

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]	242541	73.261725
1	[Java, ByteCode, Method, Member]	13204	3.988389
2	[Java, ByteCode, Parameter]	13000	3.926769
3	[Git, Commit]	11967	3.614742
4	[File, Git]	10671	3.223273
5	[Java, ByteCode, Bound, ParameterizedType]	7166	2.164556
6	[Java, ByteCode, Bound]	7112	2.148245
7	[Java, ByteCode, Member, Field]	3494	1.055395
8	[Java, ByteCode, Bound, WildcardType]	2906	0.877784
9	[Java, Value, ByteCode, Annotation]	2821	0.852109
10	[Xml, Element]	2144	0.647615
11	[Java, ByteCode, Constructor, Method, Member]	2040	0.616201
12	[Xml, Text]	1436	0.433757
13	[Java, ByteCode, Bound, TypeVariable]	1096	0.331057
14	[Java, ByteCode, Method, Member, Lambda]	936	0.282727
15	[Type, File, Java, ByteCode, ResolvedDuplicate...	900	0.271853
16	[Type, File, Java, ByteCode, Class]	861	0.260073
17	[Type, File, Java, ByteCode, JavaType]	746	0.225336
18	[Java, Value, ByteCode, Primitive]	650	0.196338
19	[Java, ByteCode, Method, Member, GenericDeclar...	569	0.171872
20	[Json, Key]	555	0.167643
21	[Value, Json, Scalar]	539	0.162810
22	[Type, File, Java, ByteCode, ExternalType]	396	0.119615
23	[Author, Git, Person]	292	0.088201
24	[Value, Array]	267	0.080650
25	[Committer, Git, Person]	247	0.074609
26	[Type, File, Java, ByteCode, Class, GenericDec...	236	0.071286
27	[Value, Property]	202	0.061016
28	[Type, File, Java, ByteCode, Interface]	187	0.056485
29	[Java, Value, ByteCode, Class]	172	0.051954

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)

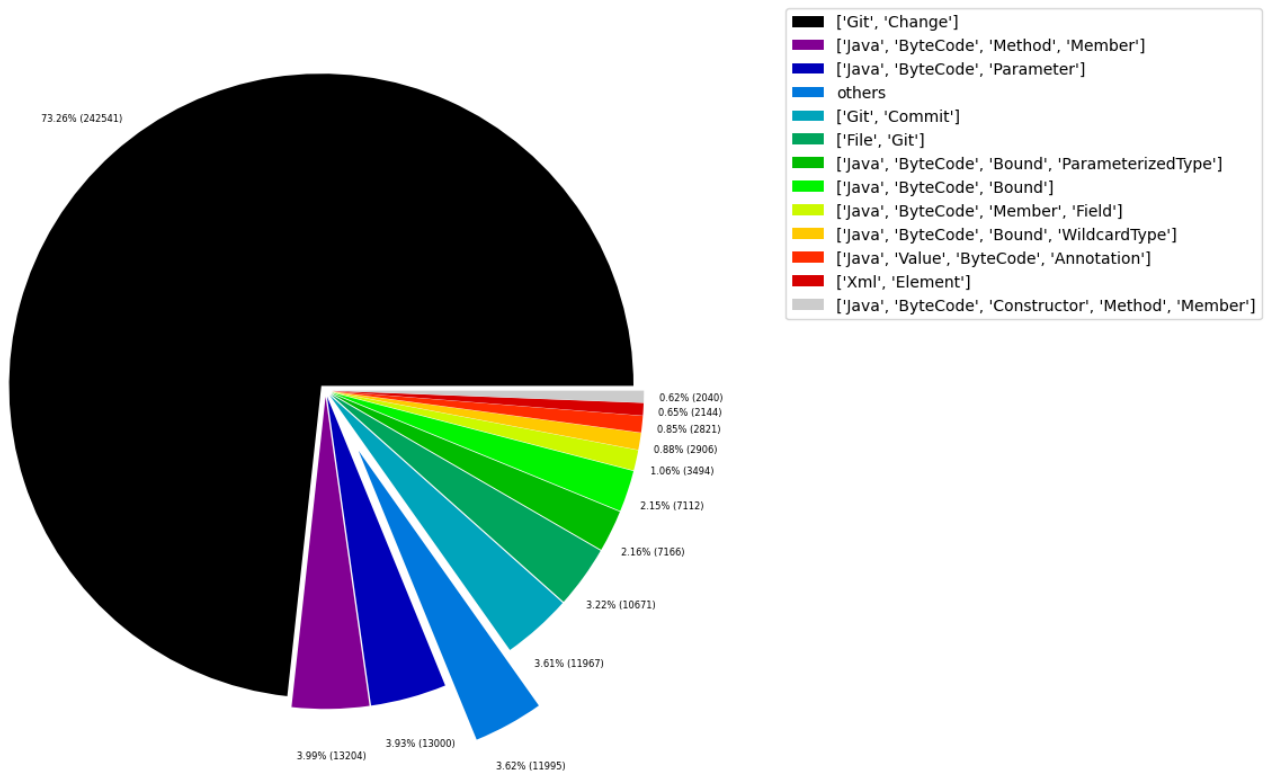


Table 1b - Lowest node count by label combination

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	0.000302
1	[File, TS, Scan]	1	0.000302
2	[File, Json]	2	0.000604
3	[File]	3	0.000906
4	[Java, ByteCode, Constructor, Method, Member, ...]	4	0.001208
5	[Maven, Exclusion]	5	0.001510
6	[Value, Array, Json]	6	0.001812
7	[File, Xml, Maven, Pom, Document]	9	0.002719
8	[Type, File, Java, ByteCode, Void]	9	0.002719
9	[Java, ManifestSection]	9	0.002719
10	[File, Java, Manifest]	9	0.002719
11	[Artifact, File, Jar, Archive, Zip, Java]	9	0.002719
12	[File, Java, ServiceLoader]	10	0.003021
13	[File, Java, Properties]	12	0.003625
14	[Maven, ExecutionGoal]	16	0.004833
15	[Maven, PluginExecution]	16	0.004833
16	[Xml, Attribute]	18	0.005437
17	[jQAssistant, Rule, Concept]	19	0.005739
18	[Maven, Plugin]	21	0.006343
19	[Maven, Configuration]	21	0.006343
20	[Type, File, Java, ByteCode, Enum]	28	0.008458
21	[Git, Branch]	29	0.008760
22	[Type, File, Java, ByteCode, PrimitiveType]	29	0.008760
23	[Xml, Namespace]	36	0.010874
24	[Type, File, Java, ByteCode, Annotation]	43	0.012989
25	[File, Directory]	44	0.013291
26	[Type, File, Java, ByteCode, GenericDeclaratio...	85	0.025675
27	[Artifact, Maven]	92	0.027789
28	[Type, File, Java, ByteCode, ExternalType, Ext...	93	0.028091
29	[Value, ManifestEntry]	120	0.036247

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.

<Figure size 640x480 with 0 Axes>

Nodes per label combination (less than 0.5% overall)

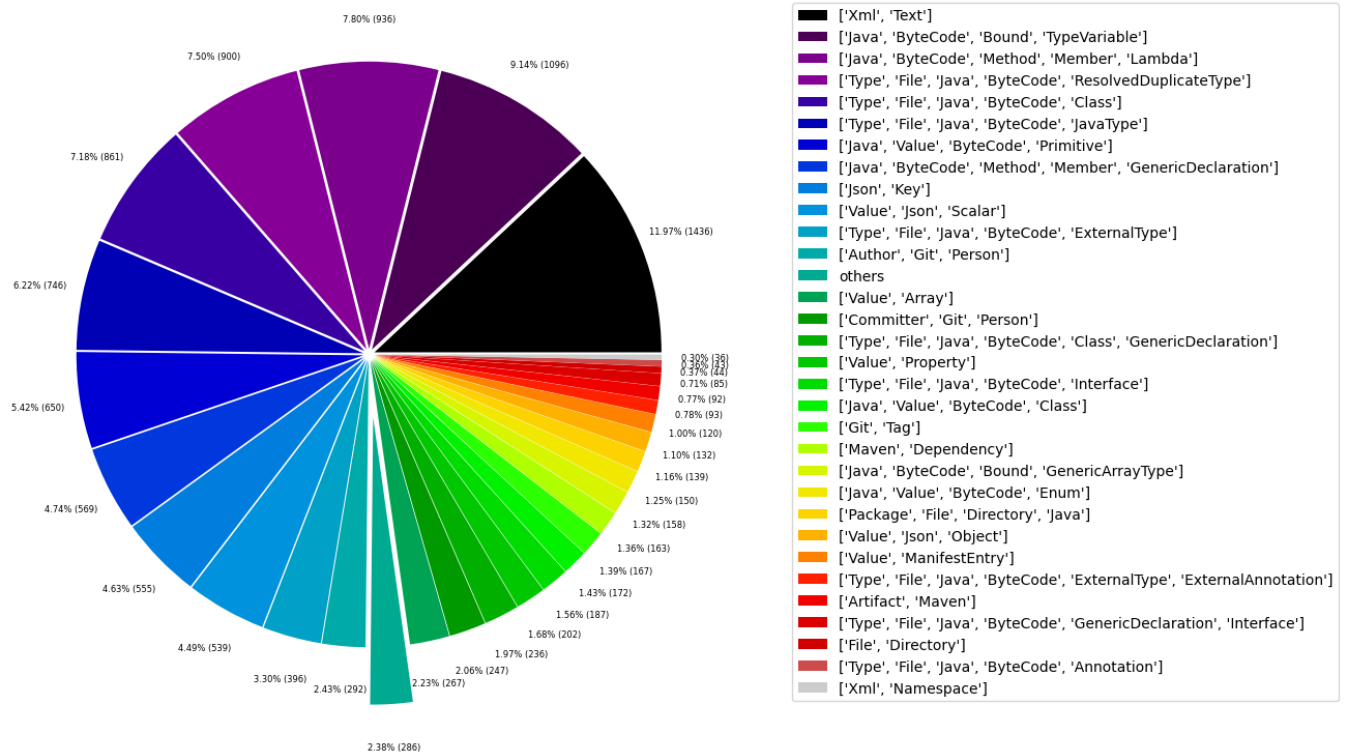


Table 1c - Highest node count by single label

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.

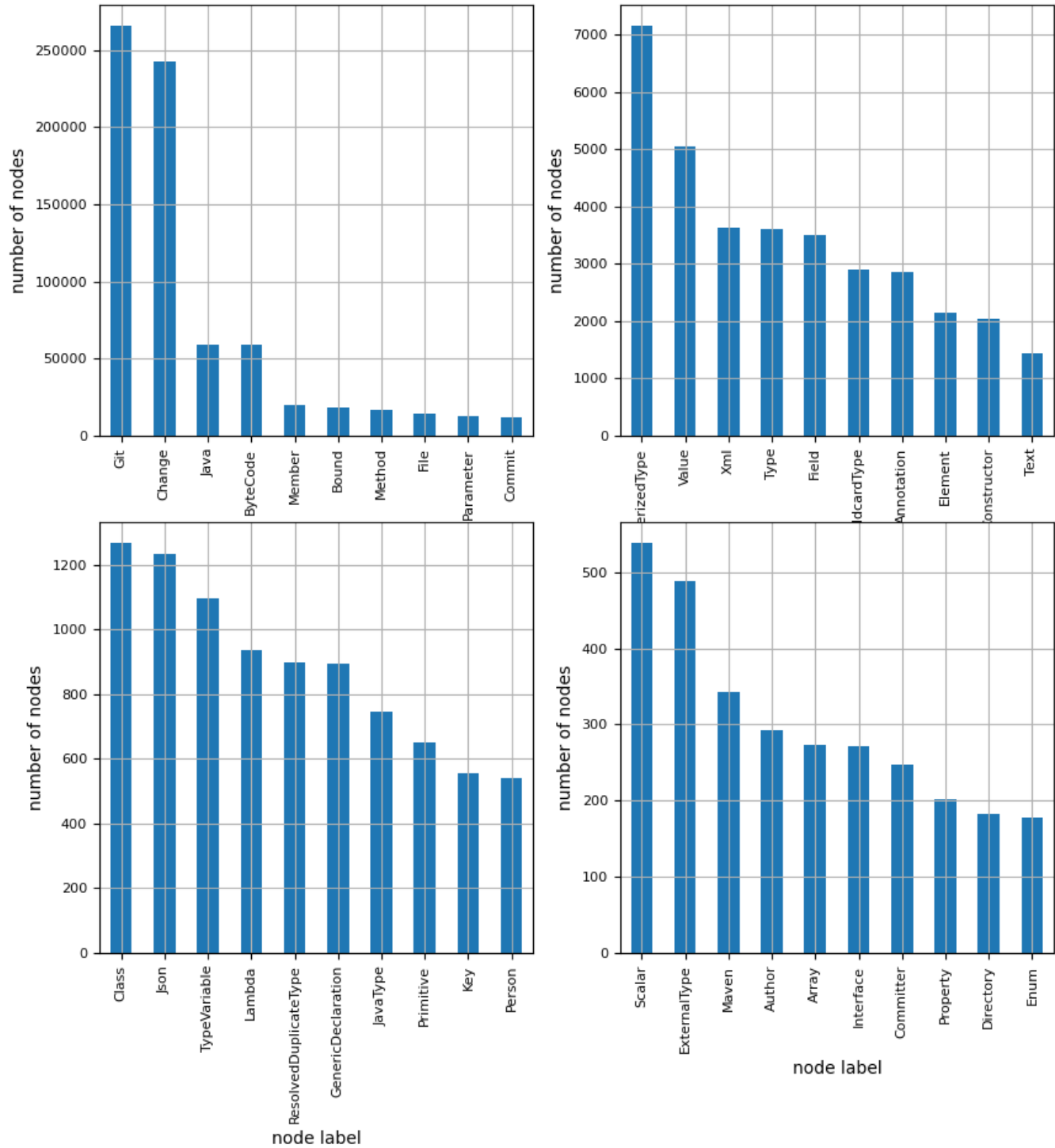
	nodeLabel	nodesWithThatLabel	nodesWithThatLabelPercent
0	Git	265914	80.321753
1	Change	242541	73.261725
2	Java	59279	17.905764
3	ByteCode	59091	17.848976
4	Member	20247	6.115791
5	Bound	18438	5.569366
6	Method	16753	5.060397
7	File	14522	4.386503
8	Parameter	13000	3.926769
9	Commit	11967	3.614742
10	ParameterizedType	7166	2.164556
11	Value	5059	1.528117
12	Xml	3643	1.100401
13	Type	3613	1.091340
14	Field	3494	1.055395
15	WildcardType	2906	0.877784
16	Annotation	2864	0.865097
17	Element	2144	0.647615
18	Constructor	2044	0.617409
19	Text	1436	0.433757
20	Class	1269	0.383313
21	Json	1234	0.372741
22	TypeVariable	1096	0.331057
23	Lambda	936	0.282727
24	ResolvedDuplicateType	900	0.271853
25	GenericDeclaration	894	0.270041
26	JavaType	746	0.225336
27	Primitive	650	0.196338
28	Key	555	0.167643
29	Person	539	0.162810
30	Scalar	539	0.162810
31	ExternalType	489	0.147707
32	Maven	343	0.103606
33	Author	292	0.088201
34	Array	273	0.082462
35	Interface	272	0.082160
36	Committer	247	0.074609
37	Property	202	0.061016
38	Directory	183	0.055277
39	Enum	178	0.053767

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: 1003655

	relationshipType	nodesWithThatRelationshipType	nodesWithThatRelationshipTypePercent
0	CONTAINS_CHANGE	242541	24.165774
1	MODIFIES	242541	24.165774
2	UPDATES	156724	15.615326
3	CREATES	59224	5.900832
4	DELETES	36770	3.663610
5	INVOKES	35574	3.544445
6	COMMITTED	23934	2.384684
7	DEPENDS_ON	21873	2.179335
8	OF_TYPE	21347	2.126926
9	DECLARES	20688	2.061266
10	OF_RAW_TYPE	17077	1.701481
11	HAS_PARENT	14551	1.449801
12	HAS	14094	1.404267
13	RETURNS	12547	1.250131
14	RENAMES	10177	1.013994
15	READS	9076	0.904295
16	HAS_ACTUAL_TYPE_ARGUMENT	8276	0.824586
17	HAS_NEW_NAME	6196	0.617344
18	OF_GENERIC_TYPE	5902	0.588051
19	RESOLVES_TO	5225	0.520597
20	SIMILAR	3968	0.395355
21	CONTAINS	3805	0.379114
22	WRITES	3803	0.378915
23	RETURNS_GENERIC	3543	0.353010
24	ANNOTATED_BY	2809	0.279877
25	REQUIRES	2173	0.216509
26	HAS_FIRST_CHILD	2144	0.213619
27	HAS_LAST_CHILD	2144	0.213619
28	HAS_ELEMENT	2126	0.211826
29	HAS_UPPER_BOUND	1521	0.151546

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)

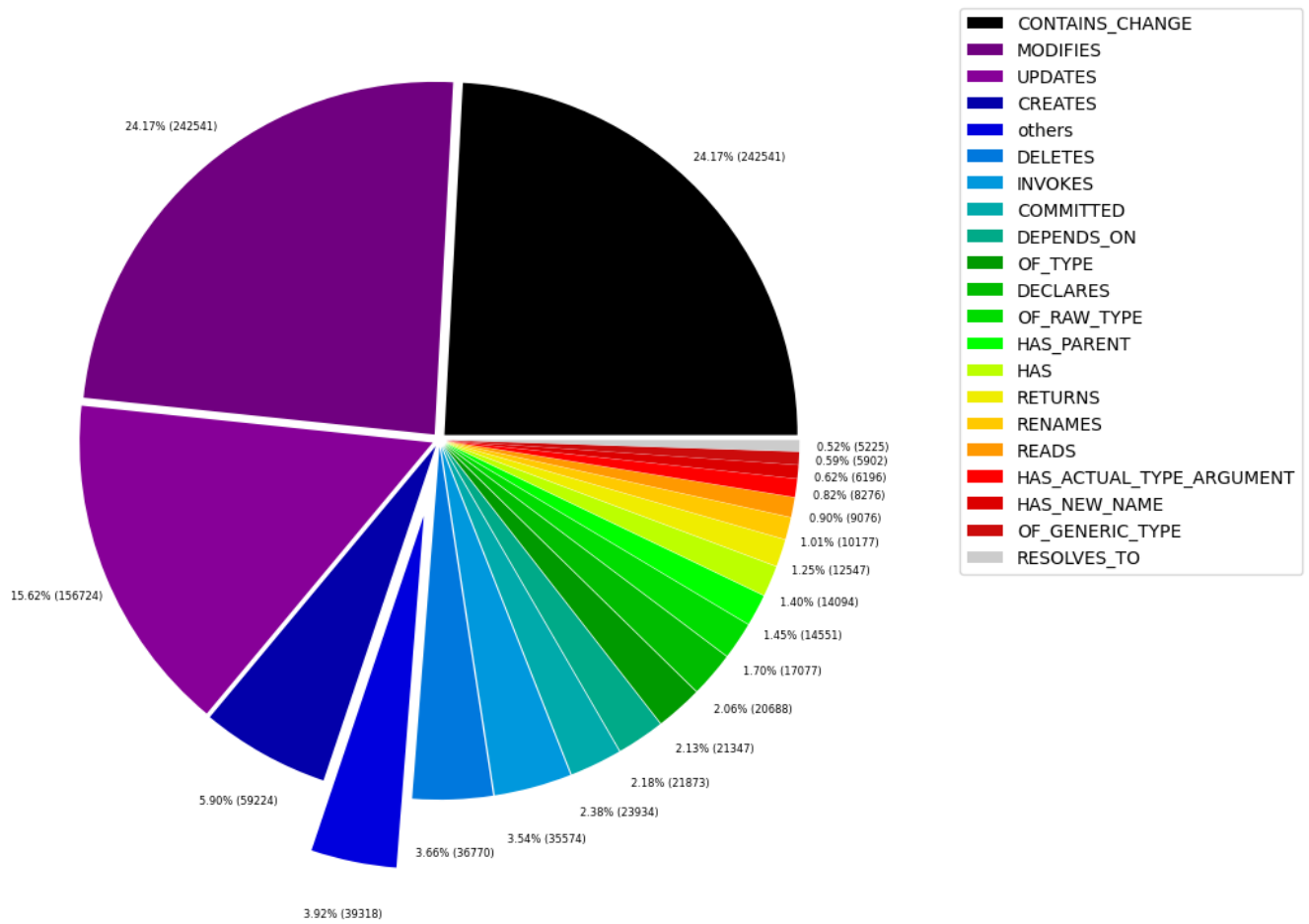


Table 2b - Lowest relationship count by type

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.

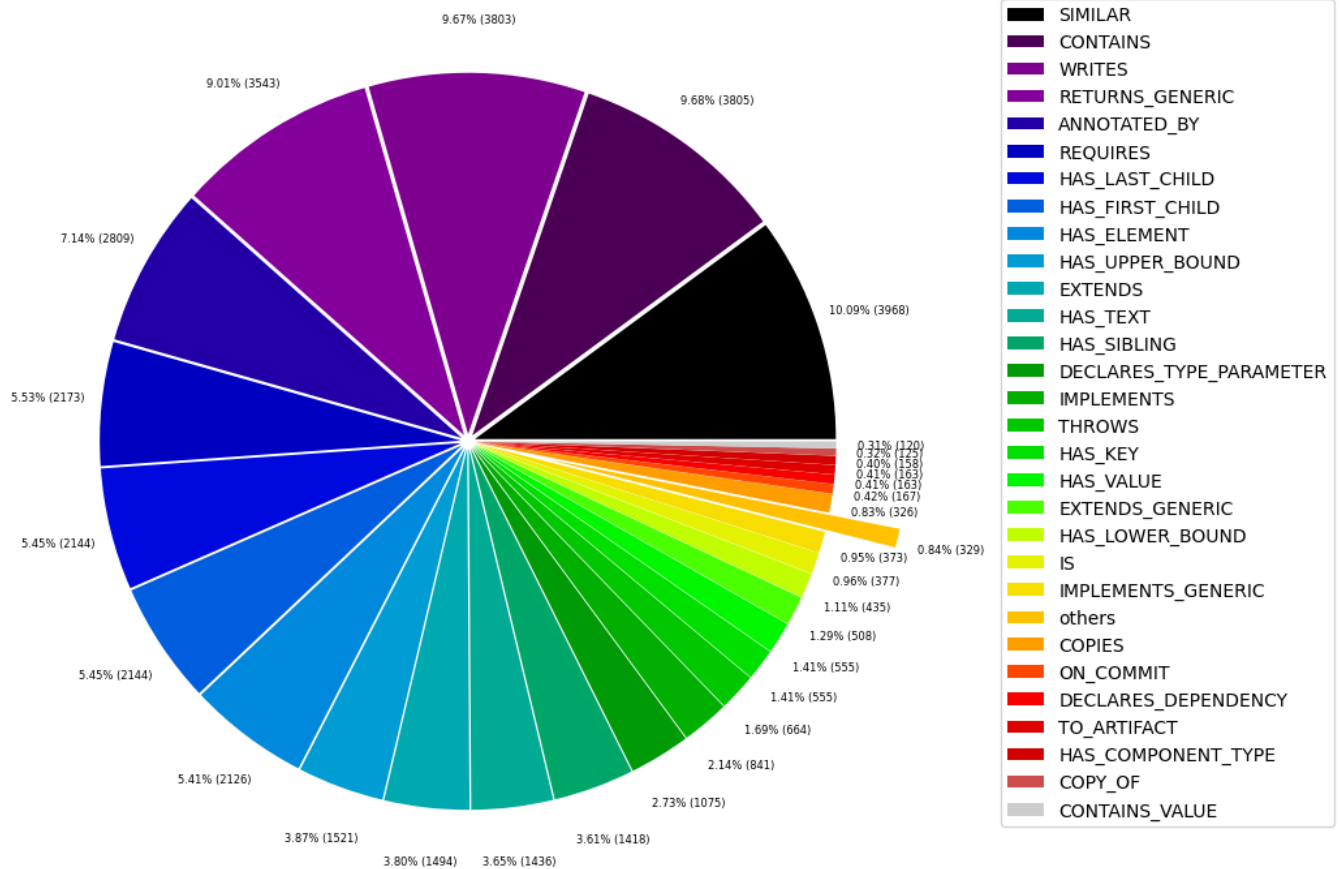
	relationshipType	nodesWithThatRelationshipType	nodesWithThatRelationshipTypePercent
0	HAS_PROPERTY	1	0.000100
1	THROWS_GENERIC	5	0.000498
2	EXCLUDES	5	0.000498
3	HAS_ROOT_ELEMENT	9	0.000897
4	DESCRIBES	9	0.000897
5	HAS_GOAL	16	0.001594
6	HAS_EXECUTION	16	0.001594
7	OF_NAMESPACE	18	0.001793
8	HAS_ATTRIBUTE	18	0.001793
9	INCLUDES_CONCEPT	19	0.001893
10	USES_PLUGIN	21	0.002092
11	REQUIRES_TYPE_PARAMETER	21	0.002092
12	IS_ARTIFACT	21	0.002092
13	HAS_CONFIGURATION	21	0.002092
14	REQUIRES_CONCEPT	28	0.002790
15	HAS_HEAD	29	0.002889
16	DECLARES_NAMESPACE	36	0.003587
17	HAS_DEFAULT	36	0.003587
18	CONTAINS_VALUE	120	0.011956
19	COPY_OF	125	0.012454
20	HAS_COMPONENT_TYPE	158	0.015742
21	TO_ARTIFACT	163	0.016241
22	DECLARES_DEPENDENCY	163	0.016241
23	ON_COMMIT	167	0.016639
24	COPIES	326	0.032481
25	IMPLEMENTS_GENERIC	373	0.037164
26	IS	377	0.037563
27	HAS_LOWER_BOUND	435	0.043342
28	EXTENDS_GENERIC	508	0.050615
29	HAS_VALUE	555	0.055298

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]	242541	11967	
1	[Git, Change]	MODIFIES	[File, Git]	242541	242541	
2	[Git, Change]	UPDATES	[File, Git]	156724	242541	
3	[Git, Change]	CREATES	[File, Git]	59224	242541	
4	[Git, Change]	DELETES	[File, Git]	36770	242541	
5	[Java, ByteCode, Method, Member]	INVOKES	[Java, ByteCode, Method, Member]	21521	13080	
6	[Git, Commit]	HAS_PARENT	[Git, Commit]	14542	11967	
7	[Author, Git, Person]	COMMITTED	[Git, Commit]	11967	292	
8	[Committer, Git, Person]	COMMITTED	[Git, Commit]	11967	247	
9	[Git, Change]	RENAMES	[File, Git]	10177	242541	
10	[Java, ByteCode, Method, Member]	HAS	[Java, ByteCode, Parameter]	8297	13080	
11	[Java, ByteCode, Method, Member]	READS	[Java, ByteCode, Member, Field]	8100	13080	
12	[Java, ByteCode, Parameter]	OF_TYPE	[Type, File, Java, ByteCode, JavaType]	6360	13000	
13	[File, Git]	HAS_NEW_NAME	[File, Git]	6196	10671	
14	[Java, ByteCode, Bound]	OF_RAW_TYPE	[Type, File, Java, ByteCode, JavaType]	3569	7112	
15	[Java, ByteCode, Bound, ParameterizedType]	OF_RAW_TYPE	[Type, File, Java, ByteCode, JavaType]	3043	7166	
16	[Java, ByteCode, Bound, ParameterizedType]	HAS_ACTUAL_TYPE_ARGUMENT	[Java, ByteCode, Bound, WildcardType]	2906	7166	
17	[Java, ByteCode, Parameter]	OF_GENERIC_TYPE	[Java, ByteCode, Bound, ParameterizedType]	2655	13000	
18	[Java, ByteCode, Bound, ParameterizedType]	HAS_ACTUAL_TYPE_ARGUMENT	[Java, ByteCode, Bound, TypeVariable]	2454	7166	
19	[Java, ByteCode, Constructor, Method, Member]	WRITES	[Java, ByteCode, Member, Field]	2426	2040	
20	[Java, Value, ByteCode, Annotation]	OF_TYPE	[Type, File, Java, ByteCode, ExternalType, Ext...	2340	2821	
21	[Xml, Element]	HAS_ELEMENT	[Xml, Element]	2126	2144	
22	[Java, ByteCode, Constructor, Method, Member]	INVOKES	[Java, ByteCode, Constructor, Method, Member]	2111	2040	
23	[Java, ByteCode, Method, Member]	RETURNS	[Type, File, Java, ByteCode, JavaType]	2088	13080	
24	[Java, ByteCode, Constructor, Method, Member]	HAS	[Java, ByteCode, Parameter]	2023	2040	
25	[Java, ByteCode, Parameter]	OF_GENERIC_TYPE	[Java, ByteCode, Bound]	2023	13000	
26	[Java, ByteCode, Method, Member]	INVOKES	[Java, ByteCode, Constructor, Method, Member]	2007	13080	
27	[Java, ByteCode, Method, Member, Lambda]	INVOKES	[Java, ByteCode, Method, Member]	1883	936	
28	[Java, ByteCode, Bound, ParameterizedType]	HAS_ACTUAL_TYPE_ARGUMENT	[Java, ByteCode, Bound]	1802	7166	
29	[Java, ByteCode, Constructor, Method, Member]	INVOKES	[Java, ByteCode, Method, Member]	1796	2040	

Graph Density

```
total_number_of_nodes (vertices): 331061
total_number_of_relationships (edges): 1003655
-> total directed graph density: 9.157348011964833e-06
-> total directed graph density in percent: 0.0009157348011964833
```