

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]	249234	73.717151
1	[Java, ByteCode, Member, Method]	13199	3.903932
2	[Java, ByteCode, Parameter]	13016	3.849806
3	[Git, Commit]	12225	3.615848
4	[File, Git]	10703	3.165678
5	[Java, ByteCode, ParameterizedType, Bound]	7172	2.121297
6	[Java, ByteCode, Bound]	7113	2.103847
7	[Java, ByteCode, Member, Field]	3502	1.035804
8	[Java, ByteCode, Bound, WildcardType]	2908	0.860113
9	[Java, Value, ByteCode, Annotation]	2822	0.834677
10	[Xml, Element]	2144	0.634141
11	[Java, ByteCode, Member, Constructor, Method]	2038	0.602789
12	[Xml, Text]	1436	0.424733
13	[Java, ByteCode, Bound, TypeVariable]	1096	0.324169
14	[Java, ByteCode, Member, Method, Lambda]	938	0.277437
15	[Type, File, Java, ByteCode, ResolvedDuplicate...	900	0.266197
16	[Type, File, Java, ByteCode, Class]	861	0.254662
17	[Type, File, Java, ByteCode, JavaType]	748	0.221240
18	[Java, Value, ByteCode, Primitive]	650	0.192254
19	[Java, ByteCode, Member, Method, GenericDeclar...	569	0.168296
20	[Json, Key]	560	0.165634
21	[Value, Json, Scalar]	544	0.160902
22	[Type, File, Java, ByteCode, ExternalType]	396	0.117127
23	[Author, Git, Person]	295	0.087254
24	[Value, Array]	267	0.078972
25	[Committer, Git, Person]	250	0.073944
26	[Type, File, Java, ByteCode, Class, GenericDec...	236	0.069803
27	[Value, Property]	202	0.059747
28	[Type, File, Java, ByteCode, Interface]	187	0.055310
29	[Java, Value, ByteCode, Class]	172	0.050873

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)

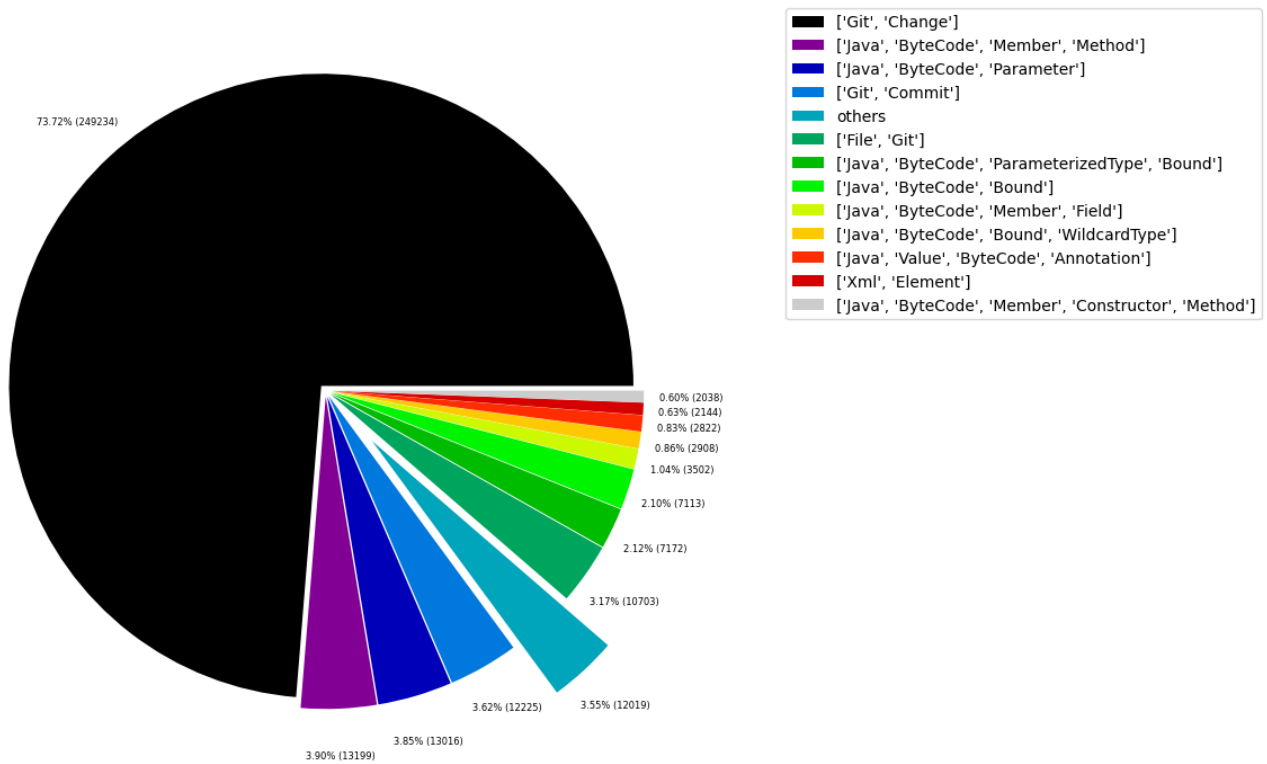


Table 1b - Lowest node count by label combination

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	0.000296
1	[Repository, File, Git]	1	0.000296
2	[File, Json]	2	0.000592
3	[File]	3	0.000887
4	[Java, ByteCode, Member, Constructor, Method, ...]	4	0.001183
5	[Maven, Exclusion]	5	0.001479
6	[Value, Json, Array]	6	0.001775
7	[File, Maven, Xml, Pom, Document]	9	0.002662
8	[Type, File, Java, ByteCode, Void]	9	0.002662
9	[Java, ManifestSection]	9	0.002662
10	[File, Java, Manifest]	9	0.002662
11	[Artifact, File, Jar, Archive, Zip, Java]	9	0.002662
12	[File, Java, ServiceLoader]	10	0.002958
13	[File, Java, Properties]	12	0.003549
14	[Maven, ExecutionGoal]	16	0.004732
15	[Maven, PluginExecution]	16	0.004732
16	[Xml, Attribute]	18	0.005324
17	[jQAssistant, Rule, Concept]	19	0.005620
18	[Maven, Plugin]	21	0.006211
19	[Maven, Configuration]	21	0.006211
20	[Type, File, Java, ByteCode, Enum]	28	0.008282
21	[Type, File, Java, ByteCode, PrimitiveType]	29	0.008577
22	[Git, Branch]	30	0.008873
23	[Xml, Namespace]	36	0.010648
24	[Type, File, Java, ByteCode, Annotation]	43	0.012718
25	[File, Directory]	44	0.013014
26	[Type, File, Java, ByteCode, GenericDeclaratio...	85	0.025141
27	[Artifact, Maven]	92	0.027211
28	[Type, File, Java, ByteCode, ExternalAnnotatio...	93	0.027507
29	[Value, ManifestEntry]	120	0.035493

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)

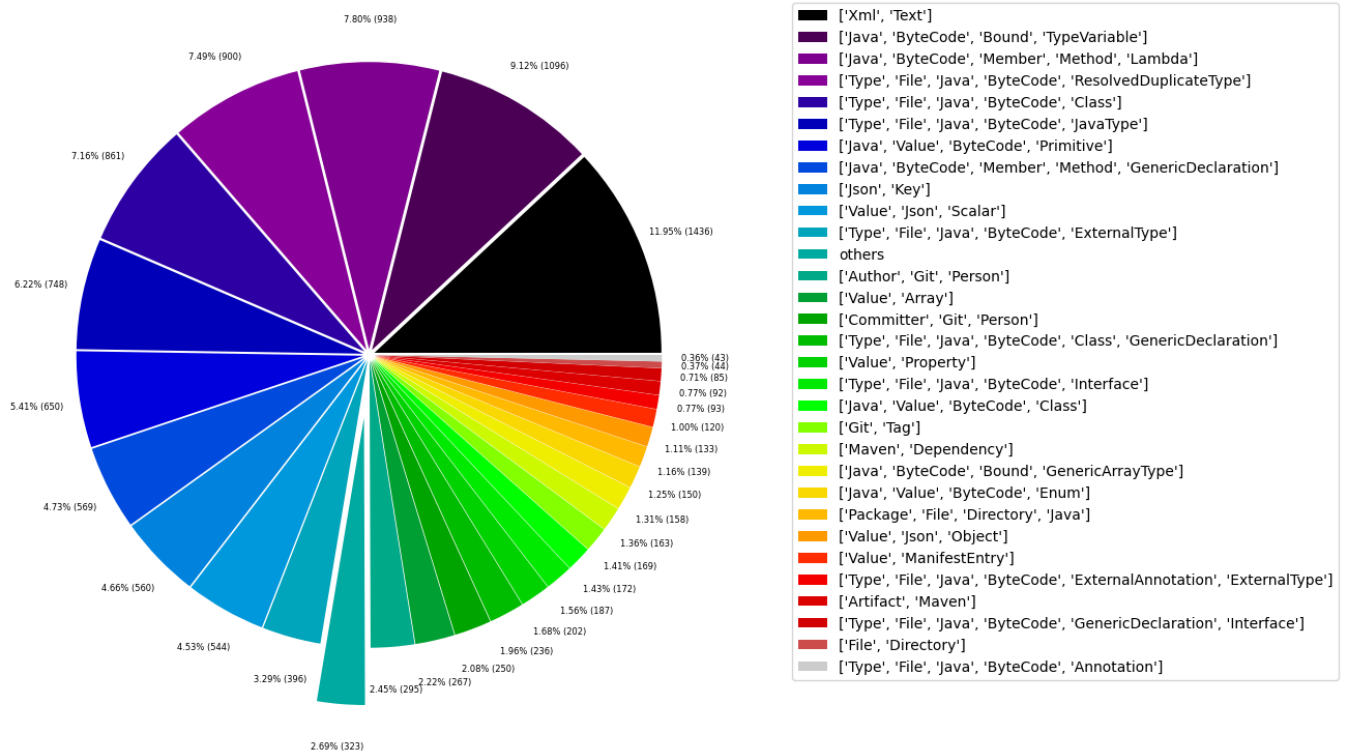


Table 1c - Highest node count by single label

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.

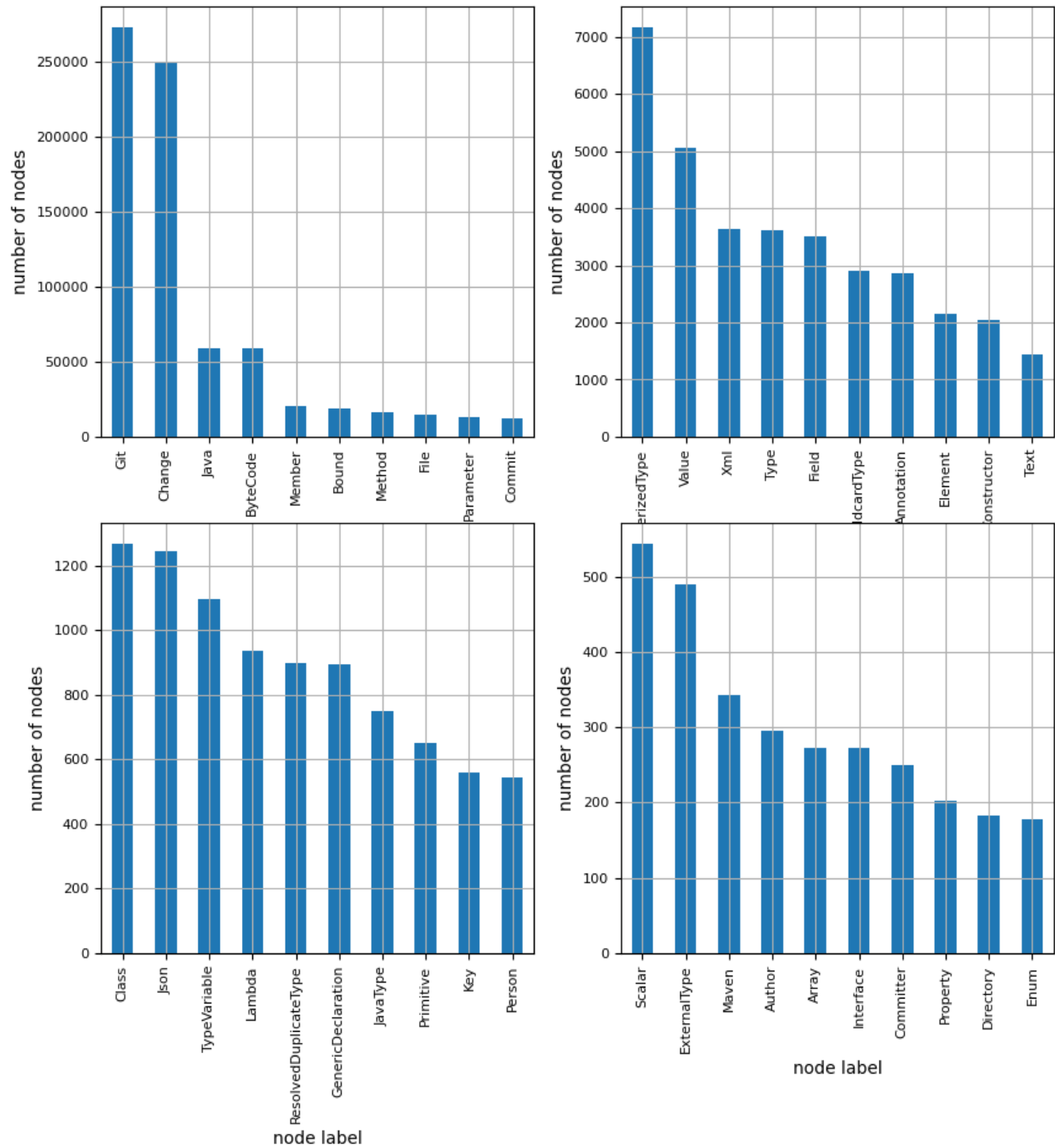
	nodeLabel	nodesWithThatLabel	nodesWithThatLabelPercent
0	Git	272907	80.719029
1	Change	249234	73.717151
2	Java	59310	17.542407
3	ByteCode	59122	17.486801
4	Member	20250	5.989441
5	Bound	18447	5.456159
6	Method	16748	4.953637
7	File	14556	4.305299
8	Parameter	13016	3.849806
9	Commit	12225	3.615848
10	ParameterizedType	7172	2.121297
11	Value	5066	1.498395
12	Xml	3643	1.077508
13	Type	3615	1.069226
14	Field	3502	1.035804
15	WildcardType	2908	0.860113
16	Annotation	2865	0.847395
17	Element	2144	0.634141
18	Constructor	2042	0.603972
19	Text	1436	0.424733
20	Class	1269	0.375338
21	Json	1245	0.368240
22	TypeVariable	1096	0.324169
23	Lambda	938	0.277437
24	ResolvedDuplicateType	900	0.266197
25	GenericDeclaration	894	0.264423
26	JavaType	748	0.221240
27	Primitive	650	0.192254
28	Key	560	0.165634
29	Person	545	0.161197
30	Scalar	544	0.160902
31	ExternalType	489	0.144634
32	Maven	343	0.101451
33	Author	295	0.087254
34	Array	273	0.080747
35	Interface	272	0.080451
36	Committer	250	0.073944
37	Property	202	0.059747
38	Directory	183	0.054127
39	Enum	178	0.052648

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: 1048639

	relationshipType	nodesWithThatRelationshipType	nodesWithThatRelationshipTypePercent
0	CONTAINS_CHANGE	249234	23.767378
1	MODIFIES	249234	23.767378
2	UPDATES	162498	15.496086
3	CREATES	59791	5.701772
4	DELETES	37236	3.550888
5	INVOKES	35642	3.398882
6	COMMITTED	24450	2.331594
7	DEPENDS_ON	21887	2.087182
8	OF_TYPE	21373	2.038166
9	DECLARES	20691	1.973129
10	OF_RAW_TYPE	17084	1.629159
11	HAS_PARENT	14856	1.416693
12	HAS	14110	1.345554
13	RETURNS	12562	1.197934
14	HAS_COMMIT	12225	1.165797
15	HAS_FILE	10703	1.020656
16	RENAMES	10291	0.981367
17	READS	9097	0.867505
18	HAS_ACTUAL_TYPE_ARGUMENT	8284	0.789976
19	HAS_NEW_NAME	6200	0.591243
20	OF_GENERIC_TYPE	5903	0.562920
21	RESOLVES_TO	5192	0.495118
22	SIMILAR	3968	0.378395
23	WRITES	3812	0.363519
24	CONTAINS	3806	0.362947
25	RETURNS_GENERIC	3543	0.337867
26	ANNOTATED_BY	2810	0.267966
27	REQUIRES	2175	0.207412
28	HAS_FIRST_CHILD	2144	0.204455
29	HAS_LAST_CHILD	2144	0.204455

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)

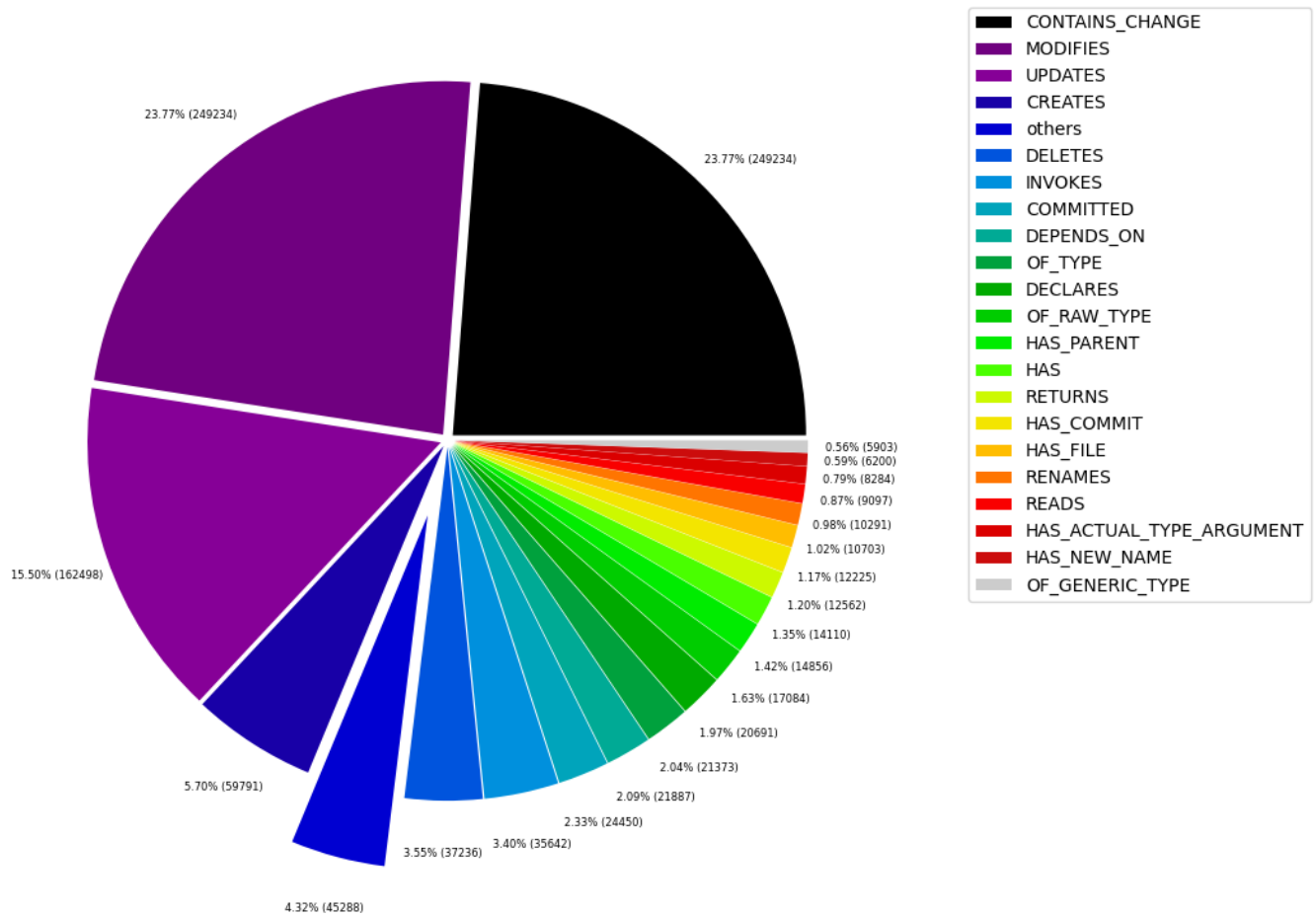


Table 2b - Lowest relationship count by type

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.

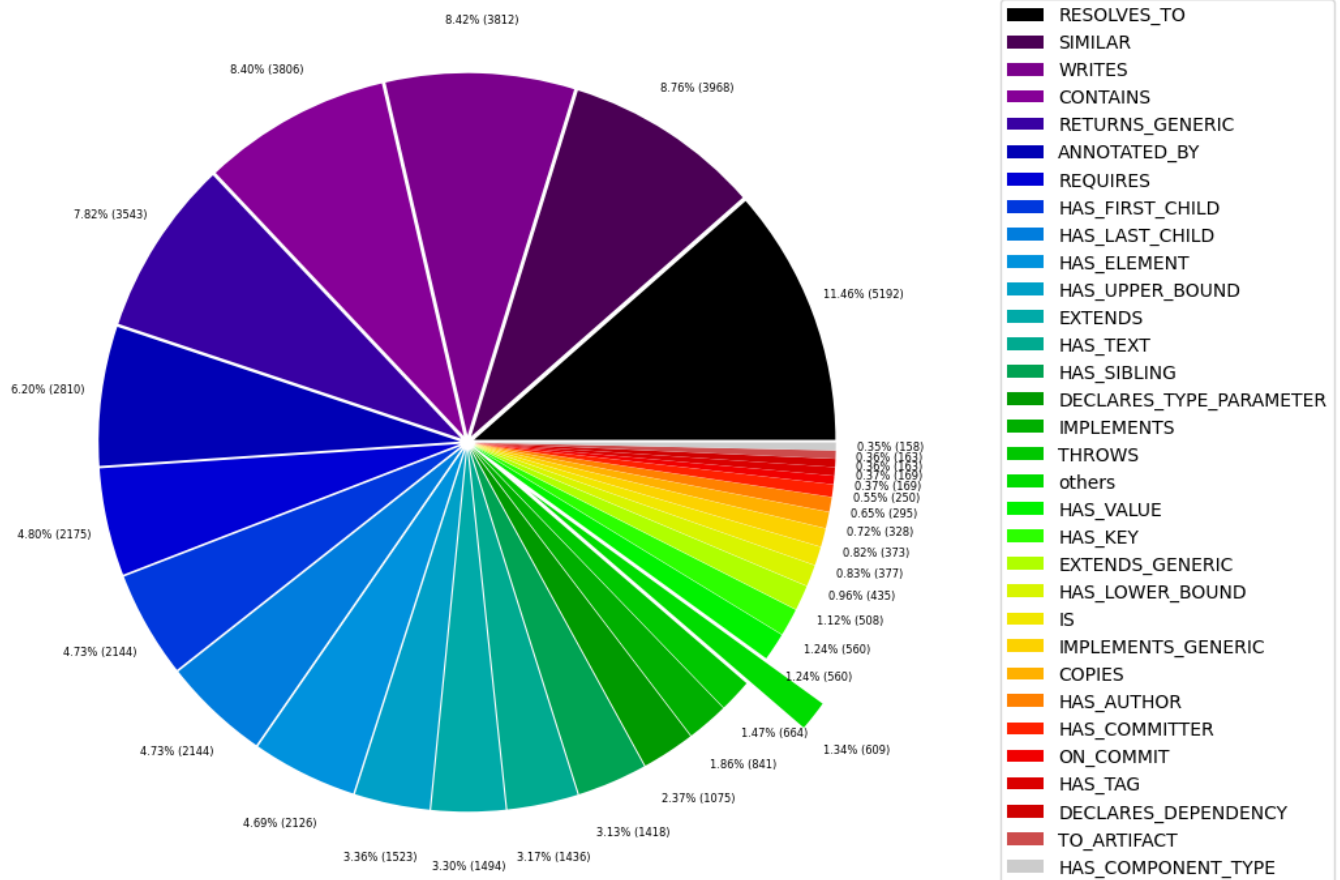
	relationshipType	nodesWithThatRelationshipType	nodesWithThatRelationshipTypePercent
0	HAS_PROPERTY	1	0.000095
1	THROWS_GENERIC	5	0.000477
2	EXCLUDES	5	0.000477
3	DESCRIBES	9	0.000858
4	HAS_ROOT_ELEMENT	10	0.000954
5	HAS_GOAL	16	0.001526
6	HAS_EXECUTION	16	0.001526
7	OF_NAMESPACE	18	0.001717
8	HAS_ATTRIBUTE	18	0.001717
9	INCLUDES_CONCEPT	19	0.001812
10	USES_PLUGIN	21	0.002003
11	REQUIRES_TYPE_PARAMETER	21	0.002003
12	IS_ARTIFACT	21	0.002003
13	HAS_CONFIGURATION	21	0.002003
14	REQUIRES_CONCEPT	28	0.002670
15	HAS_BRANCH	30	0.002861
16	HAS_HEAD	31	0.002956
17	DECLARES_NAMESPACE	36	0.003433
18	HAS_DEFAULT	36	0.003433
19	CONTAINS_VALUE	121	0.011539
20	COPY_OF	126	0.012016
21	HAS_COMPONENT_TYPE	158	0.015067
22	TO_ARTIFACT	163	0.015544
23	DECLARES_DEPENDENCY	163	0.015544
24	ON_COMMIT	169	0.016116
25	HAS_TAG	169	0.016116
26	HAS_COMMITTER	250	0.023840
27	HAS_AUTHOR	295	0.028132
28	COPIES	328	0.031279
29	IMPLEMENTS_GENERIC	373	0.035570

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]	249234		12225
1	[Git, Change]	MODIFIES	[File, Git]	249234		249234
2	[Git, Change]	UPDATES	[File, Git]	162498		249234
3	[Git, Change]	CREATES	[File, Git]	59791		249234
4	[Git, Change]	DELETES	[File, Git]	37236		249234
5	[Java, ByteCode, Member, Method]	INVOKES	[Java, ByteCode, Member, Method]	21594		13098
6	[Git, Commit]	HAS_PARENT	[Git, Commit]	14847		12225
7	[Repository, File, Git]	HAS_COMMIT	[Git, Commit]	12225		1
8	[Author, Git, Person]	COMMITTED	[Git, Commit]	12225		295
9	[Committer, Git, Person]	COMMITTED	[Git, Commit]	12225		250
10	[Repository, File, Git]	HAS_FILE	[File, Git]	10703		1
11	[Git, Change]	RENAMES	[File, Git]	10291		249234
12	[Java, ByteCode, Member, Method]	HAS	[Java, ByteCode, Parameter]	8348		13098
13	[Java, ByteCode, Member, Method]	READS	[Java, ByteCode, Member, Field]	8124		13098
14	[Java, ByteCode, Parameter]	OF_TYPE	[Type, File, Java, ByteCode, JavaType]	6368		13016
15	[File, Git]	HAS_NEW_NAME	[File, Git]	6200		10703
16	[Type, File, Java, ByteCode, Class]	DECLARES	[Java, ByteCode, Member, Method]	5062		813
17	[Type, File, Java, ByteCode, Class]	DEPENDS_ON	[Type, File, Java, ByteCode, JavaType]	4475		813
18	[Java, ByteCode, Bound]	OF_RAW_TYPE	[Type, File, Java, ByteCode, JavaType]	3570		7113
19	[Java, ByteCode, ParameterizedType, Bound]	OF_RAW_TYPE	[Type, File, Java, ByteCode, JavaType]	3049		7172
20	[Java, ByteCode, ParameterizedType, Bound]	HAS_ACTUAL_TYPE_ARGUMENT	[Java, ByteCode, Bound, WildcardType]	2908		7172
21	[Java, ByteCode, Parameter]	OF_GENERIC_TYPE	[Java, ByteCode, ParameterizedType, Bound]	2655		13016
22	[Java, ByteCode, ParameterizedType, Bound]	HAS_ACTUAL_TYPE_ARGUMENT	[Java, ByteCode, Bound, TypeVariable]	2454		7172
23	[Java, ByteCode, Member, Constructor, Method]	WRITES	[Java, ByteCode, Member, Field]	2432		2038
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]	2176		813
26	[Xml, Element]	HAS_ELEMENT	[Xml, Element]	2126		2144
27	[Java, ByteCode, Member, Constructor, Method]	INVOKES	[Java, ByteCode, Member, Constructor, Method]	2112		2038
28	[Type, File, Java, ByteCode, Class, GenericDec...	DECLARES	[Java, ByteCode, Member, Method]	2100		228
29	[Java, ByteCode, Member, Method]	RETURNS	[Type, File, Java, ByteCode, JavaType]	2088		13098

Graph Density

```
total_number_of_nodes (vertices): 338095
total_number_of_relationships (edges): 1048639
-> total directed graph density: 9.173811111974473e-06
-> total directed graph density in percent: 0.0009173811111974473
```