

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]	249053	73.707435
1	[Java, ByteCode, Member, Method]	13203	3.907438
2	[Java, ByteCode, Parameter]	13016	3.852096
3	[Git, Commit]	12207	3.612671
4	[File, Git]	10696	3.165490
5	[Java, ByteCode, ParameterizedType, Bound]	7172	2.122559
6	[Java, ByteCode, Bound]	7113	2.105098
7	[Java, ByteCode, Member, Field]	3503	1.036716
8	[Java, ByteCode, Bound, WildcardType]	2908	0.860625
9	[Java, Value, ByteCode, Annotation]	2822	0.835173
10	[Xml, Element]	2144	0.634519
11	[Java, ByteCode, Member, Constructor, Method]	2041	0.604036
12	[Xml, Text]	1436	0.424985
13	[Java, ByteCode, Bound, TypeVariable]	1096	0.324362
14	[Java, ByteCode, Member, Method, Lambda]	938	0.277602
15	[Type, File, Java, ByteCode, ResolvedDuplicate...	900	0.266356
16	[Type, File, Java, ByteCode, Class]	861	0.254814
17	[Type, File, Java, ByteCode, JavaType]	748	0.221371
18	[Java, Value, ByteCode, Primitive]	650	0.192368
19	[Java, ByteCode, Member, Method, GenericDeclar...	569	0.168396
20	[Json, Key]	560	0.165732
21	[Value, Json, Scalar]	544	0.160997
22	[Type, File, Java, ByteCode, ExternalType]	396	0.117197
23	[Author, Git, Person]	295	0.087305
24	[Value, Array]	267	0.079019
25	[Committer, Git, Person]	250	0.073988
26	[Type, File, Java, ByteCode, Class, GenericDec...	236	0.069844
27	[Value, Property]	202	0.059782
28	[Type, File, Java, ByteCode, Interface]	187	0.055343
29	[Java, Value, ByteCode, Class]	172	0.050904

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)

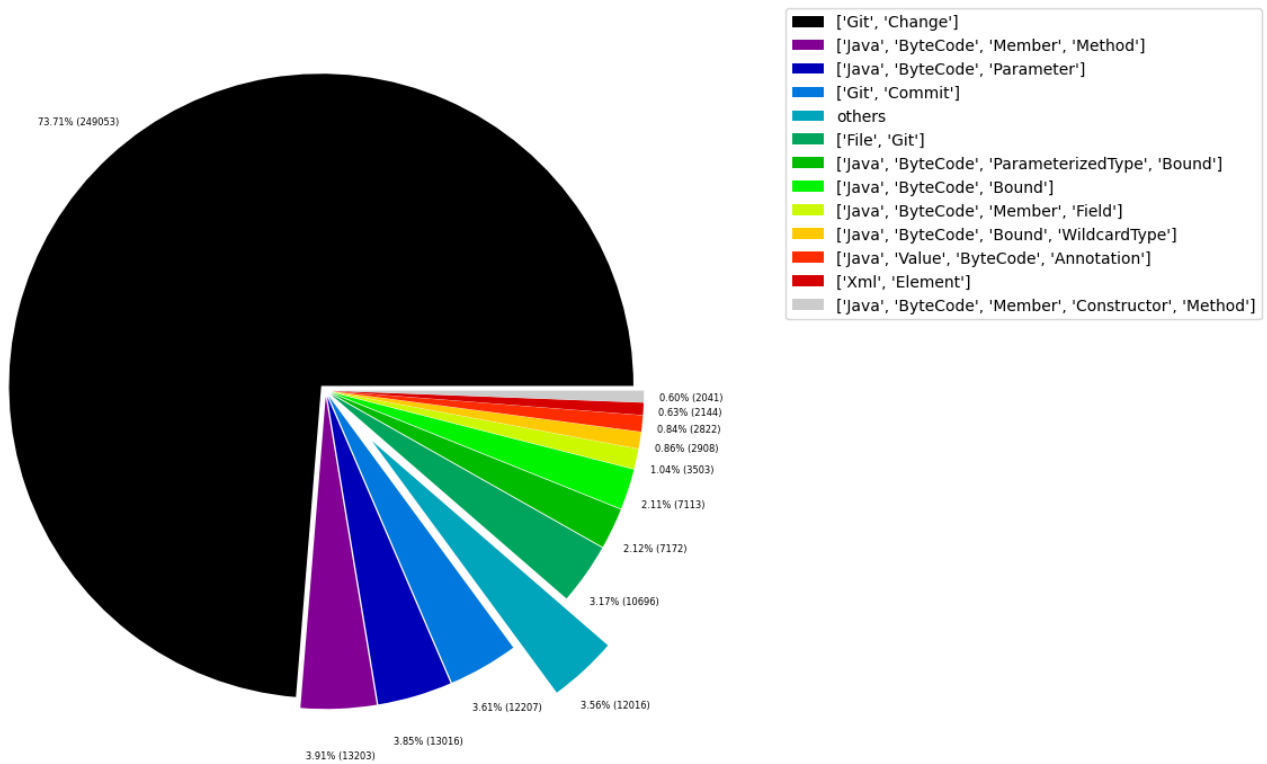


Table 1b - Lowest node count by label combination

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	0.000888
4	[Java, ByteCode, Member, Constructor, Method, ...]	4	0.001184
5	[Maven, Exclusion]	5	0.001480
6	[Value, Json, Array]	6	0.001776
7	[File, Maven, Xml, Pom, Document]	9	0.002664
8	[Type, File, Java, ByteCode, Void]	9	0.002664
9	[Java, ManifestSection]	9	0.002664
10	[File, Java, Manifest]	9	0.002664
11	[Artifact, File, Jar, Archive, Zip, Java]	9	0.002664
12	[File, Java, ServiceLoader]	10	0.002960
13	[File, Java, Properties]	12	0.003551
14	[Maven, ExecutionGoal]	16	0.004735
15	[Maven, PluginExecution]	16	0.004735
16	[Xml, Attribute]	18	0.005327
17	[jQAssistant, Rule, Concept]	19	0.005623
18	[Maven, Plugin]	21	0.006215
19	[Maven, Configuration]	21	0.006215
20	[Git, Branch]	28	0.008287
21	[Type, File, Java, ByteCode, Enum]	28	0.008287
22	[Type, File, Java, ByteCode, PrimitiveType]	29	0.008583
23	[Xml, Namespace]	36	0.010654
24	[Type, File, Java, ByteCode, Annotation]	43	0.012726
25	[File, Directory]	44	0.013022
26	[Type, File, Java, ByteCode, GenericDeclaratio...	85	0.025156
27	[Artifact, Maven]	92	0.027227
28	[Type, File, Java, ByteCode, ExternalAnnotatio...	93	0.027523
29	[Value, ManifestEntry]	120	0.035514

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)

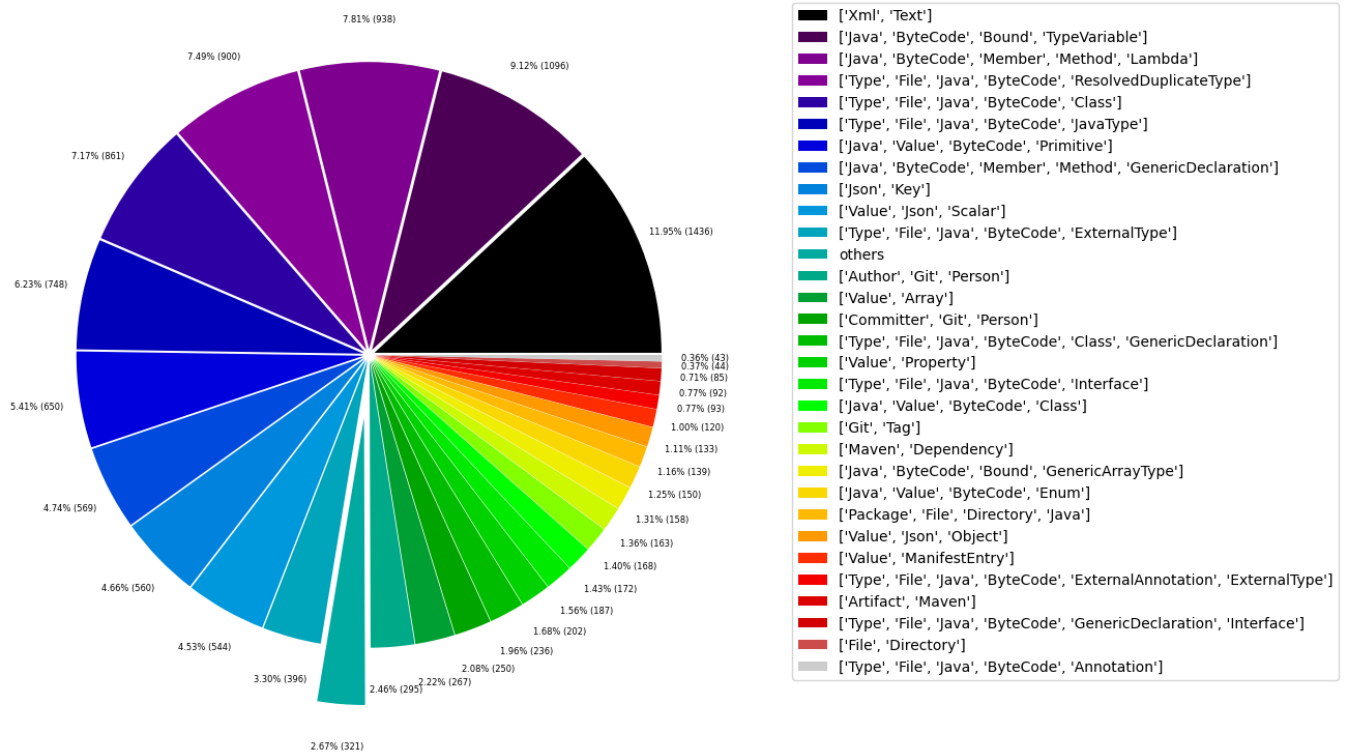


Table 1c - Highest node count by single label

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.

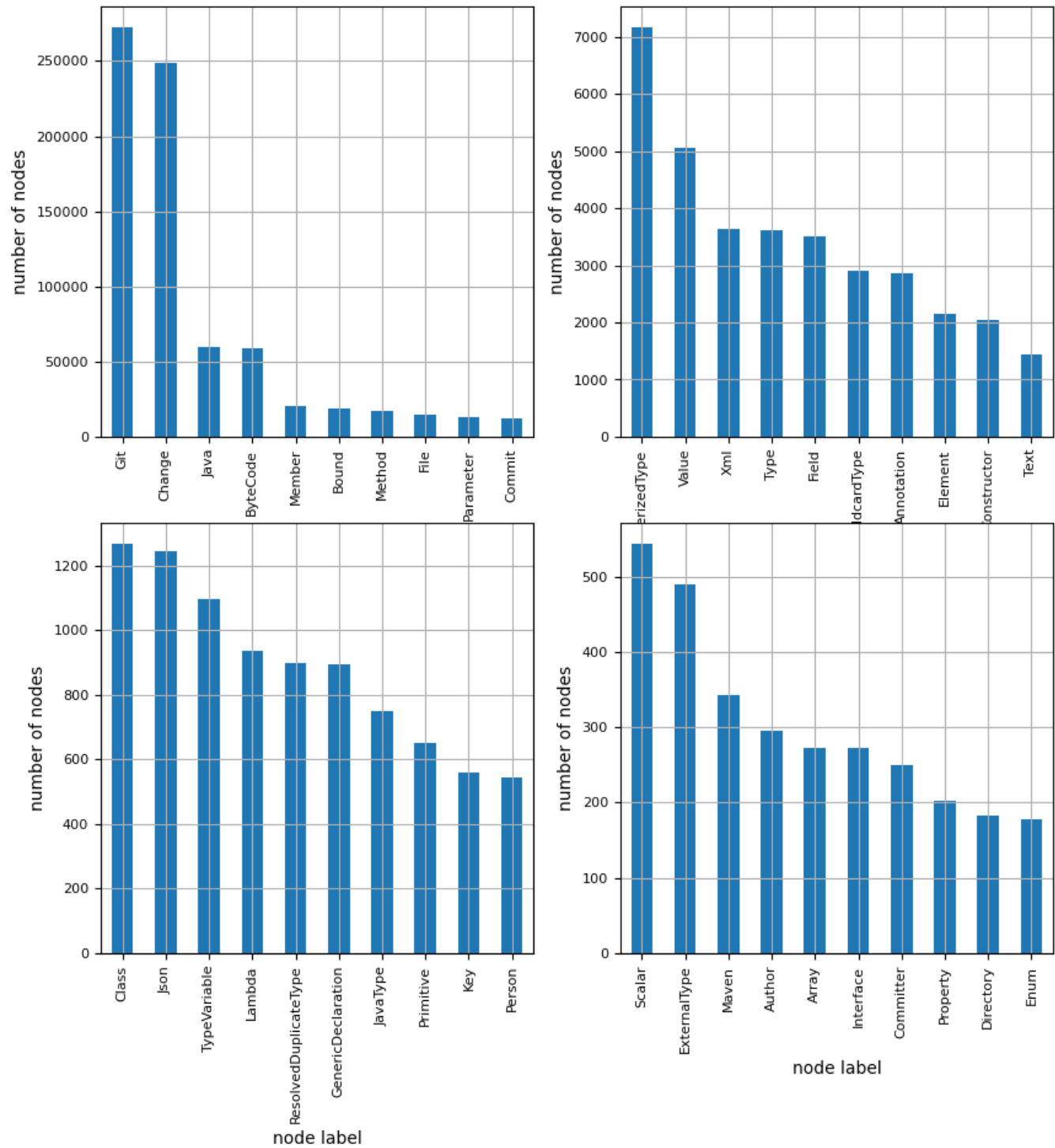
	nodeLabel	nodesWithThatLabel	nodesWithThatLabelPercent
0	Git	272698	80.705192
1	Change	249053	73.707435
2	Java	59318	17.555210
3	ByteCode	59130	17.499571
4	Member	20258	5.995371
5	Bound	18447	5.459404
6	Method	16755	4.958656
7	File	14549	4.305788
8	Parameter	13016	3.852096
9	Commit	12207	3.612671
10	ParameterizedType	7172	2.122559
11	Value	5066	1.499287
12	Xml	3643	1.078149
13	Type	3615	1.069862
14	Field	3503	1.036716
15	WildcardType	2908	0.860625
16	Annotation	2865	0.847899
17	Element	2144	0.634519
18	Constructor	2045	0.605219
19	Text	1436	0.424985
20	Class	1269	0.375562
21	Json	1245	0.368459
22	TypeVariable	1096	0.324362
23	Lambda	938	0.277602
24	ResolvedDuplicateType	900	0.266356
25	GenericDeclaration	894	0.264580
26	JavaType	748	0.221371
27	Primitive	650	0.192368
28	Key	560	0.165732
29	Person	545	0.161293
30	Scalar	544	0.160997
31	ExternalType	489	0.144720
32	Maven	343	0.101511
33	Author	295	0.087305
34	Array	273	0.080795
35	Interface	272	0.080499
36	Committer	250	0.073988
37	Property	202	0.059782
38	Directory	183	0.054159
39	Enum	178	0.052679

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: 1048062

	relationshipType	nodesWithThatRelationshipType	nodesWithThatRelationshipTypePercent
0	CONTAINS_CHANGE	249053	23.763193
1	MODIFIES	249053	23.763193
2	UPDATES	162326	15.488206
3	CREATES	59784	5.704243
4	DELETES	37233	3.552557
5	INVOKES	35679	3.404283
6	COMMITTED	24414	2.329442
7	DEPENDS_ON	21887	2.088331
8	OF_TYPE	21373	2.039288
9	DECLARES	20699	1.974979
10	OF_RAW_TYPE	17084	1.630056
11	HAS_PARENT	14835	1.415470
12	HAS	14110	1.346294
13	RETURNS	12562	1.198593
14	HAS_COMMIT	12207	1.164721
15	HAS_FILE	10696	1.020550
16	RENAMES	10290	0.981812
17	READS	9097	0.867983
18	HAS_ACTUAL_TYPE_ARGUMENT	8284	0.790411
19	HAS_NEW_NAME	6199	0.591473
20	OF_GENERIC_TYPE	5903	0.563230
21	RESOLVES_TO	5205	0.496631
22	SIMILAR	3968	0.378604
23	WRITES	3812	0.363719
24	CONTAINS	3806	0.363146
25	RETURNS_GENERIC	3543	0.338053
26	ANNOTATED_BY	2810	0.268114
27	REQUIRES	2175	0.207526
28	HAS_FIRST_CHILD	2144	0.204568
29	HAS_LAST_CHILD	2144	0.204568

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)

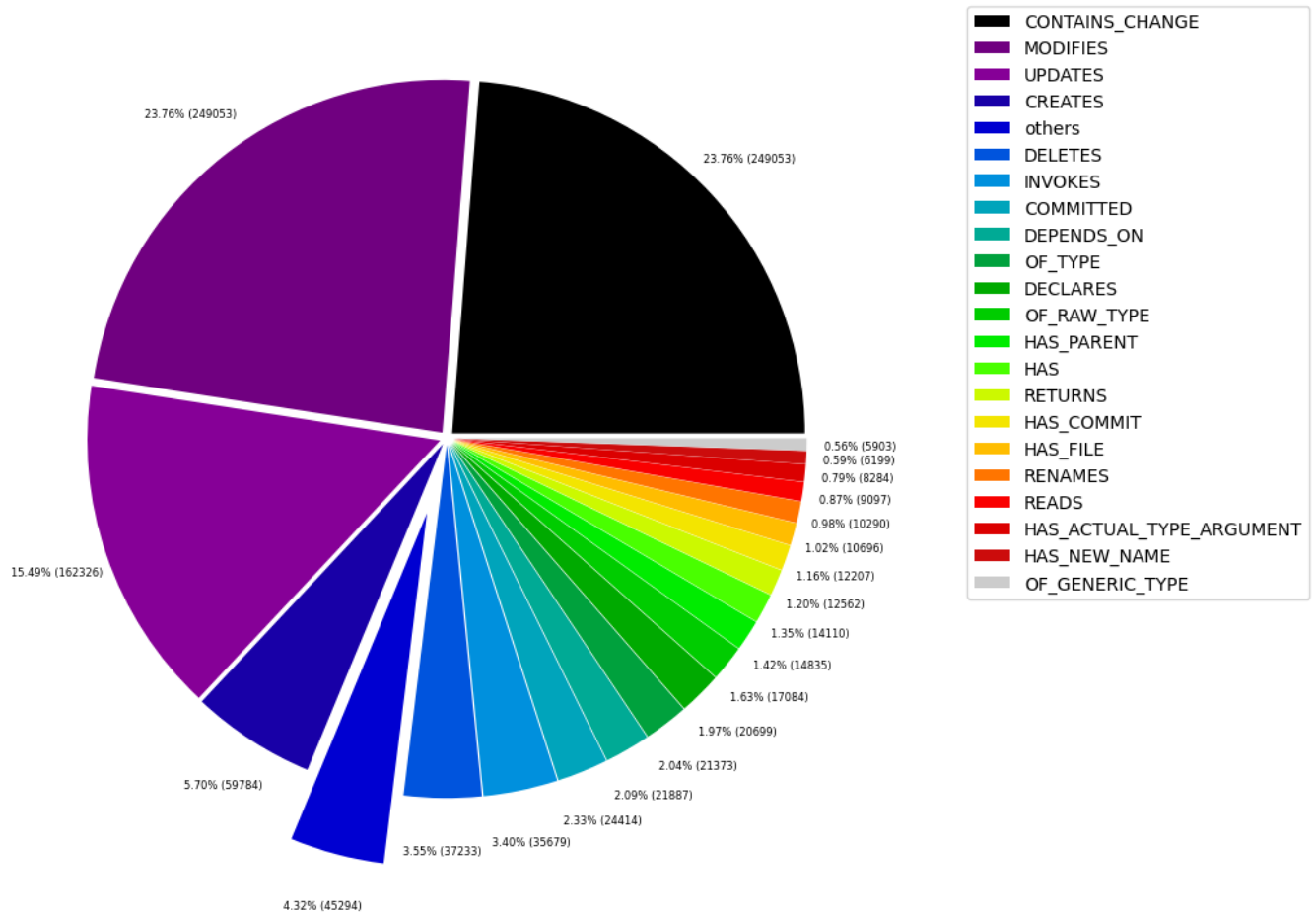


Table 2b - Lowest relationship count by type

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.

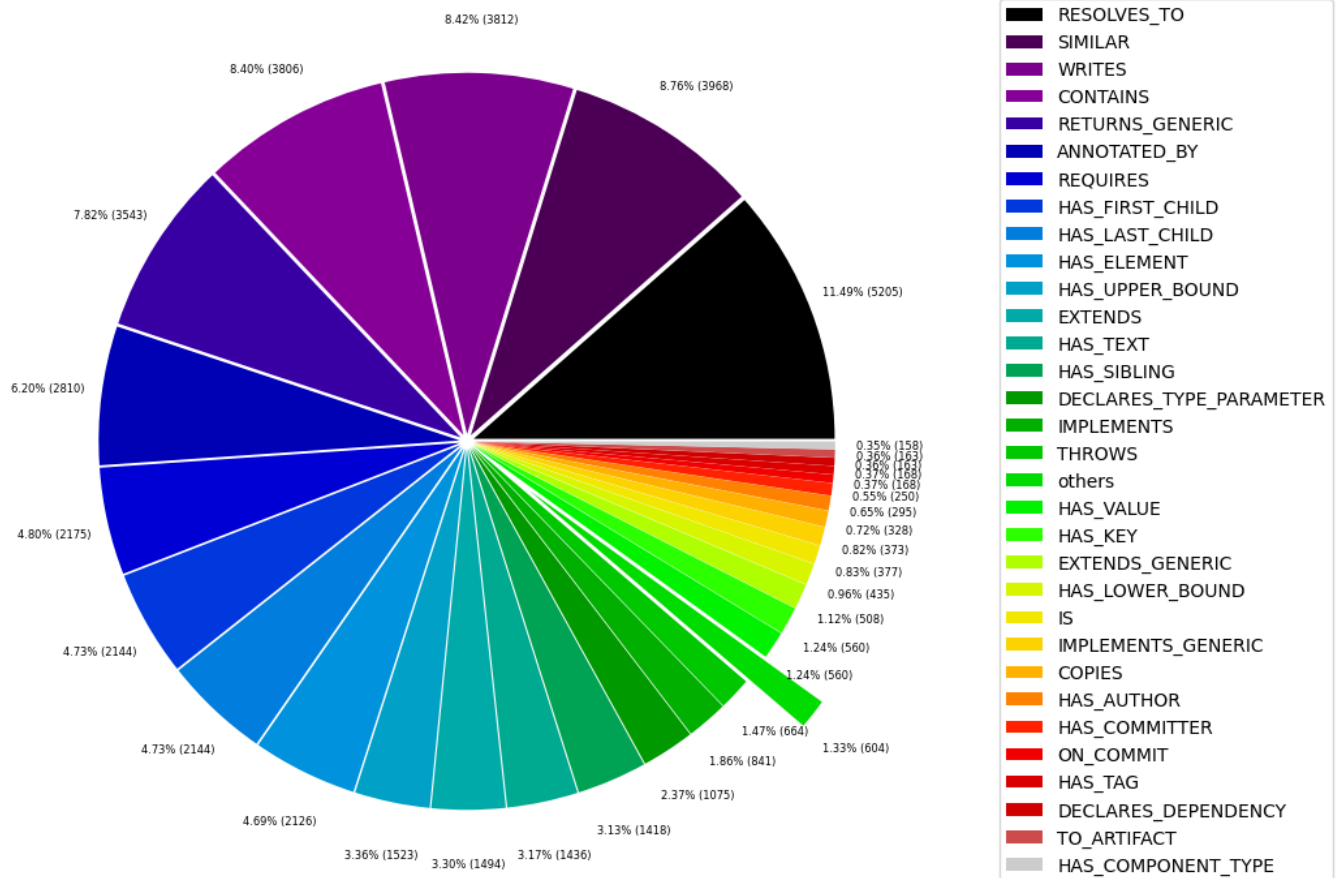
	relationshipType	nodesWithThatRelationshipType	nodesWithThatRelationshipTypePercent
0	HAS_PROPERTY	1	0.000095
1	THROWS_GENERIC	5	0.000477
2	EXCLUDES	5	0.000477
3	HAS_ROOT_ELEMENT	9	0.000859
4	DESCRIBES	9	0.000859
5	HAS_GOAL	16	0.001527
6	HAS_EXECUTION	16	0.001527
7	OF_NAMESPACE	18	0.001717
8	HAS_ATTRIBUTE	18	0.001717
9	INCLUDES_CONCEPT	19	0.001813
10	USES_PLUGIN	21	0.002004
11	REQUIRES_TYPE_PARAMETER	21	0.002004
12	IS_ARTIFACT	21	0.002004
13	HAS_CONFIGURATION	21	0.002004
14	REQUIRES_CONCEPT	28	0.002672
15	HAS_BRANCH	28	0.002672
16	HAS_HEAD	29	0.002767
17	DECLARES_NAMESPACE	36	0.003435
18	HAS_DEFAULT	36	0.003435
19	CONTAINS_VALUE	121	0.011545
20	COPY_OF	126	0.012022
21	HAS_COMPONENT_TYPE	158	0.015075
22	TO_ARTIFACT	163	0.015553
23	DECLARES_DEPENDENCY	163	0.015553
24	ON_COMMIT	168	0.016030
25	HAS_TAG	168	0.016030
26	HAS_COMMITTER	250	0.023854
27	HAS_AUTHOR	295	0.028147
28	COPIES	328	0.031296
29	IMPLEMENTS_GENERIC	373	0.035589

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]	249053		12207
1	[Git, Change]	MODIFIES	[File, Git]	249053		249053
2	[Git, Change]	UPDATES	[File, Git]	162326		249053
3	[Git, Change]	CREATES	[File, Git]	59784		249053
4	[Git, Change]	DELETES	[File, Git]	37233		249053
5	[Java, ByteCode, Member, Method]	INVOKES	[Java, ByteCode, Member, Method]	21558		13077
6	[Git, Commit]	HAS_PARENT	[Git, Commit]	14826		12207
7	[Repository, File, Git]	HAS_COMMIT	[Git, Commit]	12207		1
8	[Author, Git, Person]	COMMITTED	[Git, Commit]	12207		295
9	[Committer, Git, Person]	COMMITTED	[Git, Commit]	12207		250
10	[Repository, File, Git]	HAS_FILE	[File, Git]	10696		1
11	[Git, Change]	RENAMES	[File, Git]	10290		249053
12	[Java, ByteCode, Member, Method]	HAS	[Java, ByteCode, Parameter]	8320		13077
13	[Java, ByteCode, Member, Method]	READS	[Java, ByteCode, Member, Field]	8121		13077
14	[Java, ByteCode, Parameter]	OF_TYPE	[Type, File, Java, ByteCode, JavaType]	6368		13016
15	[File, Git]	HAS_NEW_NAME	[File, Git]	6199		10696
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		2041
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		2041
25	[Java, ByteCode, Member, Method]	RETURNS	[Type, File, Java, ByteCode, JavaType]	2088		13077
26	[Java, ByteCode, Member, Method]	INVOKES	[Java, ByteCode, Member, Constructor, Method]	2029		13077
27	[Java, ByteCode, Member, Constructor, Method]	HAS	[Java, ByteCode, Parameter]	2023		2041
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): 337894
total_number_of_relationships (edges): 1048062
-> total directed graph density: 9.179674883562329e-06
-> total directed graph density in percent: 0.000917967488356233
```