

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]	259034	74.323146
1	[Java, ByteCode, Member, Method]	13197	3.786540
2	[Java, ByteCode, Parameter]	13029	3.738337
3	[Git, Commit]	12705	3.645373
4	[File, Git]	10810	3.101652
5	[Java, ByteCode, Bound, ParameterizedType]	7176	2.058969
6	[Java, ByteCode, Bound]	7118	2.042327
7	[Java, ByteCode, Member, Field]	3502	1.004809
8	[Java, ByteCode, Bound, WildcardType]	2908	0.834376
9	[Java, Value, ByteCode, Annotation]	2822	0.809700
10	[Xml, Element]	2144	0.615166
11	[Java, ByteCode, Member, Method, Constructor]	2039	0.585039
12	[Xml, Text]	1436	0.412023
13	[Java, ByteCode, TypeVariable, Bound]	1096	0.314469
14	[Java, ByteCode, Member, Method, Lambda]	942	0.270283
15	[Type, File, Java, ByteCode, ResolvedDuplicate...	877	0.251633
16	[Type, File, Java, ByteCode, Class]	810	0.232409
17	[Java, Value, ByteCode, Primitive]	652	0.187075
18	[Type, File, Java, ByteCode, JavaType]	644	0.184779
19	[Java, GenericDeclaration, ByteCode, Member, M...	569	0.163260
20	[Json, Key]	560	0.160678
21	[Value, Json, Scalar]	544	0.156087
22	[Type, File, Java, ByteCode, ExternalType]	380	0.109031
23	[Author, Git, Person]	298	0.085503
24	[Value, Array]	267	0.076609
25	[Committer, Git, Person]	252	0.072305
26	[Type, File, Java, GenericDeclaration, ByteCod...	236	0.067714
27	[Value, Property]	202	0.057959
28	[Type, File, Java, ByteCode, Interface]	188	0.053942
29	[Java, Value, ByteCode, Class]	172	0.049351

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)

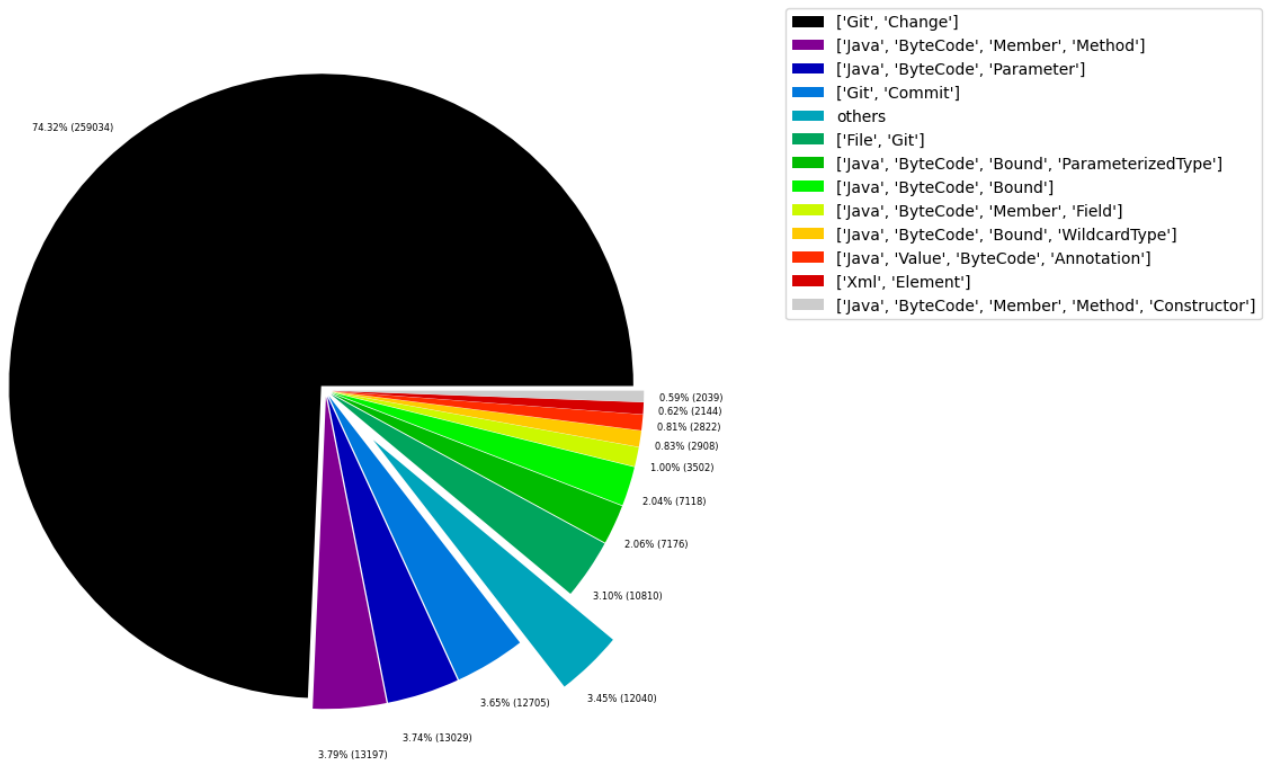


Table 1b - Lowest node count by label combination

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	0.000287
1	[Repository, File, Git]	1	0.000287
2	[File, Json]	2	0.000574
3	[File]	3	0.000861
4	[Java, GenericDeclaration, ByteCode, Member, M...	4	0.001148
5	[Maven, Exclusion]	5	0.001435
6	[Value, Array, Json]	6	0.001722
7	[Type, File, Java, ByteCode, Void]	9	0.002582
8	[File, Maven, Xml, Pom, Document]	9	0.002582
9	[Java, ManifestSection]	9	0.002582
10	[File, Java, Manifest]	9	0.002582
11	[Artifact, File, Jar, Archive, Zip, Java]	9	0.002582
12	[File, Java, ServiceLoader]	10	0.002869
13	[File, Java, Properties]	12	0.003443
14	[Type, File, Java, ByteCode, Throwable, Extern...	16	0.004591
15	[Maven, ExecutionGoal]	16	0.004591
16	[Maven, PluginExecution]	16	0.004591
17	[Xml, Attribute]	18	0.005165
18	[jQAssistant, Rule, Concept]	19	0.005452
19	[Maven, Plugin]	21	0.006025
20	[Maven, Configuration]	21	0.006025
21	[Type, File, Java, ByteCode, Throwable, Resolv...	22	0.006312
22	[Type, File, Java, ByteCode, Enum]	28	0.008034
23	[Type, File, Java, ByteCode, PrimitiveType]	29	0.008321
24	[Xml, Namespace]	36	0.010329
25	[Git, Branch]	37	0.010616
26	[Type, File, Java, ByteCode, Annotation]	43	0.012338
27	[File, Directory]	44	0.012625
28	[Type, File, Java, ByteCode, Class, Throwable]	54	0.015494
29	[Type, File, Java, GenericDeclaration, ByteCod...	85	0.024389

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)

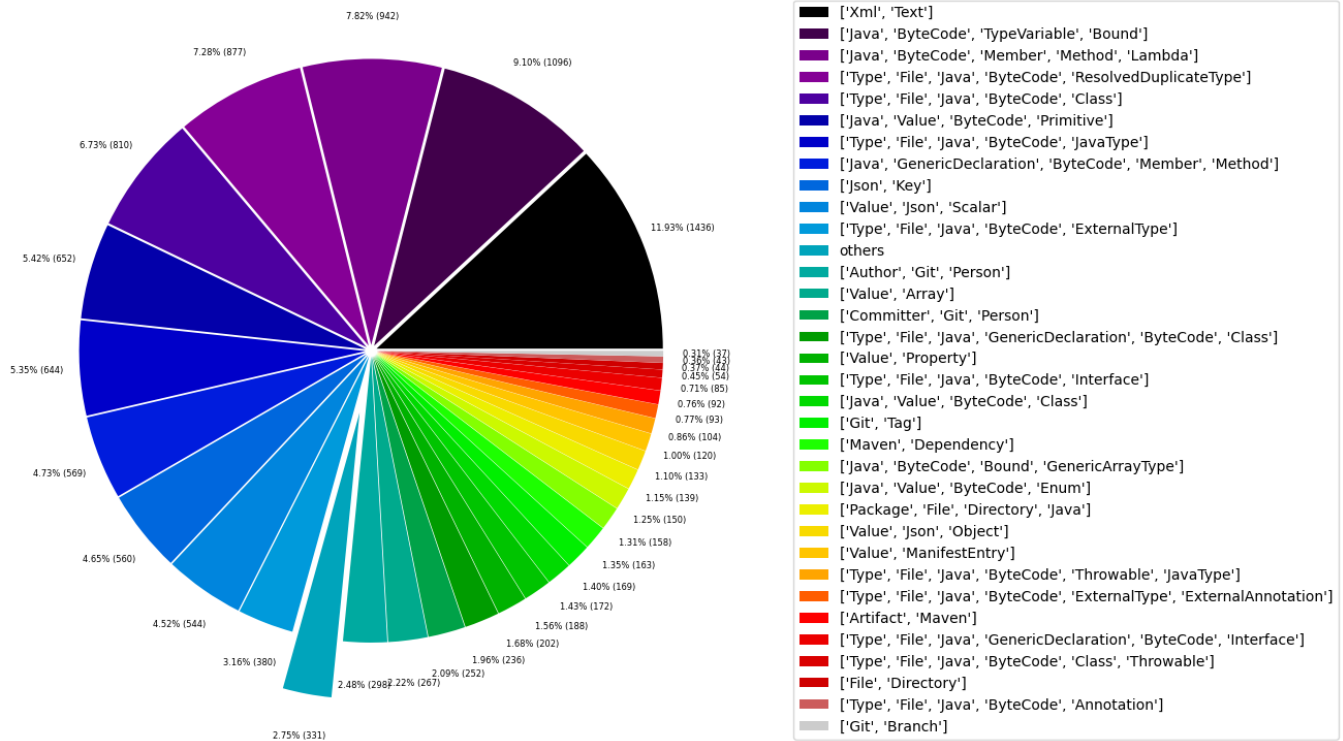


Table 1c - Highest node count by single label

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.

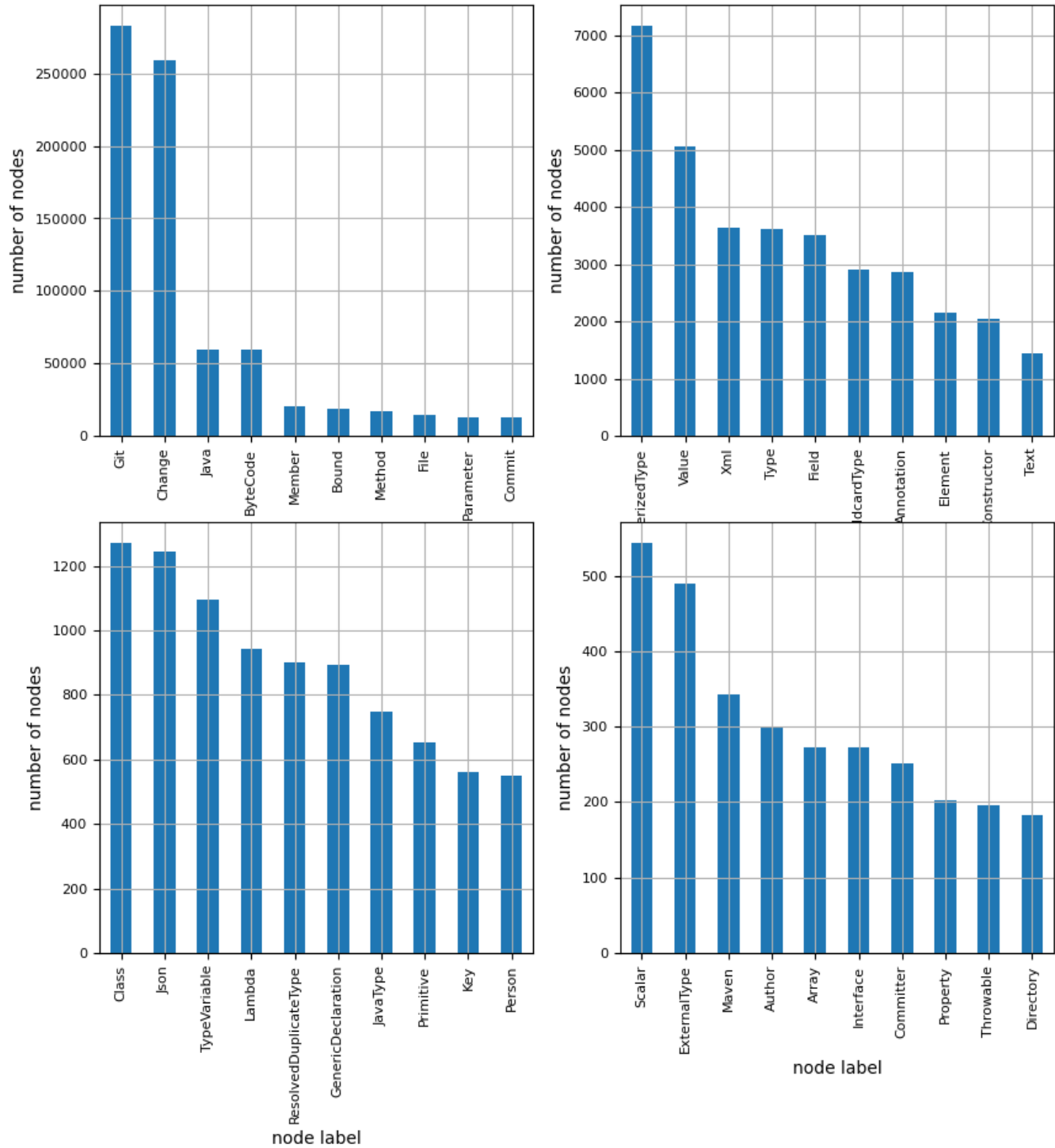
	nodeLabel	nodesWithThatLabel	nodesWithThatLabelPercent
0	Git	283306	81.287372
1	Change	259034	74.323146
2	Java	59340	17.026087
3	ByteCode	59152	16.972145
4	Member	20253	5.811078
5	Bound	18456	5.295475
6	Method	16751	4.806269
7	File	14666	4.208032
8	Parameter	13029	3.738337
9	Commit	12705	3.645373
10	ParameterizedType	7176	2.058969
11	Value	5068	1.454132
12	Xml	3643	1.045265
13	Type	3618	1.038092
14	Field	3502	1.004809
15	WildcardType	2908	0.834376
16	Annotation	2865	0.822038
17	Element	2144	0.615166
18	Constructor	2043	0.586186
19	Text	1436	0.412023
20	Class	1272	0.364968
21	Json	1245	0.357221
22	TypeVariable	1096	0.314469
23	Lambda	942	0.270283
24	ResolvedDuplicateType	899	0.257945
25	GenericDeclaration	894	0.256510
26	JavaType	748	0.214619
27	Primitive	652	0.187075
28	Key	560	0.160678
29	Person	550	0.157808
30	Scalar	544	0.156087
31	ExternalType	489	0.140306
32	Maven	343	0.098415
33	Author	298	0.085503
34	Array	273	0.078330
35	Interface	273	0.078330
36	Committer	252	0.072305
37	Property	202	0.057959
38	Throwable	196	0.056237
39	Directory	183	0.052507

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: 1082402

	relationshipType	nodesWithThatRelationshipType	nodesWithThatRelationshipTypePercent
0	CONTAINS_CHANGE	259034	23.931404
1	MODIFIES	259034	23.931404
2	UPDATES	170411	15.743781
3	CREATES	61193	5.653445
4	DELETES	37976	3.508493
5	INVOKES	35947	3.321040
6	COMMITTED	25410	2.347557
7	DEPENDS_ON	21931	2.026142
8	OF_TYPE	21394	1.976530
9	DECLARES	20698	1.912229
10	OF_RAW_TYPE	17093	1.579173
11	HAS_PARENT	15386	1.421468
12	HAS	14125	1.304968
13	HAS_COMMIT	12705	1.173778
14	RETURNS	12578	1.162045
15	HAS_FILE	10810	0.998705
16	RENAMES	10546	0.974315
17	READS	9161	0.846358
18	HAS_ACTUAL_TYPE_ARGUMENT	8288	0.765704
19	HAS_NEW_NAME	6237	0.576218
20	OF_GENERIC_TYPE	5906	0.545638
21	RESOLVES_TO	5215	0.481799
22	SIMILAR	3977	0.367424
23	WRITES	3818	0.352734
24	CONTAINS	3814	0.352364
25	RETURNS_GENERIC	3545	0.327512
26	ANNOTATED_BY	2810	0.259608
27	REQUIRES	2174	0.200850
28	HAS_FIRST_CHILD	2144	0.198078
29	HAS_LAST_CHILD	2144	0.198078

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)

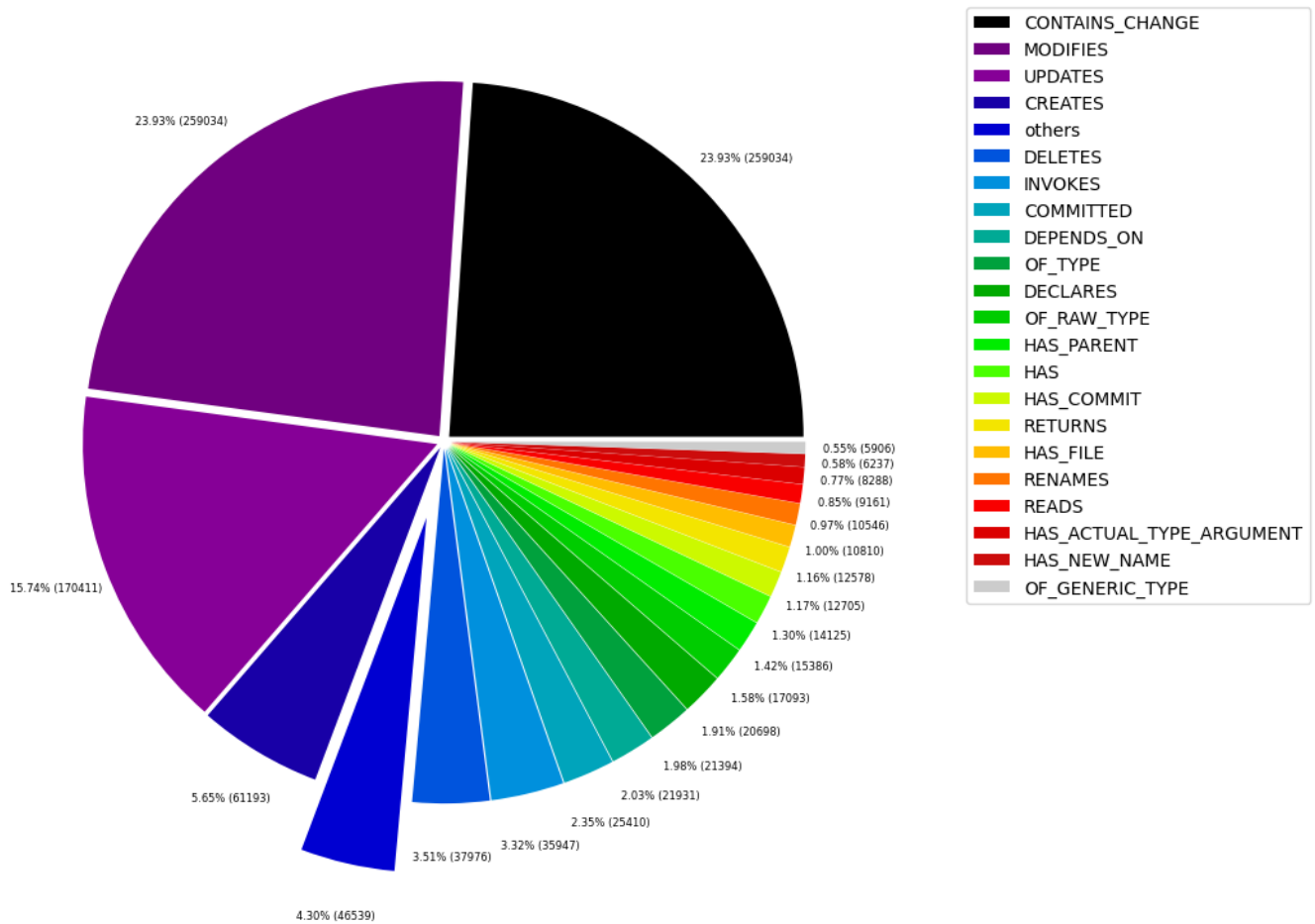


Table 2b - Lowest relationship count by type

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.

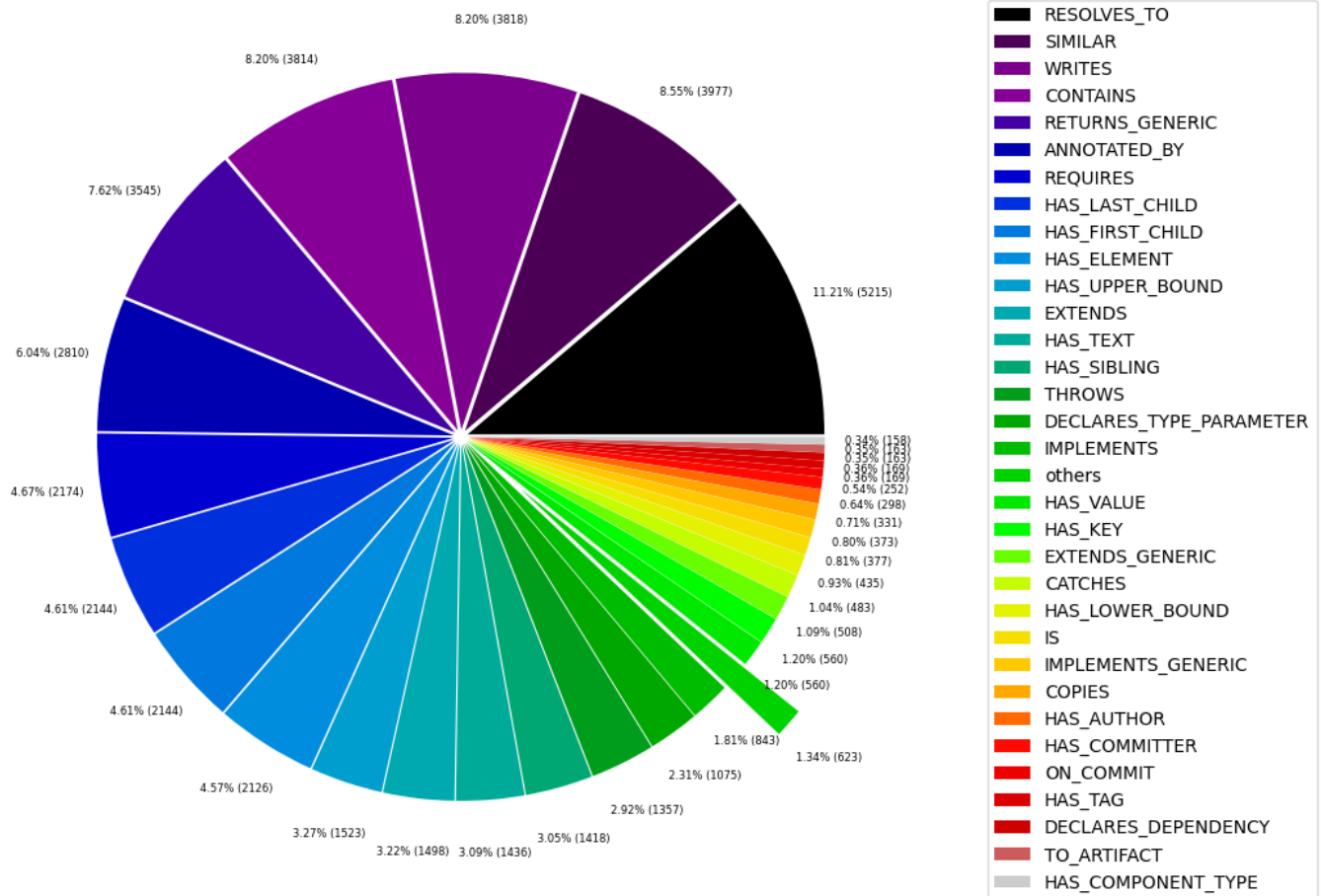
	relationshipType	nodesWithThatRelationshipType	nodesWithThatRelationshipTypePercent
0	HAS_PROPERTY	1	0.000092
1	THROWS_GENERIC	5	0.000462
2	EXCLUDES	5	0.000462
3	DESCRIBES	9	0.000831
4	HAS_ROOT_ELEMENT	10	0.000924
5	HAS_GOAL	16	0.001478
6	HAS_EXECUTION	16	0.001478
7	OF_NAMESPACE	18	0.001663
8	HAS_ATTRIBUTE	18	0.001663
9	INCLUDES_CONCEPT	19	0.001755
10	USES_PLUGIN	21	0.001940
11	IS_ARTIFACT	21	0.001940
12	HAS_CONFIGURATION	21	0.001940
13	REQUIRES_TYPE_PARAMETER	21	0.001940
14	REQUIRES_CONCEPT	28	0.002587
15	HAS_DEFAULT	36	0.003326
16	DECLARES_NAMESPACE	36	0.003326
17	HAS_BRANCH	37	0.003418
18	HAS_HEAD	38	0.003511
19	CONTAINS_VALUE	121	0.011179
20	COPY_OF	126	0.011641
21	HAS_COMPONENT_TYPE	158	0.014597
22	DECLARES_DEPENDENCY	163	0.015059
23	TO_ARTIFACT	163	0.015059
24	ON_COMMIT	169	0.015613
25	HAS_TAG	169	0.015613
26	HAS_COMMITTER	252	0.023282
27	HAS_AUTHOR	298	0.027531
28	COPIES	331	0.030580
29	IMPLEMENTS_GENERIC	373	0.034460

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, Change]	MODIFIES	[File, Git]	259034	259034	
1	[Git, Commit]	CONTAINS_CHANGE	[Git, Change]	259034	12705	
2	[Git, Change]	UPDATES	[File, Git]	170411	259034	
3	[Git, Change]	CREATES	[File, Git]	61193	259034	
4	[Git, Change]	DELETES	[File, Git]	37976	259034	
5	[Java, ByteCode, Member, Method]	INVOKES	[Java, ByteCode, Member, Method]	21999	13102	
6	[Git, Commit]	HAS_PARENT	[Git, Commit]	15377	12705	
7	[Repository, File, Git]	HAS_COMMIT	[Git, Commit]	12705	1	
8	[Author, Git, Person]	COMMITTED	[Git, Commit]	12705	298	
9	[Committer, Git, Person]	COMMITTED	[Git, Commit]	12705	252	
10	[Repository, File, Git]	HAS_FILE	[File, Git]	10810	1	
11	[Git, Change]	RENAMES	[File, Git]	10546	259034	
12	[Java, ByteCode, Member, Method]	HAS	[Java, ByteCode, Parameter]	8363	13102	
13	[Java, ByteCode, Member, Method]	READS	[Java, ByteCode, Member, Field]	8221	13102	
14	[File, Git]	HAS_NEW_NAME	[File, Git]	6237	10810	
15	[Java, ByteCode, Parameter]	OF_TYPE	[Type, File, Java, ByteCode, JavaType]	6079	13029	
16	[Type, File, Java, ByteCode, Class]	DECLARES	[Java, ByteCode, Member, Method]	5090	770	
17	[Type, File, Java, ByteCode, Class]	DEPENDS_ON	[Type, File, Java, ByteCode, JavaType]	4017	770	
18	[Java, ByteCode, Bound]	OF_RAW_TYPE	[Type, File, Java, ByteCode, JavaType]	3427	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, TypeVariable, Bound]	2454	7176	
23	[Java, ByteCode, Member, Method, Constructor]	WRITES	[Java, ByteCode, Member, Field]	2438	2039	
24	[Java, Value, ByteCode, Annotation]	OF_TYPE	[Type, File, Java, ByteCode, ExternalType, Ext...	2341	2822	
25	[Type, File, Java, ByteCode, Class]	DECLARES	[Java, ByteCode, Member, Field]	2142	770	
26	[Xml, Element]	HAS_ELEMENT	[Xml, Element]	2126	2144	
27	[Java, ByteCode, Member, Method, Constructor]	INVOKES	[Java, ByteCode, Member, Method, Constructor]	2119	2039	
28	[Java, ByteCode, Member, Method]	RETURNS	[Type, File, Java, ByteCode, JavaType]	2080	13102	
29	[Type, File, Java, GenericDeclaration, ByteCod...	DECLARES	[Java, ByteCode, Member, Method]	2058	229	

Graph Density

```
total_number_of_nodes (vertices): 348524
total_number_of_relationships (edges): 1082402
-> total directed graph density: 8.910959146708332e-06
-> total directed graph density in percent: 0.0008910959146708332
```