

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]	245689	73.483677
1	[Java, ByteCode, Member, Method]	13198	3.947420
2	[Java, ByteCode, Parameter]	13016	3.892985
3	[Git, Commit]	12053	3.604959
4	[File, Git]	10677	3.193408
5	[Java, ByteCode, ParameterizedType, Bound]	7172	2.145090
6	[Java, ByteCode, Bound]	7113	2.127443
7	[Java, ByteCode, Member, Field]	3503	1.047720
8	[Java, ByteCode, Bound, WildcardType]	2908	0.869760
9	[Java, Value, ByteCode, Annotation]	2822	0.844038
10	[Xml, Element]	2144	0.641254
11	[Java, ByteCode, Member, Constructor, Method]	2039	0.609849
12	[Xml, Text]	1436	0.429496
13	[Java, ByteCode, Bound, TypeVariable]	1096	0.327805
14	[Java, ByteCode, Member, Method, Lambda]	938	0.280549
15	[Type, File, Java, ByteCode, ResolvedDuplicate...	900	0.269183
16	[Type, File, Java, ByteCode, Class]	861	0.257518
17	[Type, File, Java, ByteCode, JavaType]	748	0.223721
18	[Java, Value, ByteCode, Primitive]	650	0.194410
19	[Java, ByteCode, Member, Method, GenericDeclar...	569	0.170183
20	[Json, Key]	560	0.167492
21	[Value, Json, Scalar]	544	0.162706
22	[Type, File, Java, ByteCode, ExternalType]	396	0.118441
23	[Author, Git, Person]	293	0.087634
24	[Value, Array]	267	0.079858
25	[Committer, Git, Person]	248	0.074175
26	[Type, File, Java, ByteCode, Class, GenericDec...	236	0.070586
27	[Value, Property]	202	0.060417
28	[Type, File, Java, ByteCode, Interface]	187	0.055930
29	[Java, Value, ByteCode, Class]	172	0.051444

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)

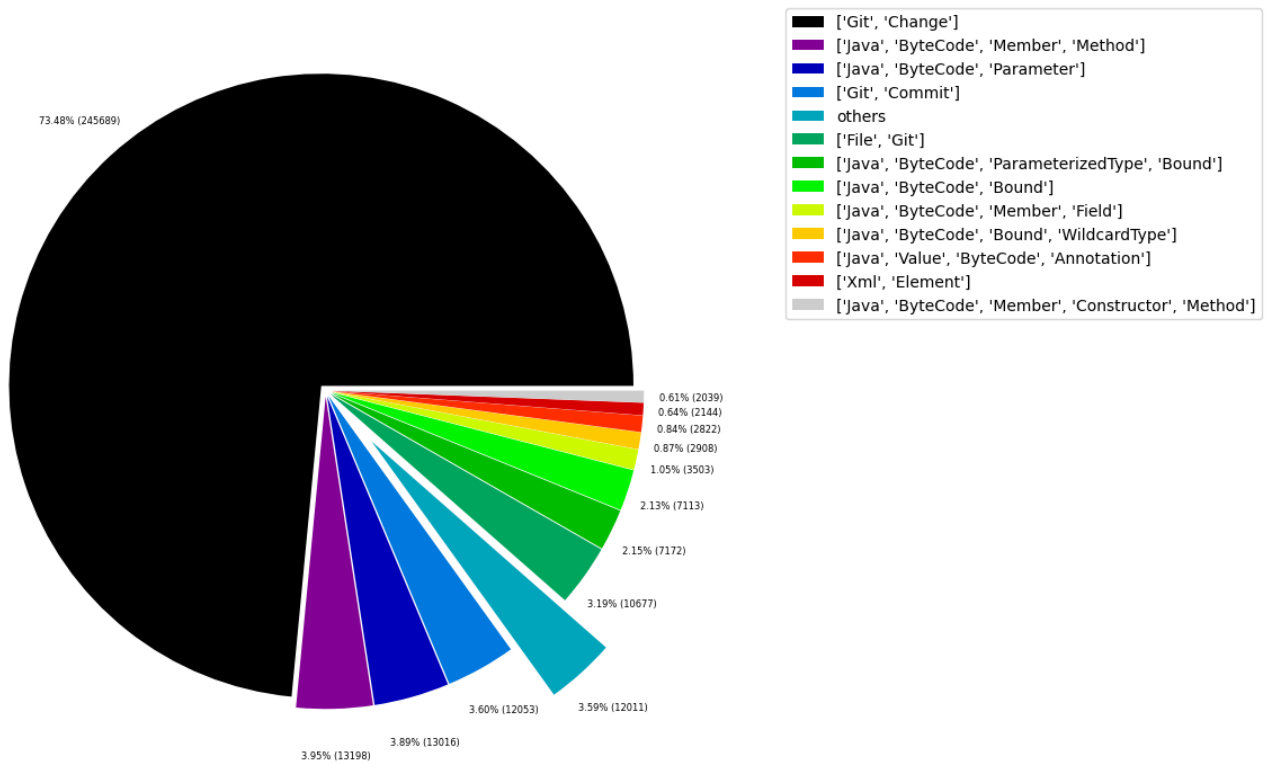


Table 1b - Lowest node count by label combination

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	0.001196
5	[Maven, Exclusion]	5	0.001495
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	0.003589
14	[Maven, ExecutionGoal]	16	0.004785
15	[Maven, PluginExecution]	16	0.004785
16	[Xml, Attribute]	18	0.005384
17	[jQAssistant, Rule, Concept]	19	0.005683
18	[Maven, Plugin]	21	0.006281
19	[Maven, Configuration]	21	0.006281
20	[Git, Branch]	27	0.008075
21	[Type, File, Java, ByteCode, Enum]	28	0.008375
22	[Type, File, Java, ByteCode, PrimitiveType]	29	0.008674
23	[Xml, Namespace]	36	0.010767
24	[Type, File, Java, ByteCode, Annotation]	43	0.012861
25	[File, Directory]	44	0.013160
26	[Type, File, Java, ByteCode, GenericDeclaratio...	85	0.025423
27	[Artifact, Maven]	92	0.027516
28	[Type, File, Java, ByteCode, ExternalAnnotatio...	93	0.027816
29	[Value, ManifestEntry]	120	0.035891

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)

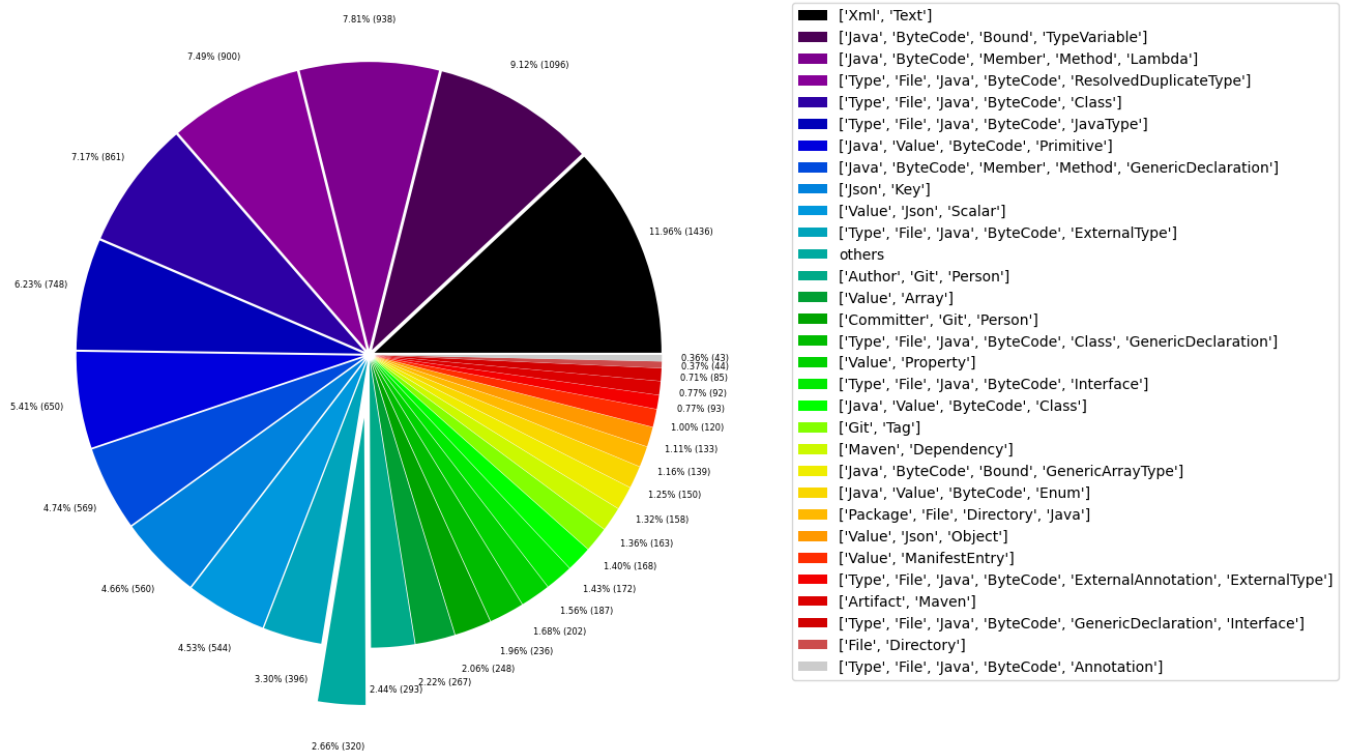


Table 1c - Highest node count by single label

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.

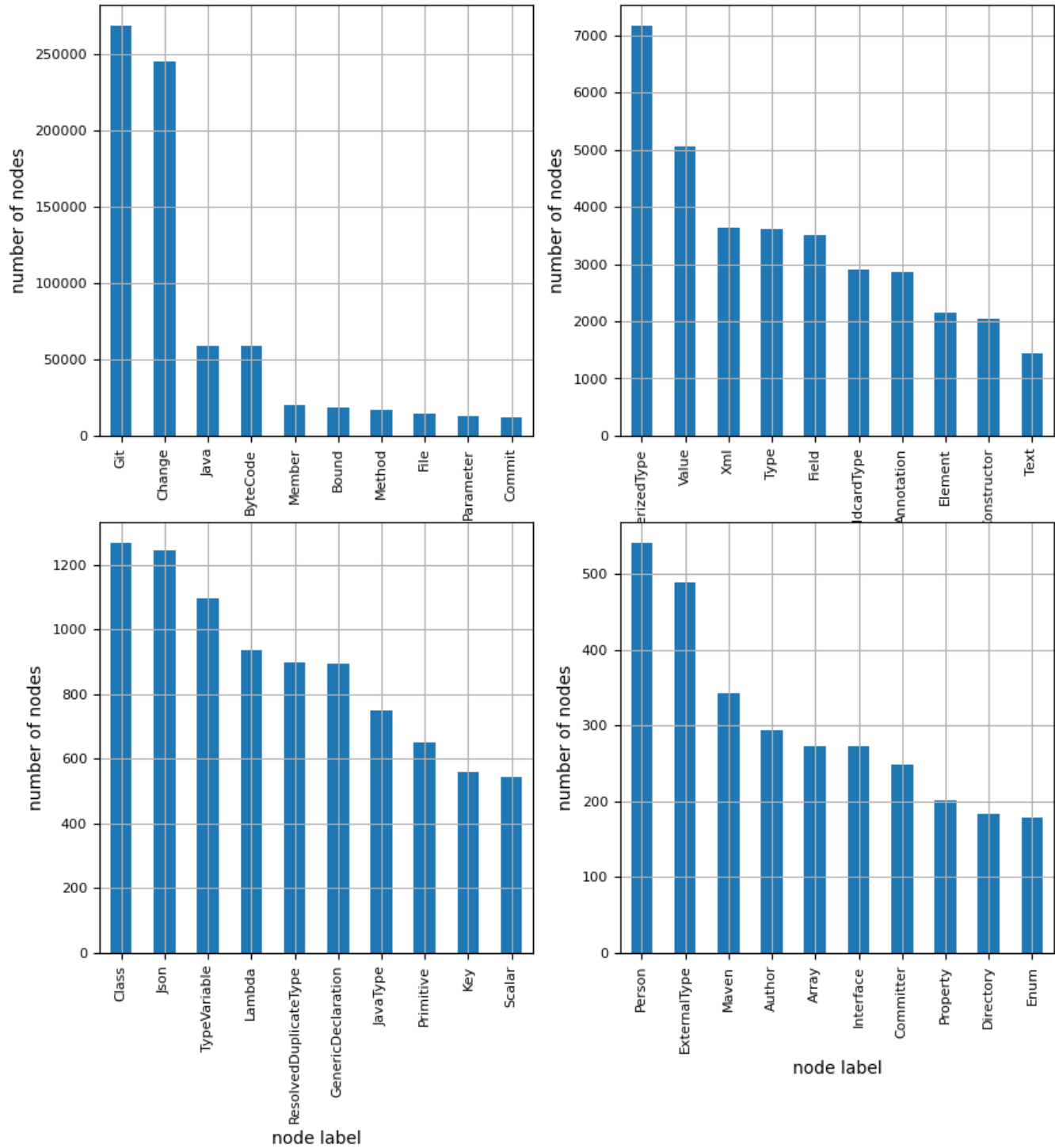
	nodeLabel	nodesWithThatLabel	nodesWithThatLabelPercent
0	Git	269156	80.502475
1	Change	245689	73.483677
2	Java	59311	17.739461
3	ByteCode	59123	17.683231
4	Member	20251	6.056917
5	Bound	18447	5.517355
6	Method	16748	5.009197
7	File	14530	4.345810
8	Parameter	13016	3.892985
9	Commit	12053	3.604959
10	ParameterizedType	7172	2.145090
11	Value	5066	1.515201
12	Xml	3643	1.089593
13	Type	3615	1.081219
14	Field	3503	1.047720
15	WildcardType	2908	0.869760
16	Annotation	2865	0.856899
17	Element	2144	0.641254
18	Constructor	2043	0.611045
19	Text	1436	0.429496
20	Class	1269	0.379548
21	Json	1245	0.372370
22	TypeVariable	1096	0.327805
23	Lambda	938	0.280549
24	ResolvedDuplicateType	900	0.269183
25	GenericDeclaration	894	0.267388
26	JavaType	748	0.223721
27	Primitive	650	0.194410
28	Key	560	0.167492
29	Scalar	544	0.162706
30	Person	541	0.161809
31	ExternalType	489	0.146256
32	Maven	343	0.102589
33	Author	293	0.087634
34	Array	273	0.081652
35	Interface	272	0.081353
36	Committer	248	0.074175
37	Property	202	0.060417
38	Directory	183	0.054734
39	Enum	178	0.053238

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: 1037261

	relationshipType	nodesWithThatRelationshipType	nodesWithThatRelationshipTypePercent
0	CONTAINS_CHANGE	245689	23.686324
1	MODIFIES	245689	23.686324
2	UPDATES	159060	15.334617
3	CREATES	59722	5.757664
4	DELETES	37197	3.586079
5	INVOKES	35650	3.436936
6	COMMITTED	24106	2.324005
7	DEPENDS_ON	21887	2.110076
8	OF_TYPE	21373	2.060523
9	DECLARES	20692	1.994869
10	OF_RAW_TYPE	17084	1.647030
11	HAS_PARENT	14656	1.412952
12	HAS	14110	1.360313
13	RETURNS	12562	1.211074
14	HAS_COMMIT	12053	1.162003
15	HAS_FILE	10677	1.029346
16	RENAMES	10290	0.992036
17	READS	9097	0.877021
18	HAS_ACTUAL_TYPE_ARGUMENT	8284	0.798642
19	HAS_NEW_NAME	6199	0.597632
20	OF_GENERIC_TYPE	5903	0.569095
21	RESOLVES_TO	5198	0.501127
22	SIMILAR	3968	0.382546
23	WRITES	3812	0.367506
24	CONTAINS	3806	0.366928
25	RETURNS_GENERIC	3543	0.341573
26	ANNOTATED_BY	2810	0.270906
27	REQUIRES	2175	0.209687
28	HAS_FIRST_CHILD	2144	0.206698
29	HAS_LAST_CHILD	2144	0.206698

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)

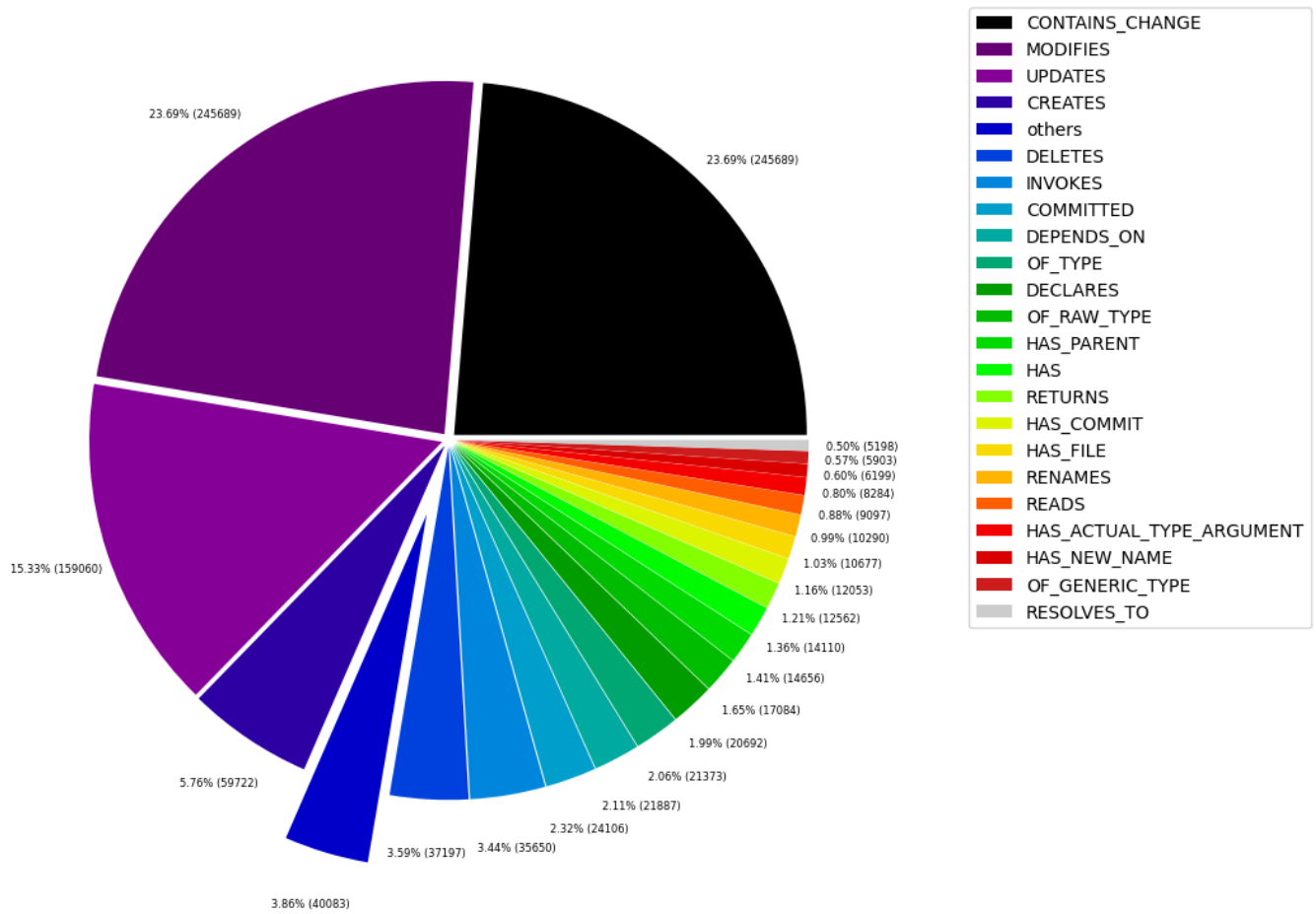


Table 2b - Lowest relationship count by type

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.

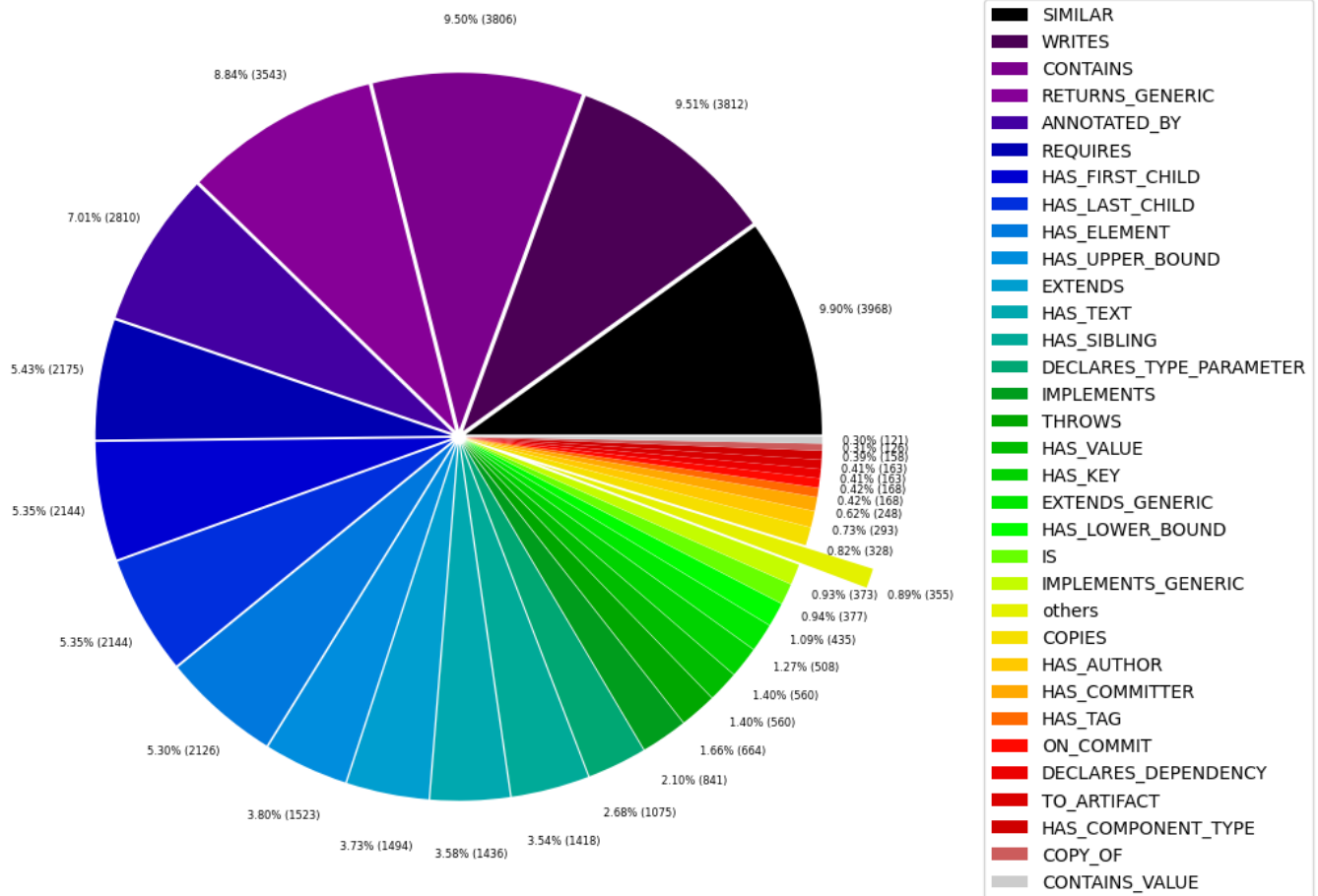
	relationshipType	nodesWithThatRelationshipType	nodesWithThatRelationshipTypePercent
0	HAS_PROPERTY	1	0.000096
1	THROWS_GENERIC	5	0.000482
2	EXCLUDES	5	0.000482
3	HAS_ROOT_ELEMENT	9	0.000868
4	DESCRIBES	9	0.000868
5	HAS_GOAL	16	0.001543
6	HAS_EXECUTION	16	0.001543
7	OF_NAMESPACE	18	0.001735
8	HAS_ATTRIBUTE	18	0.001735
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	HAS_BRANCH	27	0.002603
15	REQUIRES_CONCEPT	28	0.002699
16	HAS_HEAD	28	0.002699
17	DECLARES_NAMESPACE	36	0.003471
18	HAS_DEFAULT	36	0.003471
19	CONTAINS_VALUE	121	0.011665
20	COPY_OF	126	0.012147
21	HAS_COMPONENT_TYPE	158	0.015232
22	TO_ARTIFACT	163	0.015714
23	DECLARES_DEPENDENCY	163	0.015714
24	ON_COMMIT	168	0.016197
25	HAS_TAG	168	0.016197
26	HAS_COMMITTER	248	0.023909
27	HAS_AUTHOR	293	0.028247
28	COPIES	328	0.031622
29	IMPLEMENTS_GENERIC	373	0.035960

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]	245689	12053	
1	[Git, Change]	MODIFIES	[File, Git]	245689	245689	
2	[Git, Change]	UPDATES	[File, Git]	159060	245689	
3	[Git, Change]	CREATES	[File, Git]	59722	245689	
4	[Git, Change]	DELETES	[File, Git]	37197	245689	
5	[Java, ByteCode, Member, Method]	INVOKES	[Java, ByteCode, Member, Method]	21541	13072	
6	[Git, Commit]	HAS_PARENT	[Git, Commit]	14647	12053	
7	[Repository, File, Git]	HAS_COMMIT	[Git, Commit]	12053	1	
8	[Author, Git, Person]	COMMITTED	[Git, Commit]	12053	293	
9	[Committer, Git, Person]	COMMITTED	[Git, Commit]	12053	248	
10	[Repository, File, Git]	HAS_FILE	[File, Git]	10677	1	
11	[Git, Change]	RENAMES	[File, Git]	10290	245689	
12	[Java, ByteCode, Member, Method]	HAS	[Java, ByteCode, Parameter]	8320	13072	
13	[Java, ByteCode, Member, Method]	READS	[Java, ByteCode, Member, Field]	8121	13072	
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	2039	
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	2039	
25	[Java, ByteCode, Member, Method]	RETURNS	[Type, File, Java, ByteCode, JavaType]	2088	13072	
26	[Java, ByteCode, Member, Method]	INVOKES	[Java, ByteCode, Member, Constructor, Method]	2029	13072	
27	[Java, ByteCode, Member, Constructor, Method]	HAS	[Java, ByteCode, Parameter]	2023	2039	
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): 334345
total_number_of_relationships (edges): 1037261
-> total directed graph density: 9.278968114272644e-06
-> total directed graph density in percent: 0.0009278968114272643
```