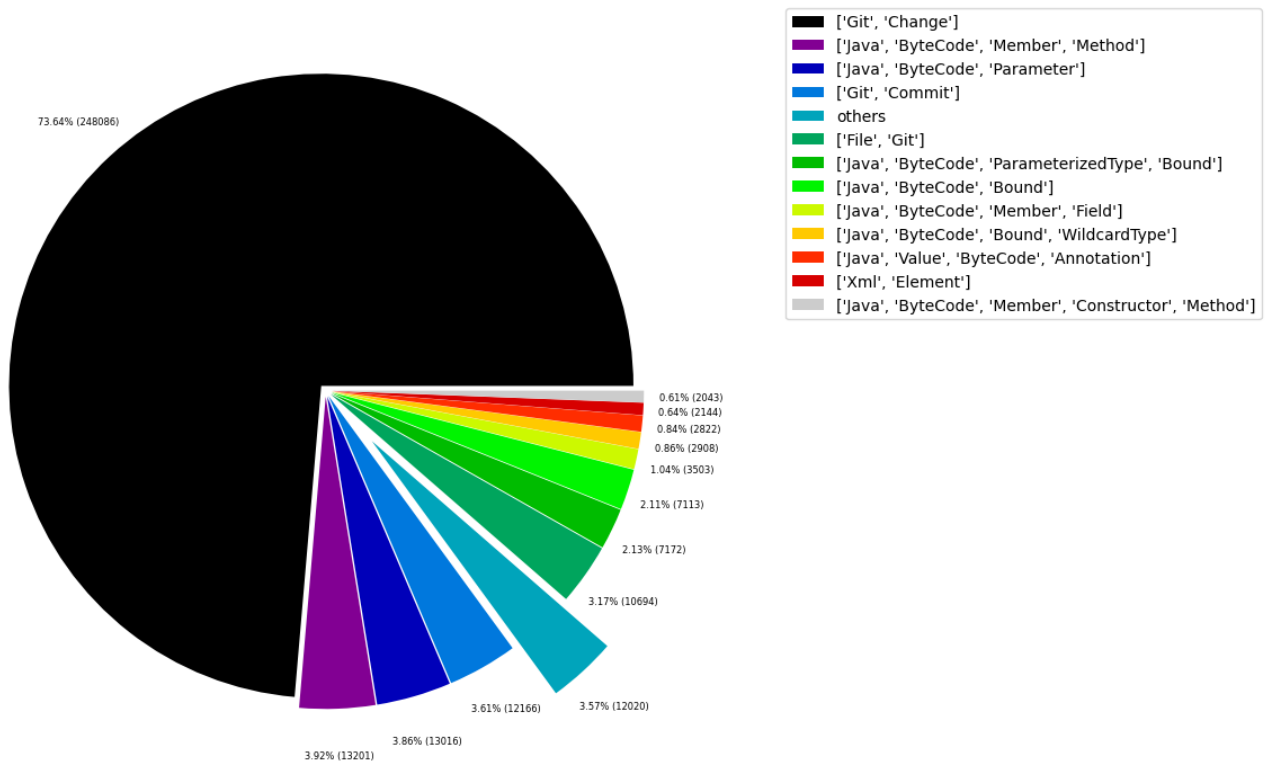


Table 1b - Lowest node count by label combination

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	0.000297
1	[Repository, File, Git]	1	0.000297
2	[File, Json]	2	0.000594
3	[File]	3	0.000891
4	[Java, ByteCode, Member, Constructor, Method, ...]	4	0.001187
5	[Maven, Exclusion]	5	0.001484
6	[Value, Json, Array]	6	0.001781
7	[File, Maven, Xml, Pom, Document]	9	0.002672
8	[Type, File, Java, ByteCode, Void]	9	0.002672
9	[Java, ManifestSection]	9	0.002672
10	[File, Java, Manifest]	9	0.002672
11	[Artifact, File, Jar, Archive, Zip, Java]	9	0.002672
12	[File, Java, ServiceLoader]	10	0.002968
13	[File, Java, Properties]	12	0.003562
14	[Maven, ExecutionGoal]	16	0.004749
15	[Maven, PluginExecution]	16	0.004749
16	[Xml, Attribute]	18	0.005343
17	[jQAssistant, Rule, Concept]	19	0.005640
18	[Maven, Plugin]	21	0.006234
19	[Maven, Configuration]	21	0.006234
20	[Type, File, Java, ByteCode, Enum]	28	0.008311
21	[Type, File, Java, ByteCode, PrimitiveType]	29	0.008608
22	[Git, Branch]	32	0.009499
23	[Xml, Namespace]	36	0.010686
24	[Type, File, Java, ByteCode, Annotation]	43	0.012764
25	[File, Directory]	44	0.013061
26	[Type, File, Java, ByteCode, GenericDeclaratio...	85	0.025231
27	[Artifact, Maven]	92	0.027309
28	[Type, File, Java, ByteCode, ExternalAnnotatio...	93	0.027606
29	[Value, ManifestEntry]	120	0.035620

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)

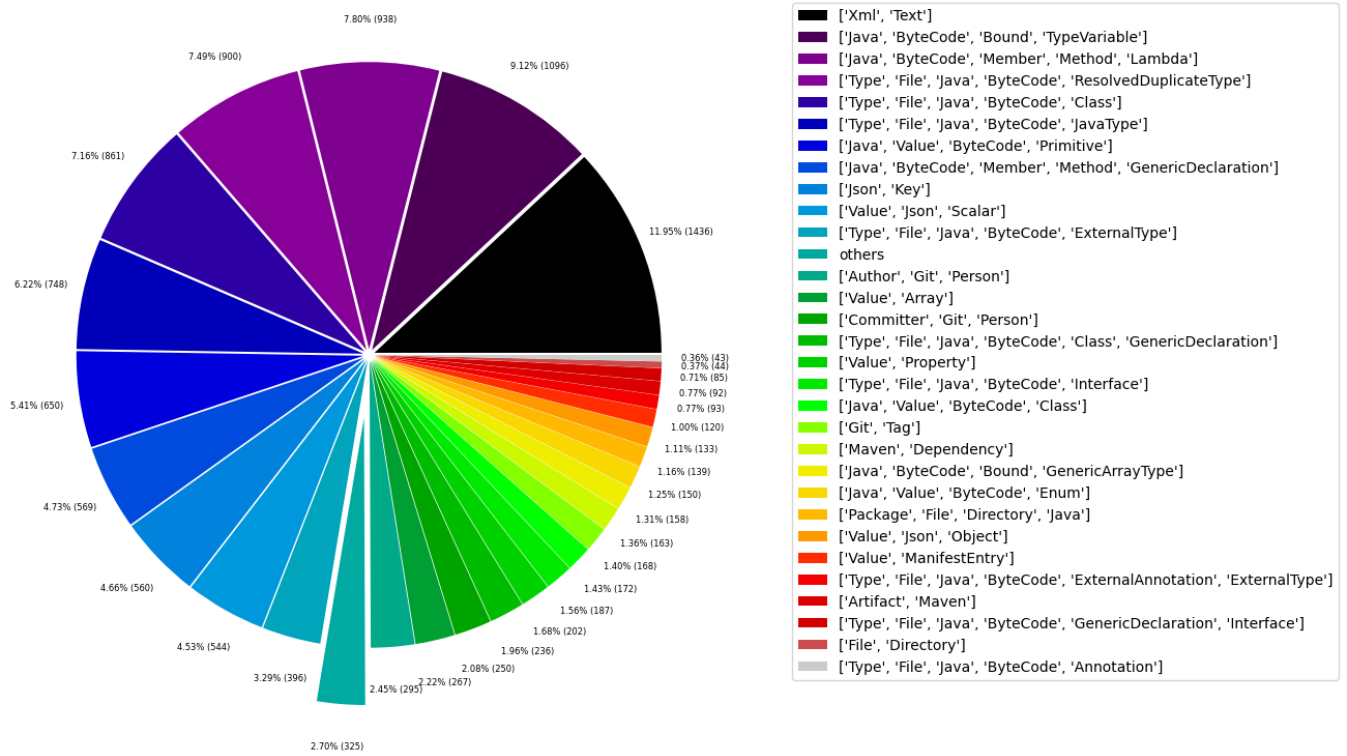


Table 1c - Highest node count by single label

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.

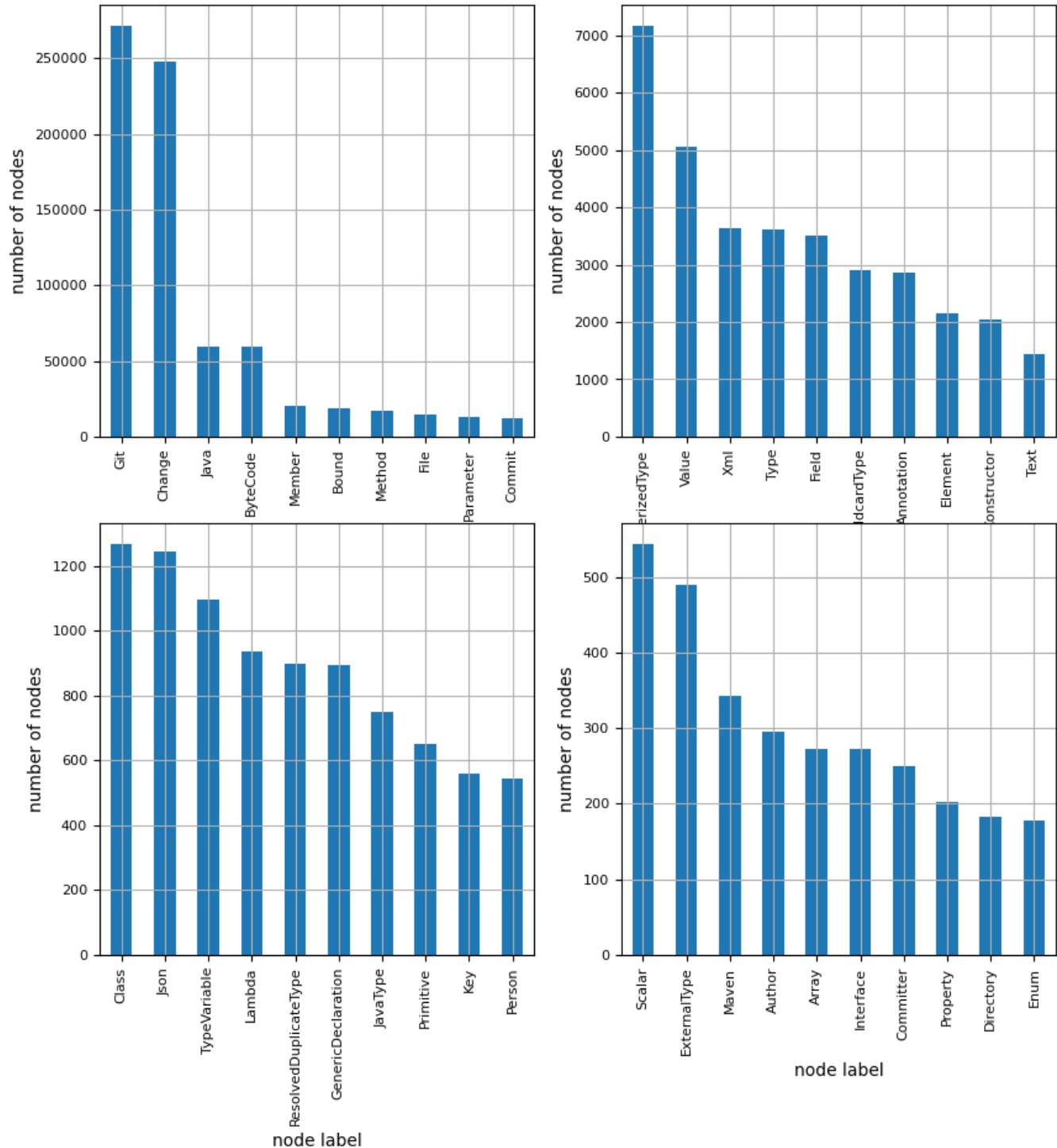
	nodeLabel	nodesWithThatLabel	nodesWithThatLabelPercent
0	Git	271692	80.647574
1	Change	248086	73.640498
2	Java	59318	17.607632
3	ByteCode	59130	17.551827
4	Member	20258	6.013274
5	Bound	18447	5.475707
6	Method	16755	4.973463
7	File	14547	4.318052
8	Parameter	13016	3.863599
9	Commit	12166	3.611289
10	ParameterizedType	7172	2.128897
11	Value	5066	1.503764
12	Xml	3643	1.081368
13	Type	3615	1.073057
14	Field	3503	1.039811
15	WildcardType	2908	0.863195
16	Annotation	2865	0.850431
17	Element	2144	0.636413
18	Constructor	2047	0.607620
19	Text	1436	0.426254
20	Class	1269	0.376683
21	Json	1245	0.369559
22	TypeVariable	1096	0.325331
23	Lambda	938	0.278431
24	ResolvedDuplicateType	900	0.267151
25	GenericDeclaration	894	0.265370
26	JavaType	748	0.222032
27	Primitive	650	0.192942
28	Key	560	0.166227
29	Person	545	0.161775
30	Scalar	544	0.161478
31	ExternalType	489	0.145152
32	Maven	343	0.101814
33	Author	295	0.087566
34	Array	273	0.081036
35	Interface	272	0.080739
36	Committer	250	0.074209
37	Property	202	0.059961
38	Directory	183	0.054321
39	Enum	178	0.052837

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: 1044995

	relationshipType	nodesWithThatRelationshipType	nodesWithThatRelationshipTypePercent
0	CONTAINS_CHANGE	248086	23.740401
1	MODIFIES	248086	23.740401
2	UPDATES	161390	15.444093
3	CREATES	59770	5.719645
4	DELETES	37216	3.561357
5	INVOKES	35680	3.414370
6	COMMITTED	24332	2.328432
7	DEPENDS_ON	21887	2.094460
8	OF_TYPE	21373	2.045273
9	DECLARES	20699	1.980775
10	OF_RAW_TYPE	17084	1.634840
11	HAS_PARENT	14784	1.414744
12	HAS	14110	1.350246
13	RETURNS	12562	1.202111
14	HAS_COMMIT	12166	1.164216
15	HAS_FILE	10694	1.023354
16	RENAMES	10290	0.984694
17	READS	9097	0.870530
18	HAS_ACTUAL_TYPE_ARGUMENT	8284	0.792731
19	HAS_NEW_NAME	6199	0.593209
20	OF_GENERIC_TYPE	5903	0.564883
21	RESOLVES_TO	5206	0.498184
22	SIMILAR	3968	0.379715
23	WRITES	3812	0.364786
24	CONTAINS	3806	0.364212
25	RETURNS_GENERIC	3543	0.339045
26	ANNOTATED_BY	2810	0.268901
27	REQUIRES	2175	0.208135
28	HAS_FIRST_CHILD	2144	0.205168
29	HAS_LAST_CHILD	2144	0.205168

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)

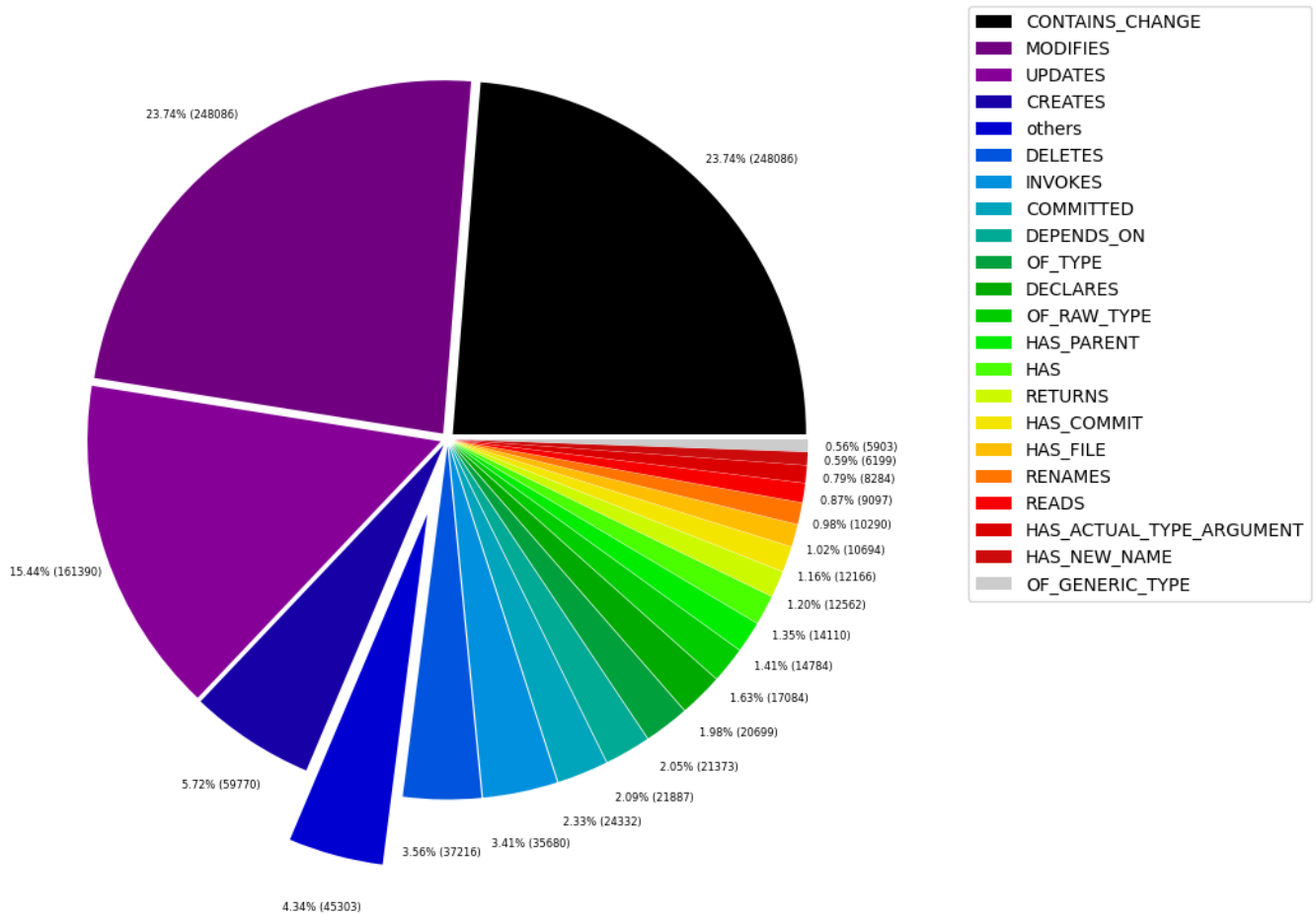


Table 2b - Lowest relationship count by type

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.

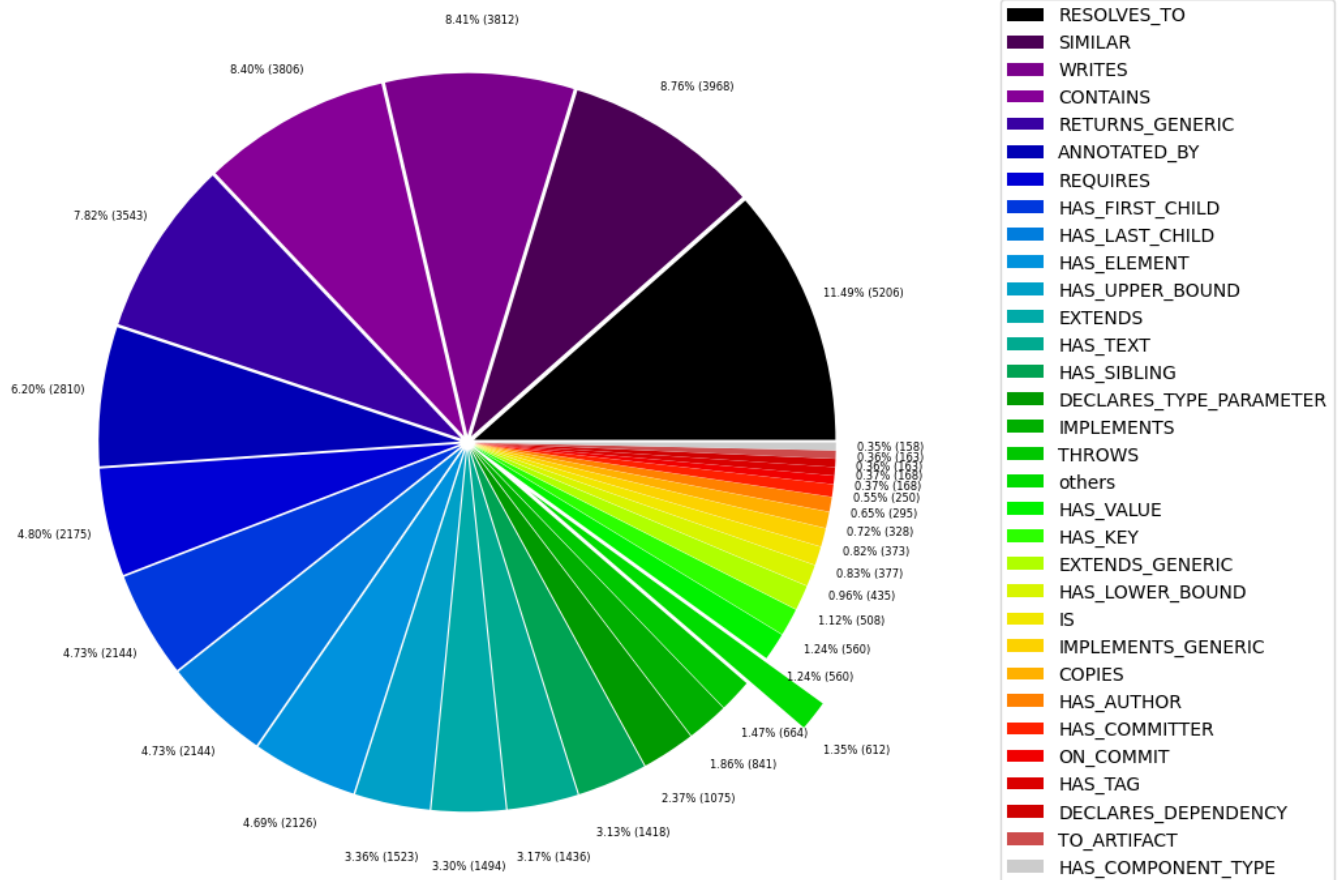
	relationshipType	nodesWithThatRelationshipType	nodesWithThatRelationshipTypePercent
0	HAS_PROPERTY	1	0.000096
1	THROWS_GENERIC	5	0.000478
2	EXCLUDES	5	0.000478
3	HAS_ROOT_ELEMENT	9	0.000861
4	DESCRIBES	9	0.000861
5	HAS_GOAL	16	0.001531
6	HAS_EXECUTION	16	0.001531
7	OF_NAMESPACE	18	0.001722
8	HAS_ATTRIBUTE	18	0.001722
9	INCLUDES_CONCEPT	19	0.001818
10	USES_PLUGIN	21	0.002010
11	REQUIRES_TYPE_PARAMETER	21	0.002010
12	IS_ARTIFACT	21	0.002010
13	HAS_CONFIGURATION	21	0.002010
14	REQUIRES_CONCEPT	28	0.002679
15	HAS_BRANCH	32	0.003062
16	HAS_HEAD	33	0.003158
17	DECLARES_NAMESPACE	36	0.003445
18	HAS_DEFAULT	36	0.003445
19	CONTAINS_VALUE	121	0.011579
20	COPY_OF	126	0.012057
21	HAS_COMPONENT_TYPE	158	0.015120
22	TO_ARTIFACT	163	0.015598
23	DECLARES_DEPENDENCY	163	0.015598
24	ON_COMMIT	168	0.016077
25	HAS_TAG	168	0.016077
26	HAS_COMMITTER	250	0.023924
27	HAS_AUTHOR	295	0.028230
28	COPIES	328	0.031388
29	IMPLEMENTS_GENERIC	373	0.035694

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]	248086	12166	
1	[Git, Change]	MODIFIES	[File, Git]	248086	248086	
2	[Git, Change]	UPDATES	[File, Git]	161390	248086	
3	[Git, Change]	CREATES	[File, Git]	59770	248086	
4	[Git, Change]	DELETES	[File, Git]	37216	248086	
5	[Java, ByteCode, Member, Method]	INVOKES	[Java, ByteCode, Member, Method]	21558	13075	
6	[Git, Commit]	HAS_PARENT	[Git, Commit]	14775	12166	
7	[Repository, File, Git]	HAS_COMMIT	[Git, Commit]	12166	1	
8	[Author, Git, Person]	COMMITTED	[Git, Commit]	12166	295	
9	[Committer, Git, Person]	COMMITTED	[Git, Commit]	12166	250	
10	[Repository, File, Git]	HAS_FILE	[File, Git]	10694	1	
11	[Git, Change]	RENAMES	[File, Git]	10290	248086	
12	[Java, ByteCode, Member, Method]	HAS	[Java, ByteCode, Parameter]	8320	13075	
13	[Java, ByteCode, Member, Method]	READS	[Java, ByteCode, Member, Field]	8121	13075	
14	[Java, ByteCode, Parameter]	OF_TYPE	[Type, File, Java, ByteCode, JavaType]	6368	13016	
15	[File, Git]	HAS_NEW_NAME	[File, Git]	6199	10694	
16	[Java, ByteCode, Bound]	OF_RAW_TYPE	[Type, File, Java, ByteCode, JavaType]	3570	7113	
17	[Java, ByteCode, ParameterizedType, Bound]	OF_RAW_TYPE	[Type, File, Java, ByteCode, JavaType]	3049	7172	
18	[Java, ByteCode, ParameterizedType, Bound]	HAS_ACTUAL_TYPE_ARGUMENT	[Java, ByteCode, Bound, WildcardType]	2908	7172	
19	[Java, ByteCode, Parameter]	OF_GENERIC_TYPE	[Java, ByteCode, ParameterizedType, Bound]	2655	13016	
20	[Java, ByteCode, ParameterizedType, Bound]	HAS_ACTUAL_TYPE_ARGUMENT	[Java, ByteCode, Bound, TypeVariable]	2454	7172	
21	[Java, ByteCode, Member, Constructor, Method]	WRITES	[Java, ByteCode, Member, Field]	2432	2043	
22	[Java, Value, ByteCode, Annotation]	OF_TYPE	[Type, File, Java, ByteCode, ExternalAnnotatio...	2341	2822	
23	[Xml, Element]	HAS_ELEMENT	[Xml, Element]	2126	2144	
24	[Java, ByteCode, Member, Constructor, Method]	INVOKES	[Java, ByteCode, Member, Constructor, Method]	2113	2043	
25	[Java, ByteCode, Member, Method]	RETURNS	[Type, File, Java, ByteCode, JavaType]	2088	13075	
26	[Java, ByteCode, Member, Method]	INVOKES	[Java, ByteCode, Member, Constructor, Method]	2030	13075	
27	[Java, ByteCode, Member, Constructor, Method]	HAS	[Java, ByteCode, Parameter]	2023	2043	
28	[Java, ByteCode, Parameter]	OF_GENERIC_TYPE	[Java, ByteCode, Bound]	2023	13016	
29	[Java, ByteCode, Member, Method, Lambda]	INVOKES	[Java, ByteCode, Member, Method]	1879	938	

Graph Density

```
total_number_of_nodes (vertices): 336888
total_number_of_relationships (edges): 1044995
-> total directed graph density: 9.207557048863581e-06
-> total directed graph density in percent: 0.0009207557048863581
```