

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]	245365	73.478635
1	[Java, ByteCode, Method, Member]	13202	3.953559
2	[Java, ByteCode, Parameter]	13000	3.893066
3	[Git, Commit]	12005	3.595097
4	[File, Git]	10675	3.196806
5	[Java, ByteCode, Bound, ParameterizedType]	7166	2.145978
6	[Java, ByteCode, Bound]	7112	2.129807
7	[Java, ByteCode, Member, Field]	3495	1.046636
8	[Java, ByteCode, Bound, WildcardType]	2906	0.870250
9	[Java, Value, ByteCode, Annotation]	2821	0.844795
10	[Xml, Element]	2144	0.642056
11	[Java, ByteCode, Constructor, Method, Member]	2041	0.611211
12	[Xml, Text]	1436	0.430034
13	[Java, ByteCode, Bound, TypeVariable]	1096	0.328215
14	[Java, ByteCode, Method, Member, Lambda]	936	0.280301
15	[Type, File, Java, ByteCode, ResolvedDuplicate...	900	0.269520
16	[Type, File, Java, ByteCode, Class]	861	0.257841
17	[Type, File, Java, ByteCode, JavaType]	746	0.223402
18	[Java, Value, ByteCode, Primitive]	650	0.194653
19	[Java, ByteCode, Method, Member, GenericDeclar...	569	0.170397
20	[Json, Key]	555	0.166204
21	[Value, Json, Scalar]	539	0.161413
22	[Type, File, Java, ByteCode, ExternalType]	396	0.118589
23	[Author, Git, Person]	292	0.087444
24	[Value, Array]	267	0.079958
25	[Committer, Git, Person]	247	0.073968
26	[Type, File, Java, ByteCode, Class, GenericDec...	236	0.070674
27	[Value, Property]	202	0.060492
28	[Type, File, Java, ByteCode, Interface]	187	0.056000
29	[Java, Value, ByteCode, Class]	172	0.051508

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)

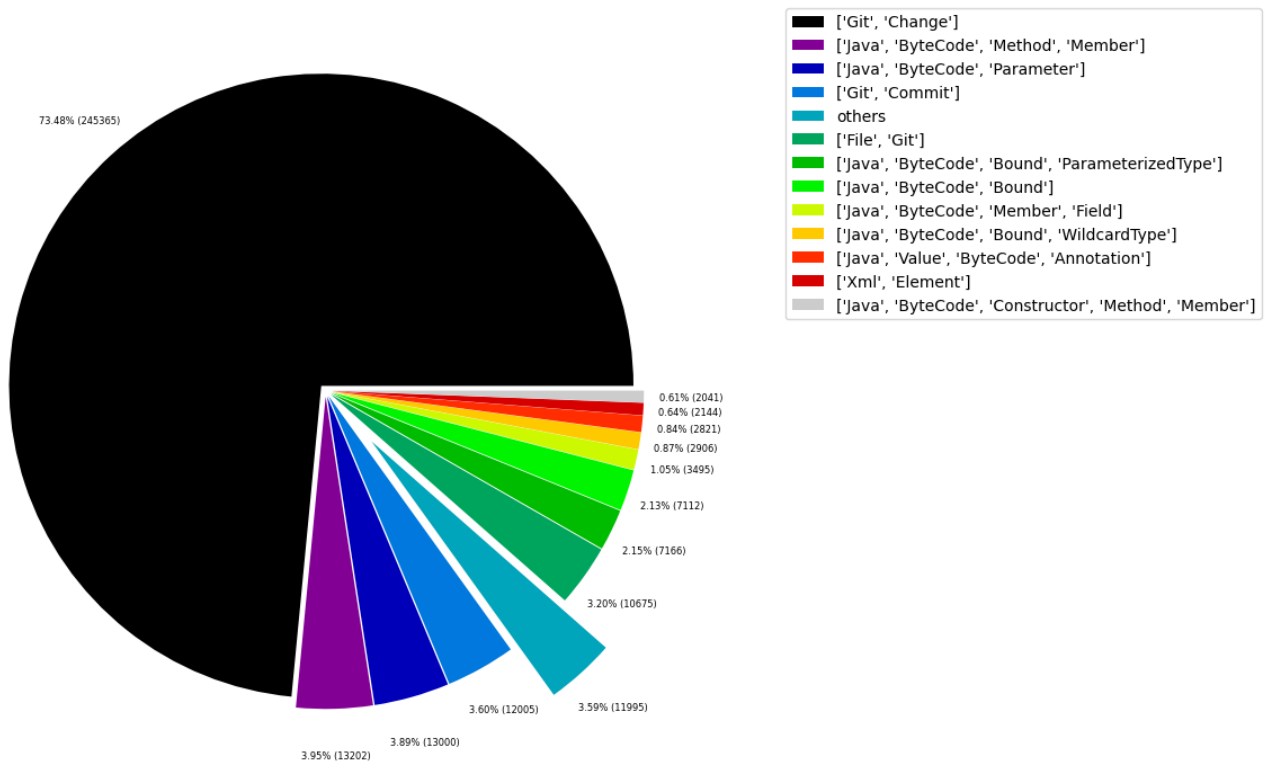


Table 1b - Lowest node count by label combination

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	[File, Json]	2	0.000599
2	[File]	3	0.000898
3	[Java, ByteCode, Constructor, Method, Member, ...]	4	0.001198
4	[Maven, Exclusion]	5	0.001497
5	[Value, Array, Json]	6	0.001797
6	[File, Maven, Xml, Pom, Document]	9	0.002695
7	[Type, File, Java, ByteCode, Void]	9	0.002695
8	[Java, ManifestSection]	9	0.002695
9	[File, Java, Manifest]	9	0.002695
10	[Artifact, File, Jar, Archive, Zip, Java]	9	0.002695
11	[File, Java, ServiceLoader]	10	0.002995
12	[File, Java, Properties]	12	0.003594
13	[Maven, ExecutionGoal]	16	0.004791
14	[Maven, PluginExecution]	16	0.004791
15	[Xml, Attribute]	18	0.005390
16	[jQAssistant, Rule, Concept]	19	0.005690
17	[Maven, Plugin]	21	0.006289
18	[Maven, Configuration]	21	0.006289
19	[Type, File, Java, ByteCode, Enum]	28	0.008385
20	[Type, File, Java, ByteCode, PrimitiveType]	29	0.008685
21	[Git, Branch]	30	0.008984
22	[Xml, Namespace]	36	0.010781
23	[Type, File, Java, ByteCode, Annotation]	43	0.012877
24	[File, Directory]	44	0.013177
25	[Type, File, Java, ByteCode, GenericDeclaratio...	85	0.025455
26	[Artifact, Maven]	92	0.027551
27	[Type, File, Java, ByteCode, ExternalType, Ext...	93	0.027850
28	[Value, ManifestEntry]	120	0.035936
29	[Value, Json, Object]	132	0.039530

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)

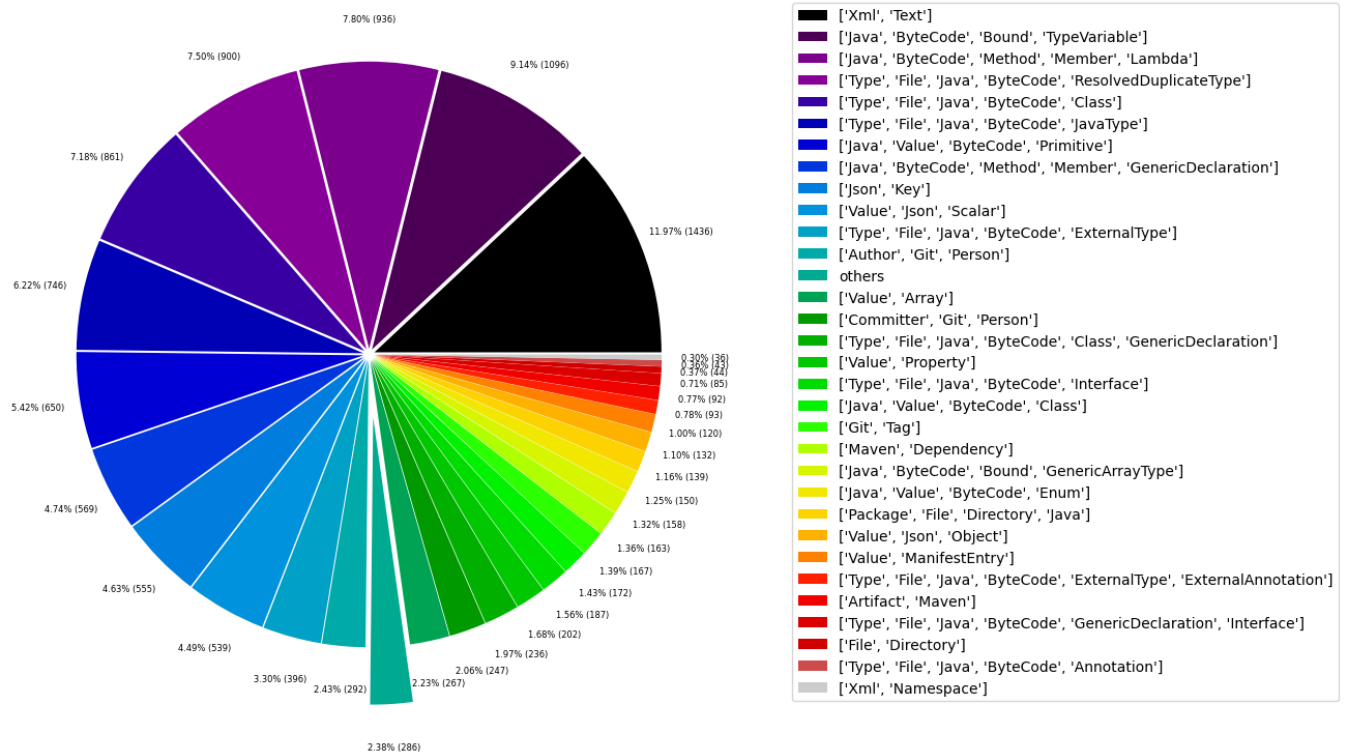


Table 1c - Highest node count by single label

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.

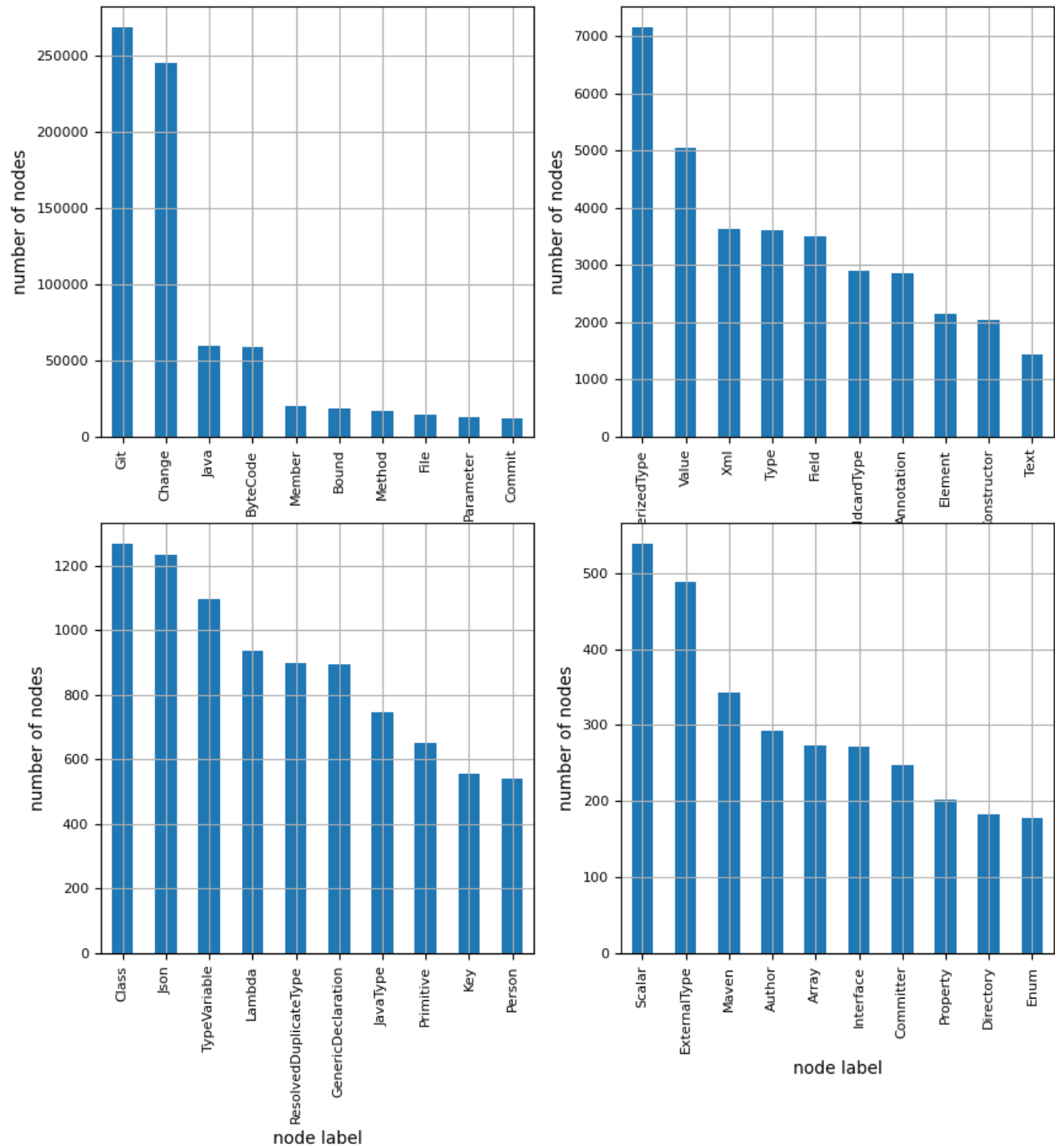
	nodeLabel	nodesWithThatLabel	nodesWithThatLabelPercent
0	Git	268781	80.490946
1	Change	245365	73.478635
2	Java	59279	17.752084
3	ByteCode	59091	17.695784
4	Member	20247	6.063301
5	Bound	18438	5.521566
6	Method	16752	5.016665
7	File	14525	4.349753
8	Parameter	13000	3.893066
9	Commit	12005	3.595097
10	ParameterizedType	7166	2.145978
11	Value	5059	1.515002
12	Xml	3643	1.090957
13	Type	3613	1.081973
14	Field	3495	1.046636
15	WildcardType	2906	0.870250
16	Annotation	2864	0.857672
17	Element	2144	0.642056
18	Constructor	2045	0.612409
19	Text	1436	0.430034
20	Class	1269	0.380023
21	Json	1234	0.369542
22	TypeVariable	1096	0.328215
23	Lambda	936	0.280301
24	ResolvedDuplicateType	900	0.269520
25	GenericDeclaration	894	0.267723
26	JavaType	746	0.223402
27	Primitive	650	0.194653
28	Key	555	0.166204
29	Person	539	0.161413
30	Scalar	539	0.161413
31	ExternalType	489	0.146439
32	Maven	343	0.102717
33	Author	292	0.087444
34	Array	273	0.081754
35	Interface	272	0.081455
36	Committer	247	0.073968
37	Property	202	0.060492
38	Directory	183	0.054802
39	Enum	178	0.053305

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: 1012452

	relationshipType	nodesWithThatRelationshipType	nodesWithThatRelationshipTypePercent
0	CONTAINS_CHANGE	245365	24.234729
1	MODIFIES	245365	24.234729
2	UPDATES	158745	15.679262
3	CREATES	59716	5.898156
4	DELETES	37193	3.673557
5	INVOKES	35547	3.510981
6	COMMITTED	24010	2.371470
7	DEPENDS_ON	21873	2.160399
8	OF_TYPE	21347	2.108446
9	DECLARES	20688	2.043356
10	OF_RAW_TYPE	17077	1.686697
11	HAS_PARENT	14598	1.441846
12	HAS	14094	1.392066
13	RETURNS	12547	1.239269
14	RENAMES	10289	1.016246
15	READS	9078	0.896635
16	HAS_ACTUAL_TYPE_ARGUMENT	8276	0.817421
17	HAS_NEW_NAME	6198	0.612177
18	OF_GENERIC_TYPE	5902	0.582941
19	RESOLVES_TO	5221	0.515679
20	SIMILAR	3968	0.391920
21	CONTAINS	3805	0.375820
22	WRITES	3803	0.375623
23	RETURNS_GENERIC	3543	0.349943
24	ANNOTATED_BY	2809	0.277445
25	REQUIRES	2173	0.214627
26	HAS_FIRST_CHILD	2144	0.211763
27	HAS_LAST_CHILD	2144	0.211763
28	HAS_ELEMENT	2126	0.209985
29	HAS_UPPER_BOUND	1521	0.150229

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)

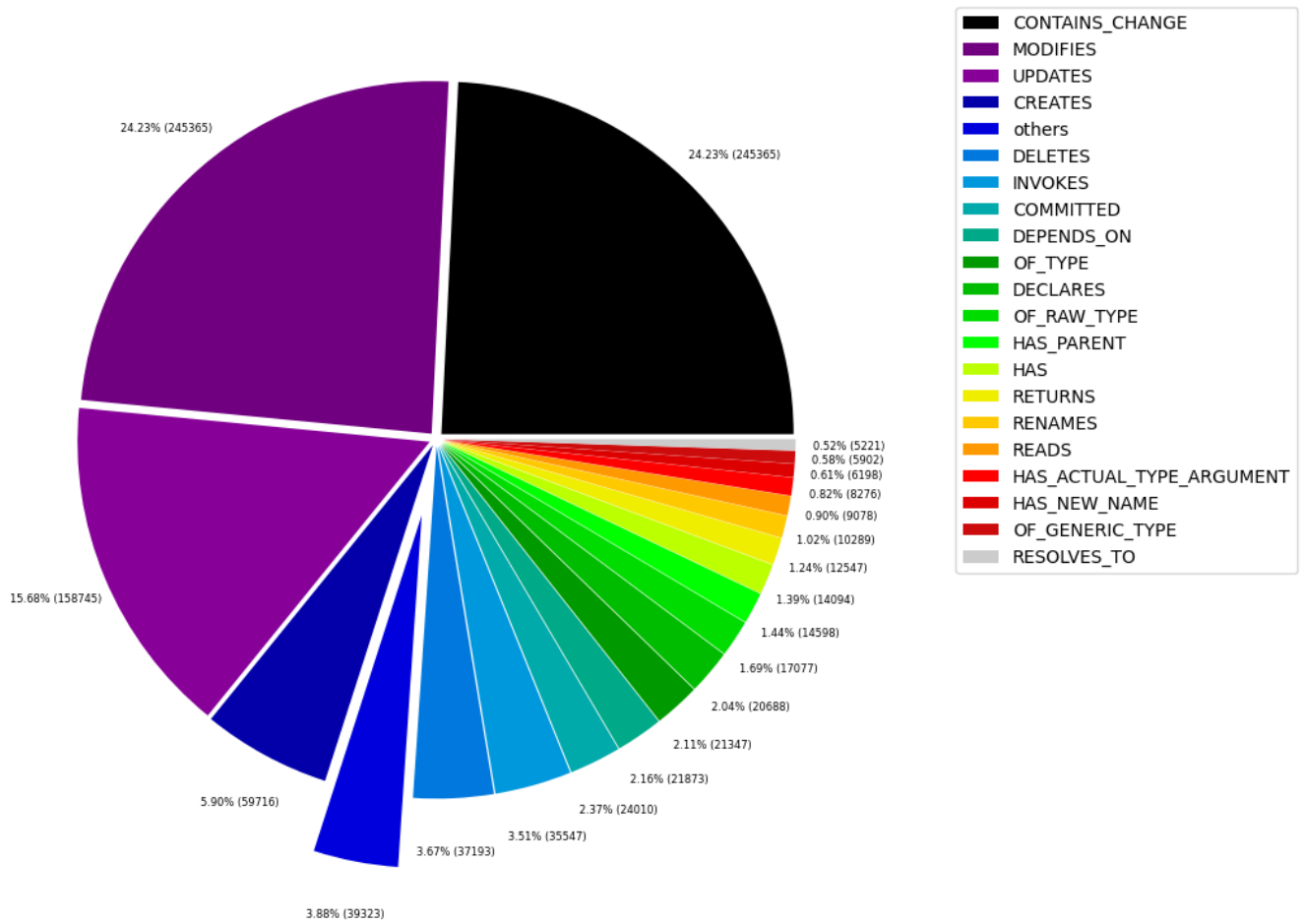


Table 2b - Lowest relationship count by type

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.

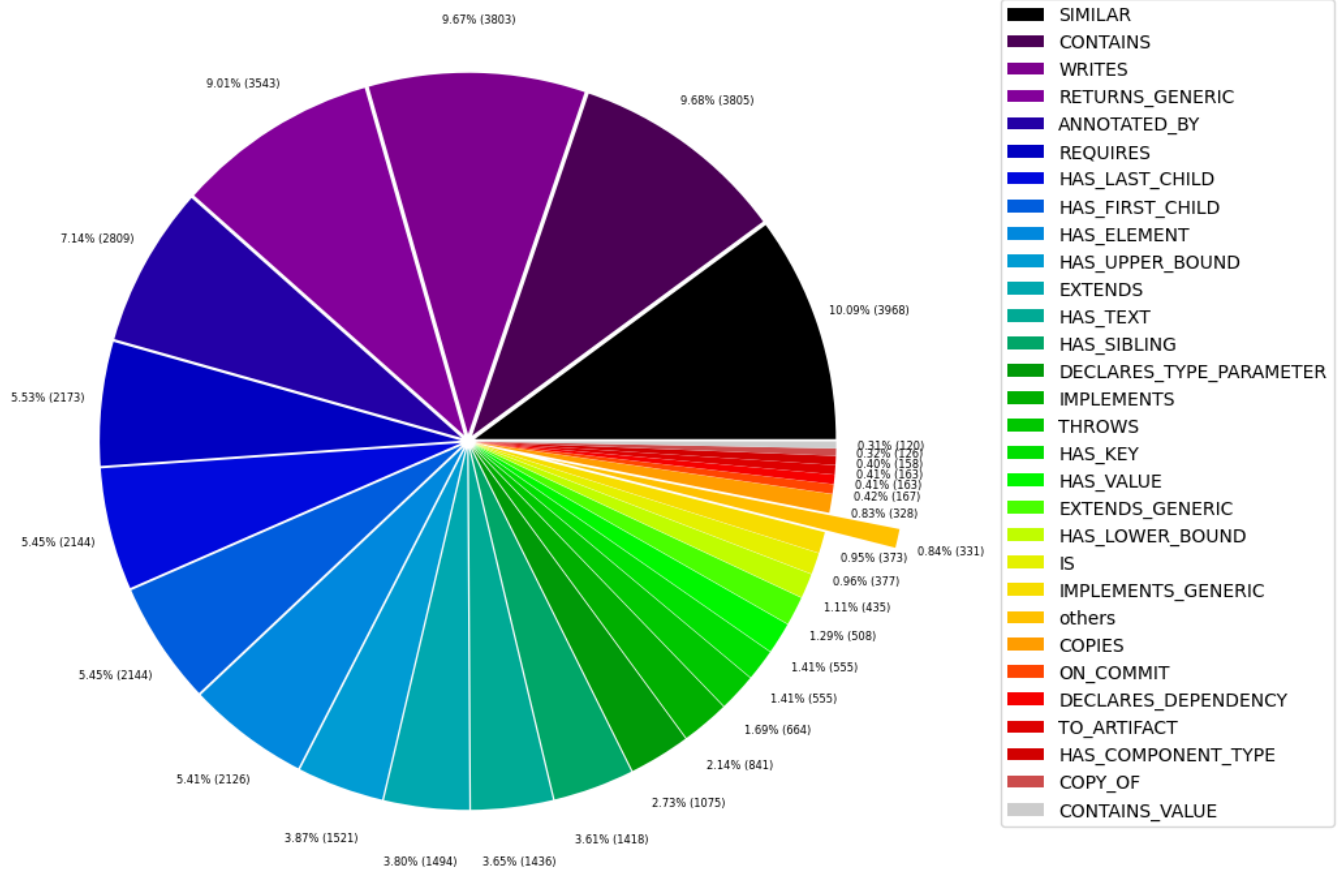
	relationshipType	nodesWithThatRelationshipType	nodesWithThatRelationshipTypePercent
0	HAS_PROPERTY	1	0.000099
1	THROWS_GENERIC	5	0.000494
2	EXCLUDES	5	0.000494
3	DESCRIBES	9	0.000889
4	HAS_ROOT_ELEMENT	10	0.000988
5	HAS_GOAL	16	0.001580
6	HAS_EXECUTION	16	0.001580
7	OF_NAMESPACE	18	0.001778
8	HAS_ATTRIBUTE	18	0.001778
9	INCLUDES_CONCEPT	19	0.001877
10	USES_PLUGIN	21	0.002074
11	REQUIRES_TYPE_PARAMETER	21	0.002074
12	IS_ARTIFACT	21	0.002074
13	HAS_CONFIGURATION	21	0.002074
14	REQUIRES_CONCEPT	28	0.002766
15	HAS_HEAD	30	0.002963
16	DECLARES_NAMESPACE	36	0.003556
17	HAS_DEFAULT	36	0.003556
18	CONTAINS_VALUE	120	0.011852
19	COPY_OF	126	0.012445
20	HAS_COMPONENT_TYPE	158	0.015606
21	TO_ARTIFACT	163	0.016100
22	DECLARES_DEPENDENCY	163	0.016100
23	ON_COMMIT	167	0.016495
24	COPIES	328	0.032397
25	IMPLEMENTS_GENERIC	373	0.036841
26	IS	377	0.037236
27	HAS_LOWER_BOUND	435	0.042965
28	EXTENDS_GENERIC	508	0.050175
29	HAS_VALUE	555	0.054817

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]	245365		12005
1	[Git, Change]	MODIFIES	[File, Git]	245365		245365
2	[Git, Change]	UPDATES	[File, Git]	158745		245365
3	[Git, Change]	CREATES	[File, Git]	59716		245365
4	[Git, Change]	DELETES	[File, Git]	37193		245365
5	[Java, ByteCode, Method, Member]	INVOKES	[Java, ByteCode, Method, Member]	21504		13078
6	[Git, Commit]	HAS_PARENT	[Git, Commit]	14589		12005
7	[Author, Git, Person]	COMMITTED	[Git, Commit]	12005		292
8	[Committer, Git, Person]	COMMITTED	[Git, Commit]	12005		247
9	[Git, Change]	RENAMES	[File, Git]	10289		245365
10	[Java, ByteCode, Method, Member]	HAS	[Java, ByteCode, Parameter]	8297		13078
11	[Java, ByteCode, Method, Member]	READS	[Java, ByteCode, Member, Field]	8100		13078
12	[Java, ByteCode, Parameter]	OF_TYPE	[Type, File, Java, ByteCode, JavaType]	6360		13000
13	[File, Git]	HAS_NEW_NAME	[File, Git]	6198		10675
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		2041
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		2041
23	[Java, ByteCode, Method, Member]	RETURNS	[Type, File, Java, ByteCode, JavaType]	2088		13078
24	[Java, ByteCode, Constructor, Method, Member]	HAS	[Java, ByteCode, Parameter]	2023		2041
25	[Java, ByteCode, Parameter]	OF_GENERIC_TYPE	[Java, ByteCode, Bound]	2023		13000
26	[Java, ByteCode, Method, Member]	INVOKES	[Java, ByteCode, Constructor, Method, Member]	2007		13078
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]	1790		2041

Graph Density

```
total_number_of_nodes (vertices): 333927
total_number_of_relationships (edges): 1012452
-> total directed graph density: 9.079724508455345e-06
-> total directed graph density in percent: 0.0009079724508455345
```