

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]	245645	73.481506
1	[Java, ByteCode, Member, Method]	13191	3.945916
2	[Java, ByteCode, Parameter]	13016	3.893567
3	[Git, Commit]	12051	3.604900
4	[File, Git]	10677	3.193886
5	[Java, ByteCode, ParameterizedType, Bound]	7172	2.145410
6	[Java, ByteCode, Bound]	7113	2.127761
7	[Java, ByteCode, Member, Field]	3503	1.047877
8	[Java, ByteCode, Bound, WildcardType]	2908	0.869890
9	[Java, Value, ByteCode, Annotation]	2822	0.844165
10	[Xml, Element]	2144	0.641350
11	[Java, ByteCode, Member, Constructor, Method]	2040	0.610239
12	[Xml, Text]	1436	0.429561
13	[Java, ByteCode, Bound, TypeVariable]	1096	0.327854
14	[Java, ByteCode, Member, Method, Lambda]	938	0.280590
15	[Type, File, Java, ByteCode, ResolvedDuplicate...	900	0.269223
16	[Type, File, Java, ByteCode, Class]	861	0.257557
17	[Type, File, Java, ByteCode, JavaType]	748	0.223754
18	[Java, Value, ByteCode, Primitive]	650	0.194439
19	[Java, ByteCode, Member, Method, GenericDeclar...	569	0.170209
20	[Json, Key]	560	0.167517
21	[Value, Json, Scalar]	544	0.162731
22	[Type, File, Java, ByteCode, ExternalType]	396	0.118458
23	[Author, Git, Person]	293	0.087647
24	[Value, Array]	267	0.079870
25	[Committer, Git, Person]	248	0.074186
26	[Type, File, Java, ByteCode, Class, GenericDec...	236	0.070596
27	[Value, Property]	202	0.060426
28	[Type, File, Java, ByteCode, Interface]	187	0.055939
29	[Java, Value, ByteCode, Class]	172	0.051452

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)

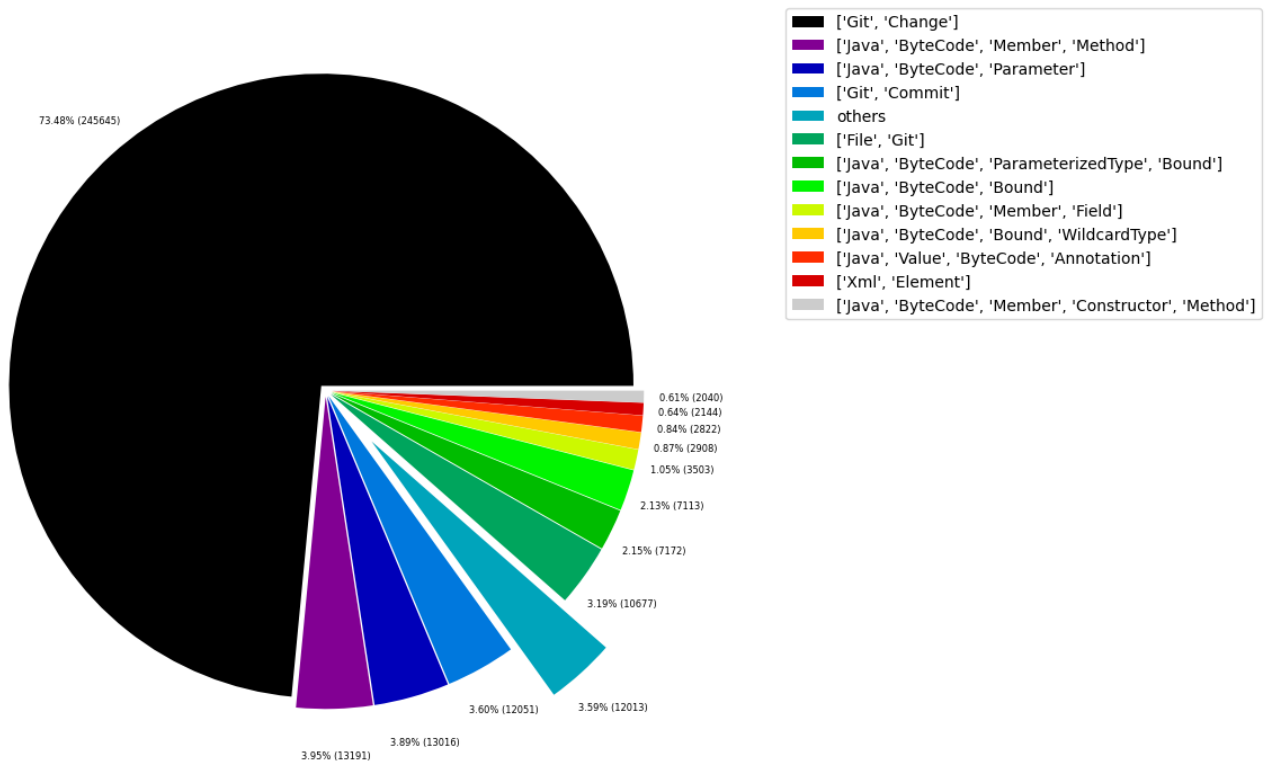


Table 1b - Lowest node count by label combination

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	0.000299
1	[Repository, File, Git]	1	0.000299
2	[File, Json]	2	0.000598
3	[File]	3	0.000897
4	[Java, ByteCode, Member, Constructor, Method, ...]	4	0.001197
5	[Maven, Exclusion]	5	0.001496
6	[Value, Json, Array]	6	0.001795
7	[File, Maven, Xml, Pom, Document]	9	0.002692
8	[Type, File, Java, ByteCode, Void]	9	0.002692
9	[Java, ManifestSection]	9	0.002692
10	[File, Java, Manifest]	9	0.002692
11	[Artifact, File, Jar, Archive, Zip, Java]	9	0.002692
12	[File, Java, ServiceLoader]	10	0.002991
13	[File, Java, Properties]	12	0.003590
14	[Maven, ExecutionGoal]	16	0.004786
15	[Maven, PluginExecution]	16	0.004786
16	[Xml, Attribute]	18	0.005384
17	[jQAssistant, Rule, Concept]	19	0.005684
18	[Maven, Plugin]	21	0.006282
19	[Maven, Configuration]	21	0.006282
20	[Type, File, Java, ByteCode, Enum]	28	0.008376
21	[Git, Branch]	29	0.008675
22	[Type, File, Java, ByteCode, PrimitiveType]	29	0.008675
23	[Xml, Namespace]	36	0.010769
24	[Type, File, Java, ByteCode, Annotation]	43	0.012863
25	[File, Directory]	44	0.013162
26	[Type, File, Java, ByteCode, GenericDeclaratio...	85	0.025427
27	[Artifact, Maven]	92	0.027521
28	[Type, File, Java, ByteCode, ExternalAnnotatio...	93	0.027820
29	[Value, ManifestEntry]	120	0.035896

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)

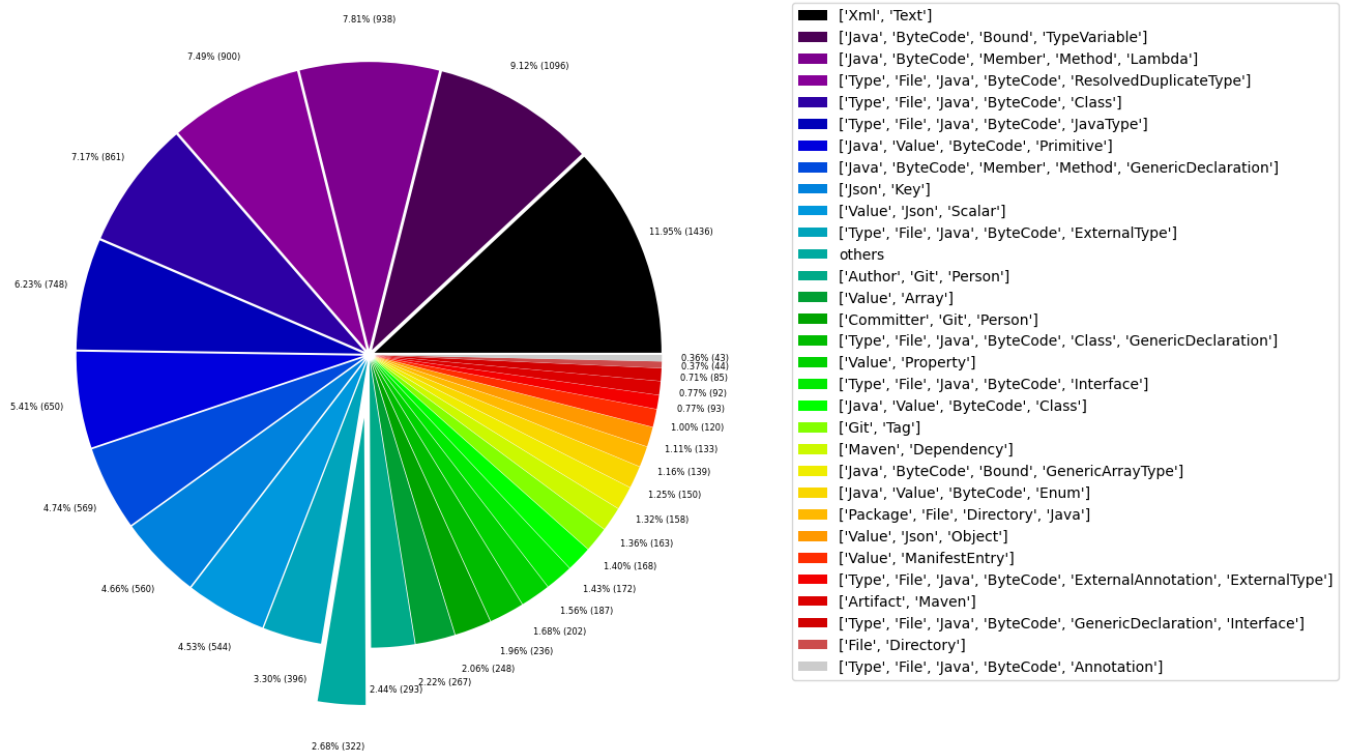


Table 1c - Highest node count by single label

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.

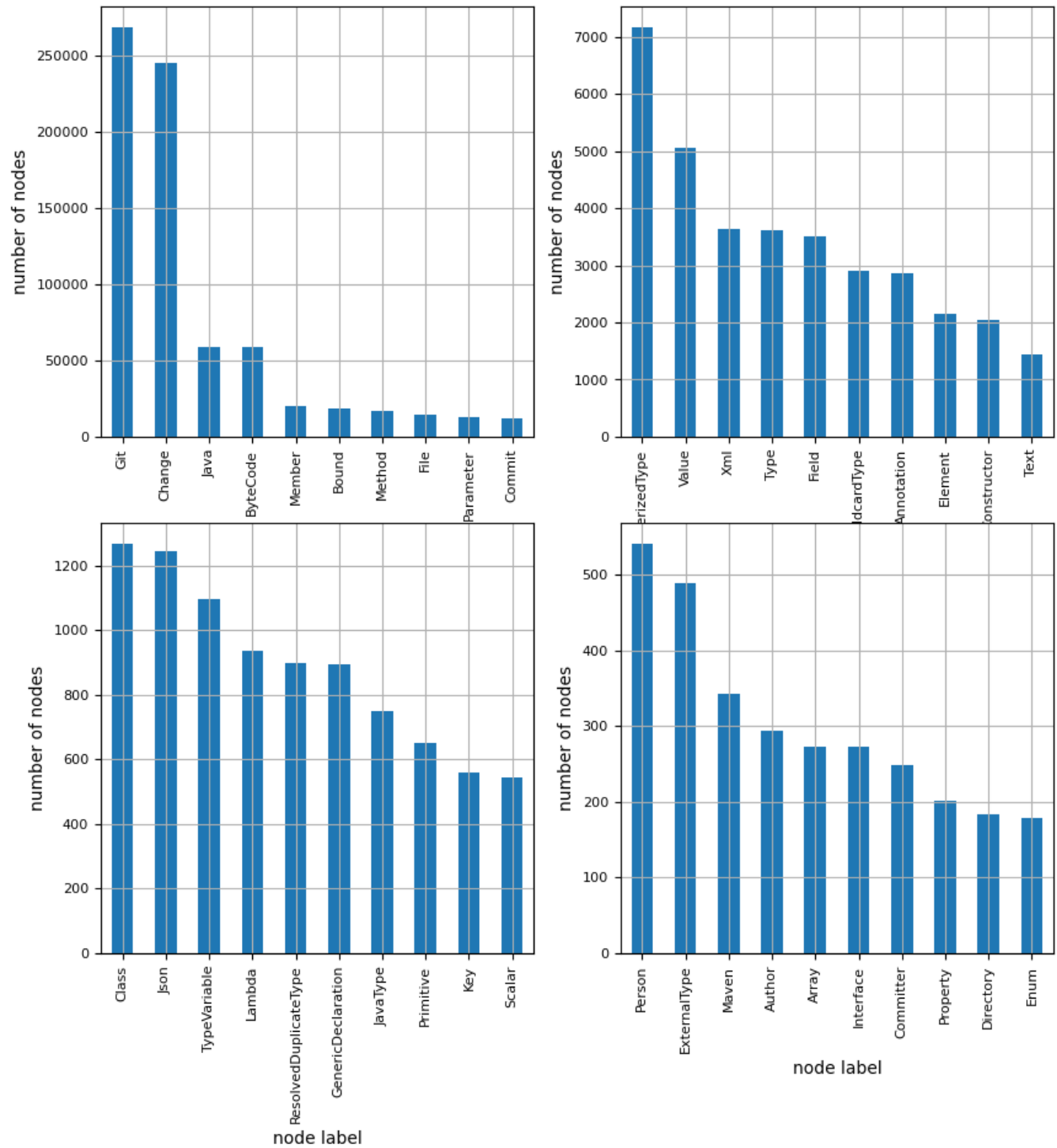
	nodeLabel	nodesWithThatLabel	nodesWithThatLabelPercent
0	Git	269112	80.501354
1	Change	245645	73.481506
2	Java	59305	17.740319
3	ByteCode	59117	17.684081
4	Member	20245	6.056028
5	Bound	18447	5.518180
6	Method	16742	5.008151
7	File	14530	4.346460
8	Parameter	13016	3.893567
9	Commit	12051	3.604900
10	ParameterizedType	7172	2.145410
11	Value	5066	1.515428
12	Xml	3643	1.089756
13	Type	3615	1.081380
14	Field	3503	1.047877
15	WildcardType	2908	0.869890
16	Annotation	2865	0.857027
17	Element	2144	0.641350
18	Constructor	2044	0.611436
19	Text	1436	0.429561
20	Class	1269	0.379605
21	Json	1245	0.372426
22	TypeVariable	1096	0.327854
23	Lambda	938	0.280590
24	ResolvedDuplicateType	900	0.269223
25	GenericDeclaration	894	0.267428
26	JavaType	748	0.223754
27	Primitive	650	0.194439
28	Key	560	0.167517
29	Scalar	544	0.162731
30	Person	541	0.161833
31	ExternalType	489	0.146278
32	Maven	343	0.102604
33	Author	293	0.087647
34	Array	273	0.081664
35	Interface	272	0.081365
36	Committer	248	0.074186
37	Property	202	0.060426
38	Directory	183	0.054742
39	Enum	178	0.053246

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: 1037134

	relationshipType	nodesWithThatRelationshipType	nodesWithThatRelationshipTypePercent
0	CONTAINS_CHANGE	245645	23.684982
1	MODIFIES	245645	23.684982
2	UPDATES	159018	15.332445
3	CREATES	59721	5.758272
4	DELETES	37196	3.586422
5	INVOKES	35668	3.439093
6	COMMITTED	24102	2.323904
7	DEPENDS_ON	21887	2.110335
8	OF_TYPE	21373	2.060775
9	DECLARES	20686	1.994535
10	OF_RAW_TYPE	17084	1.647232
11	HAS_PARENT	14652	1.412739
12	HAS	14110	1.360480
13	RETURNS	12562	1.211222
14	HAS_COMMIT	12051	1.161952
15	HAS_FILE	10677	1.029472
16	RENAMES	10290	0.992157
17	READS	9097	0.877129
18	HAS_ACTUAL_TYPE_ARGUMENT	8284	0.798740
19	HAS_NEW_NAME	6199	0.597705
20	OF_GENERIC_TYPE	5903	0.569165
21	RESOLVES_TO	5197	0.501092
22	SIMILAR	3968	0.382593
23	WRITES	3812	0.367551
24	CONTAINS	3806	0.366973
25	RETURNS_GENERIC	3543	0.341614
26	ANNOTATED_BY	2810	0.270939
27	REQUIRES	2175	0.209713
28	HAS_FIRST_CHILD	2144	0.206724
29	HAS_LAST_CHILD	2144	0.206724

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)

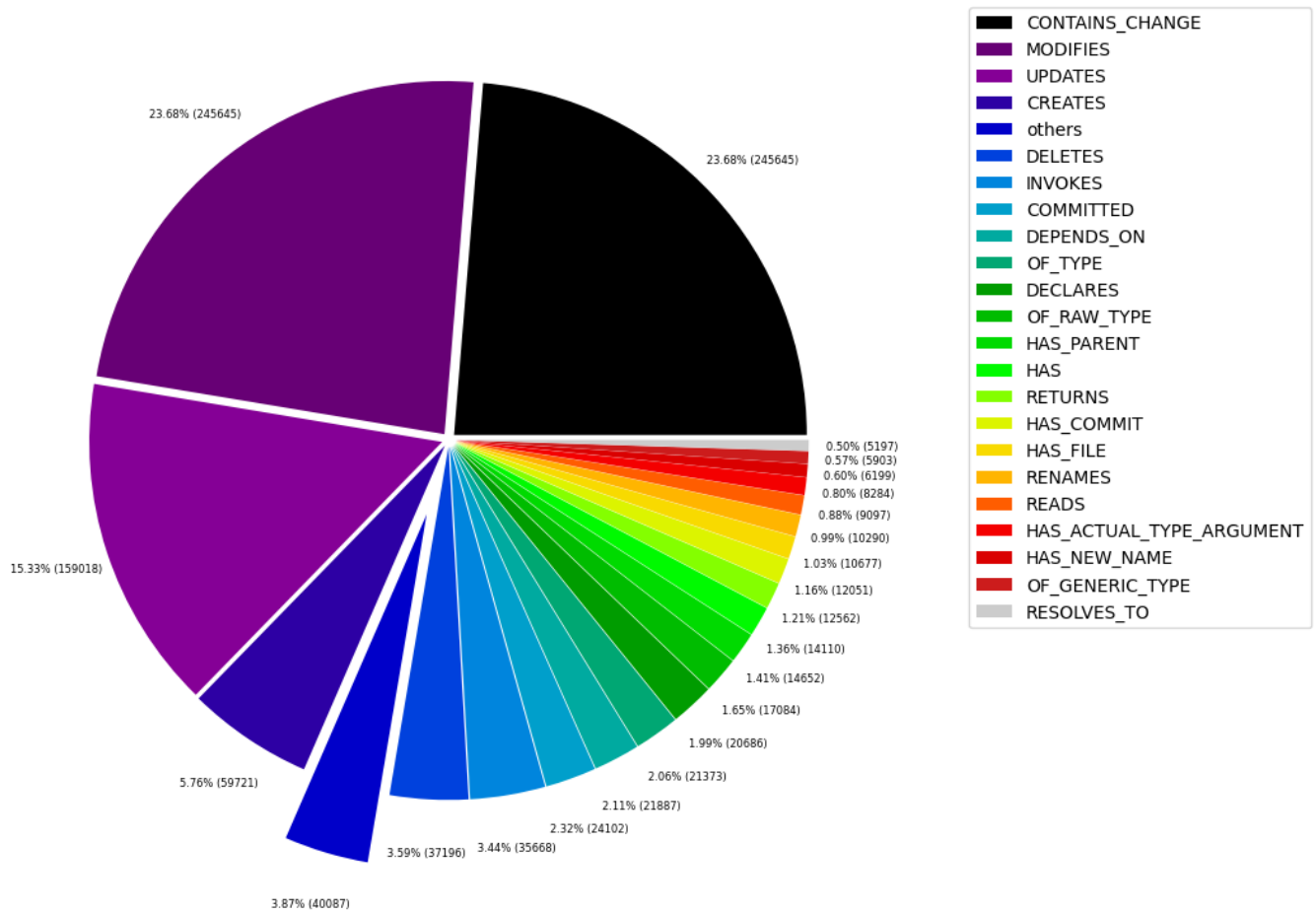


Table 2b - Lowest relationship count by type

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.

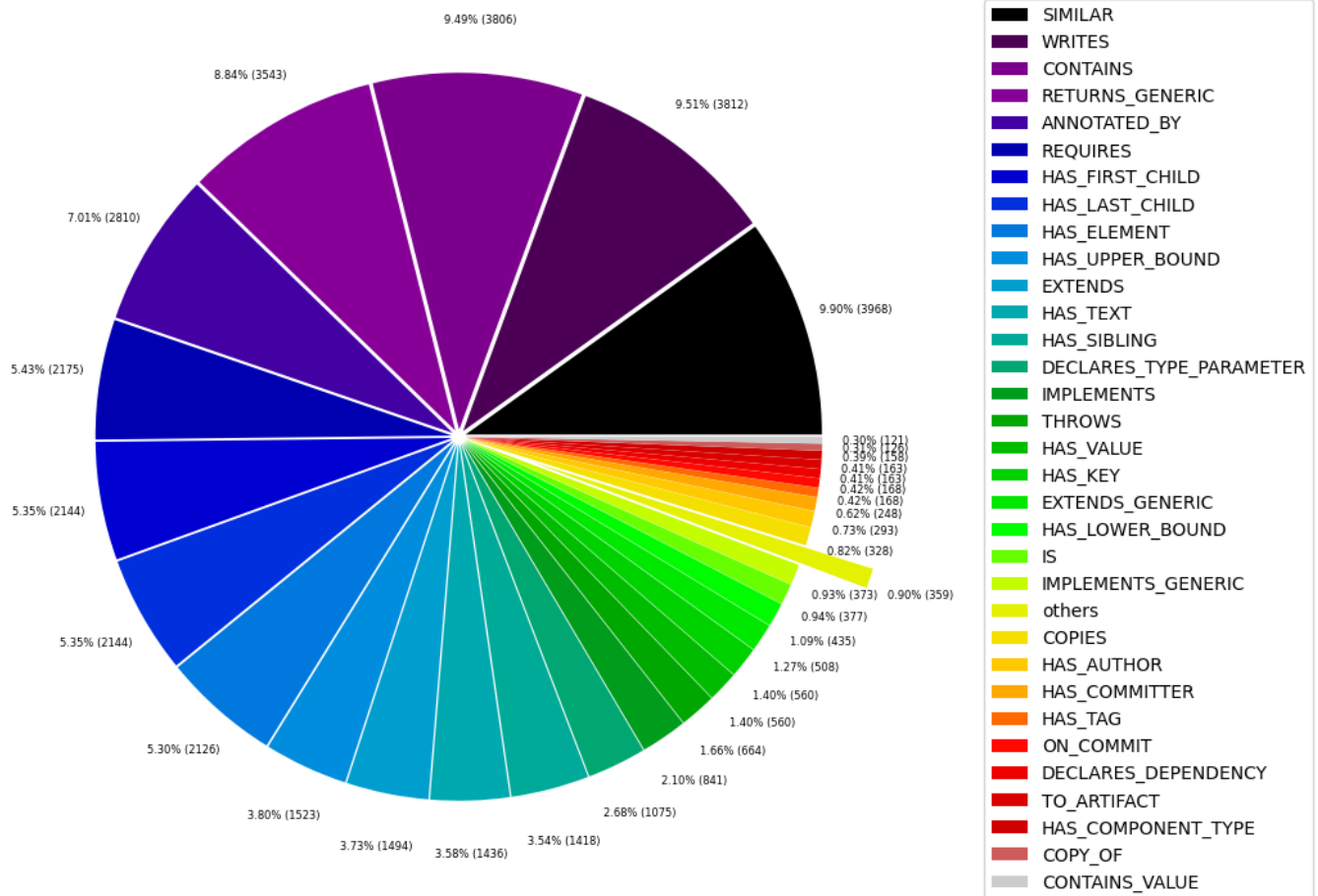
	relationshipType	nodesWithThatRelationshipType	nodesWithThatRelationshipTypePercent
0	HAS_PROPERTY	1	0.000096
1	THROWS_GENERIC	5	0.000482
2	EXCLUDES	5	0.000482
3	HAS_ROOT_ELEMENT	9	0.000868
4	DESCRIBES	9	0.000868
5	HAS_GOAL	16	0.001543
6	HAS_EXECUTION	16	0.001543
7	OF_NAMESPACE	18	0.001736
8	HAS_ATTRIBUTE	18	0.001736
9	INCLUDES_CONCEPT	19	0.001832
10	USES_PLUGIN	21	0.002025
11	REQUIRES_TYPE_PARAMETER	21	0.002025
12	IS_ARTIFACT	21	0.002025
13	HAS_CONFIGURATION	21	0.002025
14	REQUIRES_CONCEPT	28	0.002700
15	HAS_BRANCH	29	0.002796
16	HAS_HEAD	30	0.002893
17	DECLARES_NAMESPACE	36	0.003471
18	HAS_DEFAULT	36	0.003471
19	CONTAINS_VALUE	121	0.011667
20	COPY_OF	126	0.012149
21	HAS_COMPONENT_TYPE	158	0.015234
22	TO_ARTIFACT	163	0.015716
23	DECLARES_DEPENDENCY	163	0.015716
24	ON_COMMIT	168	0.016198
25	HAS_TAG	168	0.016198
26	HAS_COMMITTER	248	0.023912
27	HAS_AUTHOR	293	0.028251
28	COPIES	328	0.031626
29	IMPLEMENTS_GENERIC	373	0.035964

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]	245645	12051	
1	[Git, Change]	MODIFIES	[File, Git]	245645	245645	
2	[Git, Change]	UPDATES	[File, Git]	159018	245645	
3	[Git, Change]	CREATES	[File, Git]	59721	245645	
4	[Git, Change]	DELETES	[File, Git]	37196	245645	
5	[Java, ByteCode, Member, Method]	INVOKES	[Java, ByteCode, Member, Method]	21547	13065	
6	[Git, Commit]	HAS_PARENT	[Git, Commit]	14643	12051	
7	[Repository, File, Git]	HAS_COMMIT	[Git, Commit]	12051	1	
8	[Author, Git, Person]	COMMITTED	[Git, Commit]	12051	293	
9	[Committer, Git, Person]	COMMITTED	[Git, Commit]	12051	248	
10	[Repository, File, Git]	HAS_FILE	[File, Git]	10677	1	
11	[Git, Change]	RENAMES	[File, Git]	10290	245645	
12	[Java, ByteCode, Member, Method]	HAS	[Java, ByteCode, Parameter]	8320	13065	
13	[Java, ByteCode, Member, Method]	READS	[Java, ByteCode, Member, Field]	8121	13065	
14	[Java, ByteCode, Parameter]	OF_TYPE	[Type, File, Java, ByteCode, JavaType]	6368	13016	
15	[File, Git]	HAS_NEW_NAME	[File, Git]	6199	10677	
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	2040	
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	2040	
25	[Java, ByteCode, Member, Method]	RETURNS	[Type, File, Java, ByteCode, JavaType]	2088	13065	
26	[Java, ByteCode, Member, Method]	INVOKES	[Java, ByteCode, Member, Constructor, Method]	2029	13065	
27	[Java, ByteCode, Member, Constructor, Method]	HAS	[Java, ByteCode, Parameter]	2023	2040	
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): 334295
total_number_of_relationships (edges): 1037134
-> total directed graph density: 9.280607571871717e-06
-> total directed graph density in percent: 0.0009280607571871718
```