

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]	240725	73.159576
1	[Java, ByteCode, Member, Method]	13188	4.008011
2	[Java, ByteCode, Parameter]	13000	3.950875
3	[Git, Commit]	11850	3.601375
4	[File, Git]	10613	3.225434
5	[Java, ByteCode, Bound, ParameterizedType]	7166	2.177844
6	[Java, ByteCode, Bound]	7112	2.161433
7	[Java, ByteCode, Member, Field]	3489	1.060354
8	[Java, ByteCode, Bound, WildcardType]	2906	0.883173
9	[Java, Value, ByteCode, Annotation]	2821	0.857340
10	[Xml, Element]	2144	0.651591
11	[Java, ByteCode, Member, Constructor, Method]	2038	0.619376
12	[Xml, Text]	1436	0.436420
13	[Java, ByteCode, Bound, TypeVariable]	1096	0.333089
14	[Java, ByteCode, Member, Method, Lambda]	936	0.284463
15	[Type, File, Java, ByteCode, ResolvedDuplicate...	900	0.273522
16	[Type, File, Java, ByteCode, Class]	861	0.261670
17	[Type, File, Java, ByteCode, JavaType]	746	0.226719
18	[Java, Value, ByteCode, Primitive]	650	0.197544
19	[Java, ByteCode, GenericDeclaration, Member, M...	569	0.172927
20	[Json, Key]	555	0.168672
21	[Value, Json, Scalar]	539	0.163809
22	[Type, File, Java, ByteCode, ExternalType]	396	0.120350
23	[Author, Git, Person]	290	0.088135
24	[Value, Array]	267	0.081145
25	[Committer, Git, Person]	244	0.074155
26	[Type, File, Java, ByteCode, Class, GenericDec...	236	0.071724
27	[Value, Property]	202	0.061391
28	[Type, File, Java, ByteCode, Interface]	187	0.056832
29	[Java, Value, ByteCode, Class]	172	0.052273

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)

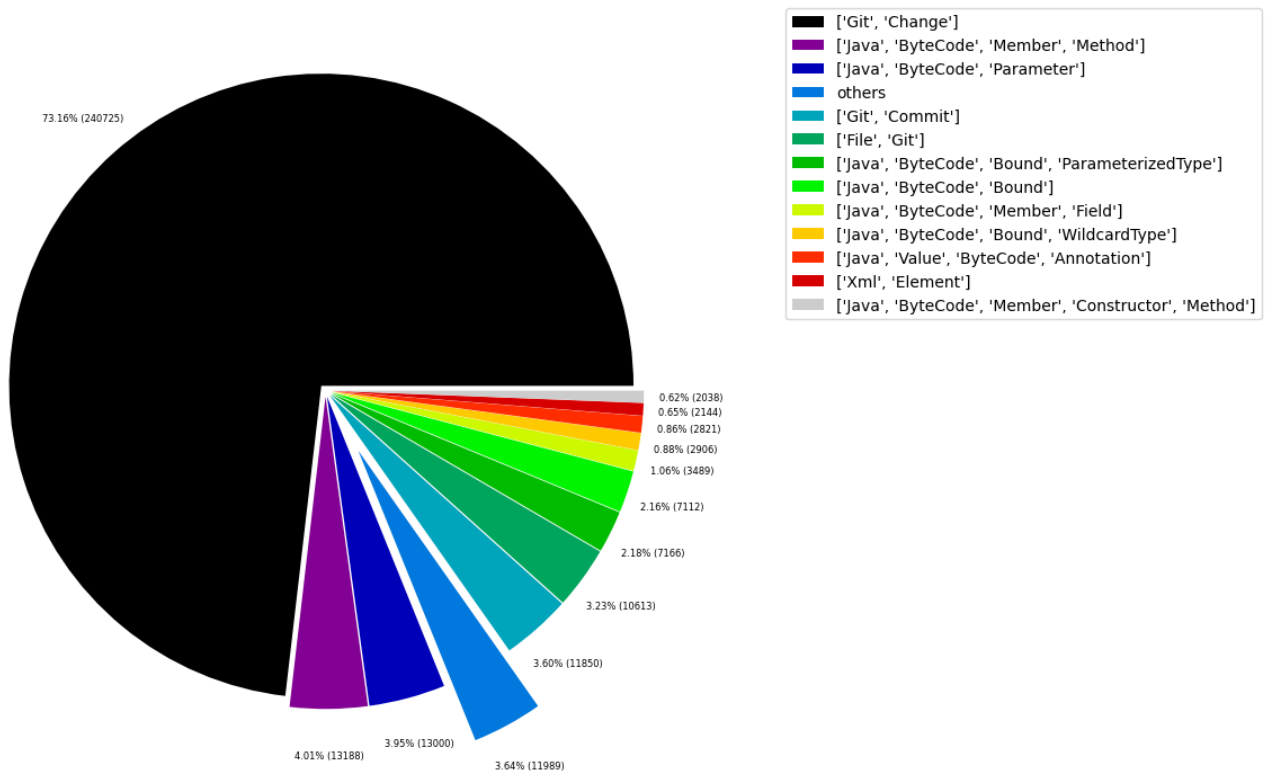


Table 1b - Lowest node count by label combination

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	0.000304
1	[File, TS, Scan]	1	0.000304
2	[File, Json]	2	0.000608
3	[File]	3	0.000912
4	[Java, ByteCode, GenericDeclaration, Member, C...	4	0.001216
5	[Maven, Exclusion]	5	0.001520
6	[Value, Array, Json]	6	0.001823
7	[Type, File, Java, ByteCode, Void]	9	0.002735
8	[File, Maven, Xml, Pom, Document]	9	0.002735
9	[Java, ManifestSection]	9	0.002735
10	[File, Java, Manifest]	9	0.002735
11	[Artifact, File, Jar, Archive, Zip, Java]	9	0.002735
12	[File, Java, ServiceLoader]	10	0.003039
13	[File, Java, Properties]	12	0.003647
14	[Maven, ExecutionGoal]	16	0.004863
15	[Maven, PluginExecution]	16	0.004863
16	[Xml, Attribute]	18	0.005470
17	[JQAssistant, Rule, Concept]	19	0.005774
18	[Maven, Plugin]	21	0.006382
19	[Maven, Configuration]	21	0.006382
20	[Git, Branch]	28	0.008510
21	[Type, File, Java, ByteCode, Enum]	28	0.008510
22	[Type, File, Java, ByteCode, PrimitiveType]	29	0.008813
23	[Xml, Namespace]	36	0.010941
24	[Type, File, Java, ByteCode, Annotation]	43	0.013068
25	[File, Directory]	44	0.013372
26	[Type, File, Java, ByteCode, GenericDeclaratio...	85	0.025833
27	[Artifact, Maven]	92	0.027960
28	[Type, File, Java, ByteCode, ExternalAnnotatio...	93	0.028264
29	[Value, ManifestEntry]	120	0.036470

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)

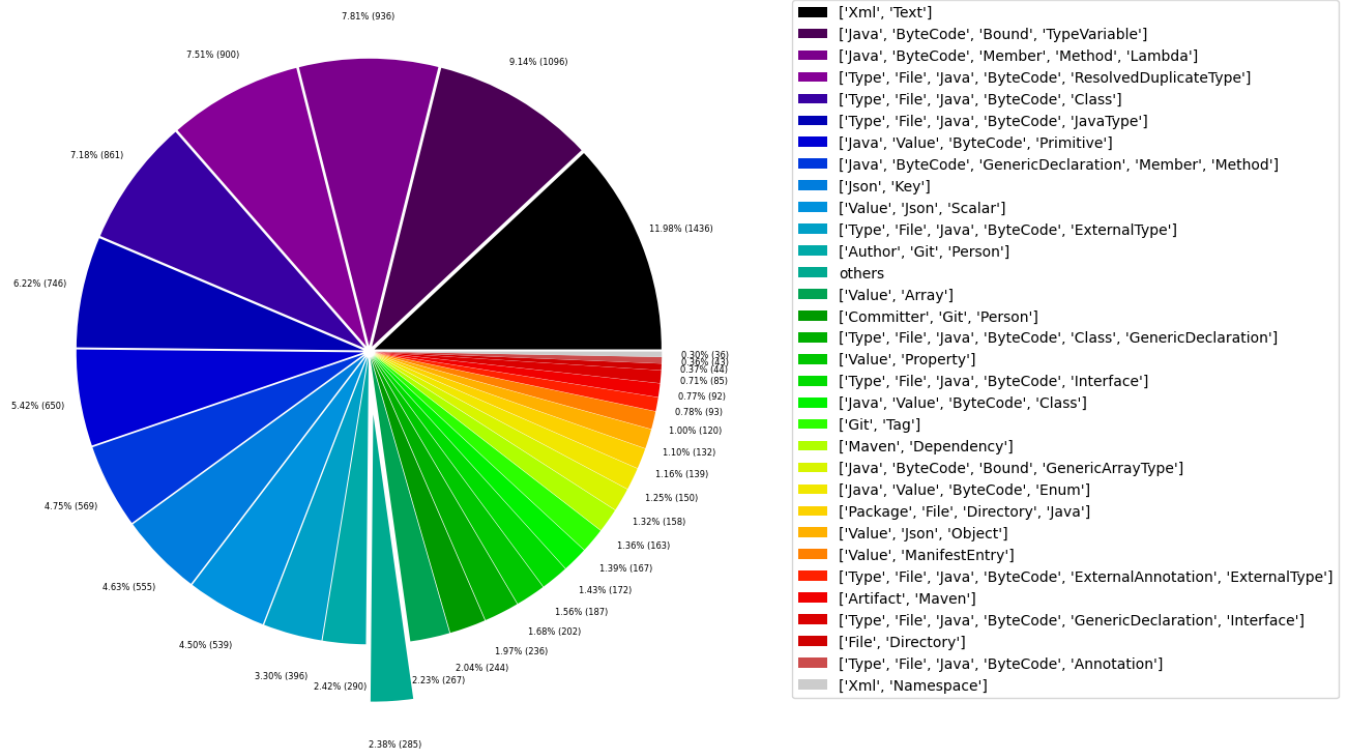


Table 1c - Highest node count by single label

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.

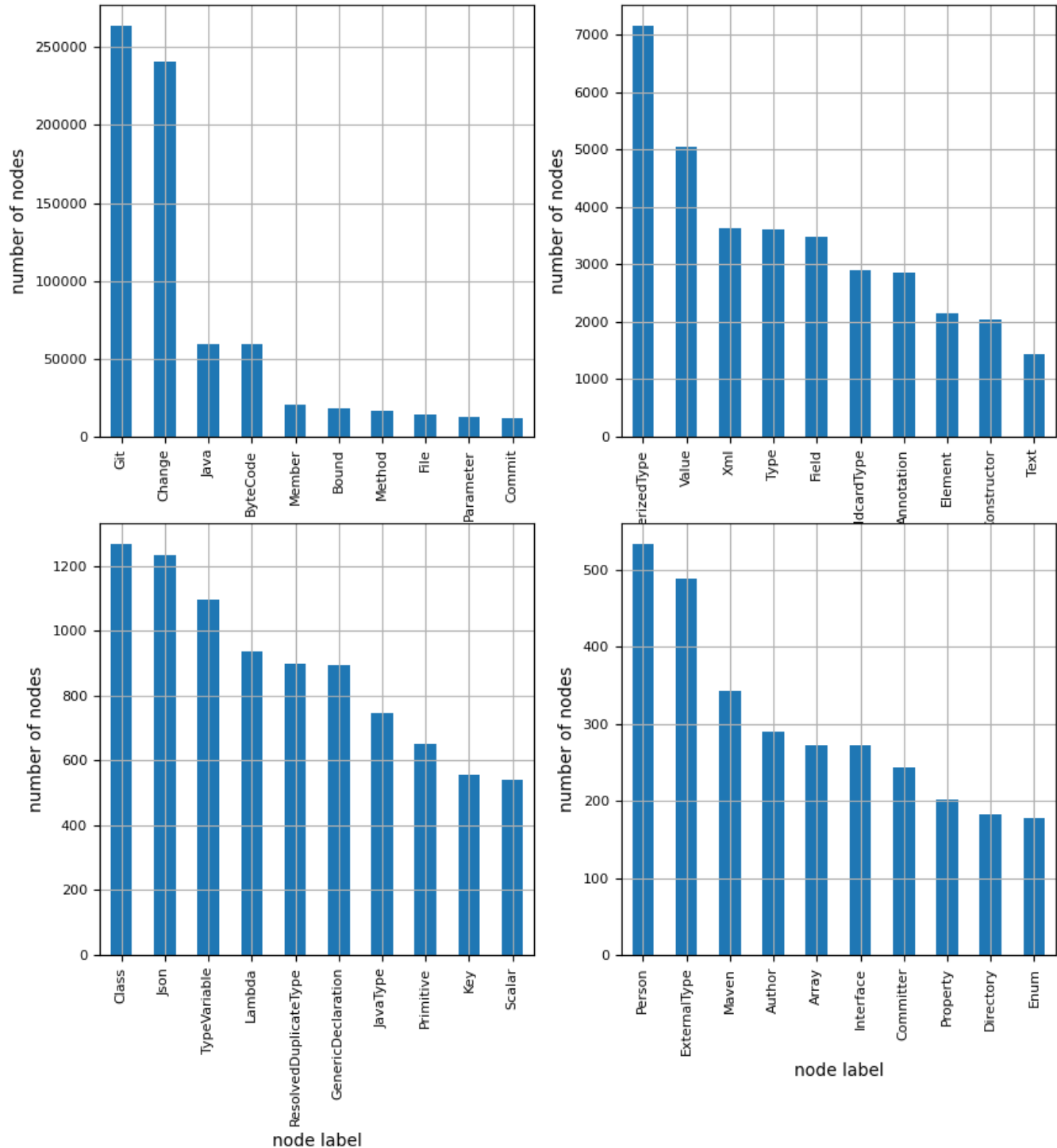
	nodeLabel	nodesWithThatLabel	nodesWithThatLabelPercent
0	Git	263917	80.207938
1	Change	240725	73.159576
2	Java	59256	18.008698
3	ByteCode	59068	17.951562
4	Member	20224	6.146347
5	Bound	18438	5.603557
6	Method	16735	5.085992
7	File	14464	4.395805
8	Parameter	13000	3.950875
9	Commit	11850	3.601375
10	ParameterizedType	7166	2.177844
11	Value	5059	1.537498
12	Xml	3643	1.107157
13	Type	3613	1.098039
14	Field	3489	1.060354
15	WildcardType	2906	0.883173
16	Annotation	2864	0.870408
17	Element	2144	0.651591
18	Constructor	2042	0.620591
19	Text	1436	0.436420
20	Class	1269	0.385666
21	Json	1234	0.375029
22	TypeVariable	1096	0.333089
23	Lambda	936	0.284463
24	ResolvedDuplicateType	900	0.273522
25	GenericDeclaration	894	0.271699
26	JavaType	746	0.226719
27	Primitive	650	0.197544
28	Key	555	0.168672
29	Scalar	539	0.163809
30	Person	534	0.162290
31	ExternalType	489	0.148614
32	Maven	343	0.104242
33	Author	290	0.088135
34	Array	273	0.082968
35	Interface	272	0.082664
36	Committer	244	0.074155
37	Property	202	0.061391
38	Directory	183	0.055616
39	Enum	178	0.054097

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: 997698

	relationshipType	nodesWithThatRelationshipType	nodesWithThatRelationshipTypePercent
0	CONTAINS_CHANGE	240725	24.128043
1	MODIFIES	240725	24.128043
2	UPDATES	155355	15.571345
3	CREATES	58825	5.896073
4	DELETES	36675	3.675962
5	INVOKES	35572	3.565408
6	COMMITTED	23700	2.375468
7	DEPENDS_ON	21873	2.192347
8	OF_TYPE	21347	2.139625
9	DECLARES	20665	2.071268
10	OF_RAW_TYPE	17077	1.711640
11	HAS_PARENT	14409	1.444225
12	HAS	14094	1.412652
13	RETURNS	12547	1.257595
14	RENAMES	10130	1.015337
15	READS	9078	0.909895
16	HAS_ACTUAL_TYPE_ARGUMENT	8276	0.829510
17	HAS_NEW_NAME	6177	0.619125
18	OF_GENERIC_TYPE	5902	0.591562
19	RESOLVES_TO	5228	0.524006
20	SIMILAR	3968	0.397716
21	CONTAINS	3805	0.381378
22	WRITES	3803	0.381177
23	RETURNS_GENERIC	3543	0.355117
24	ANNOTATED_BY	2809	0.281548
25	REQUIRES	2173	0.217801
26	HAS_FIRST_CHILD	2144	0.214895
27	HAS_LAST_CHILD	2144	0.214895
28	HAS_ELEMENT	2126	0.213091
29	HAS_UPPER_BOUND	1521	0.152451

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)

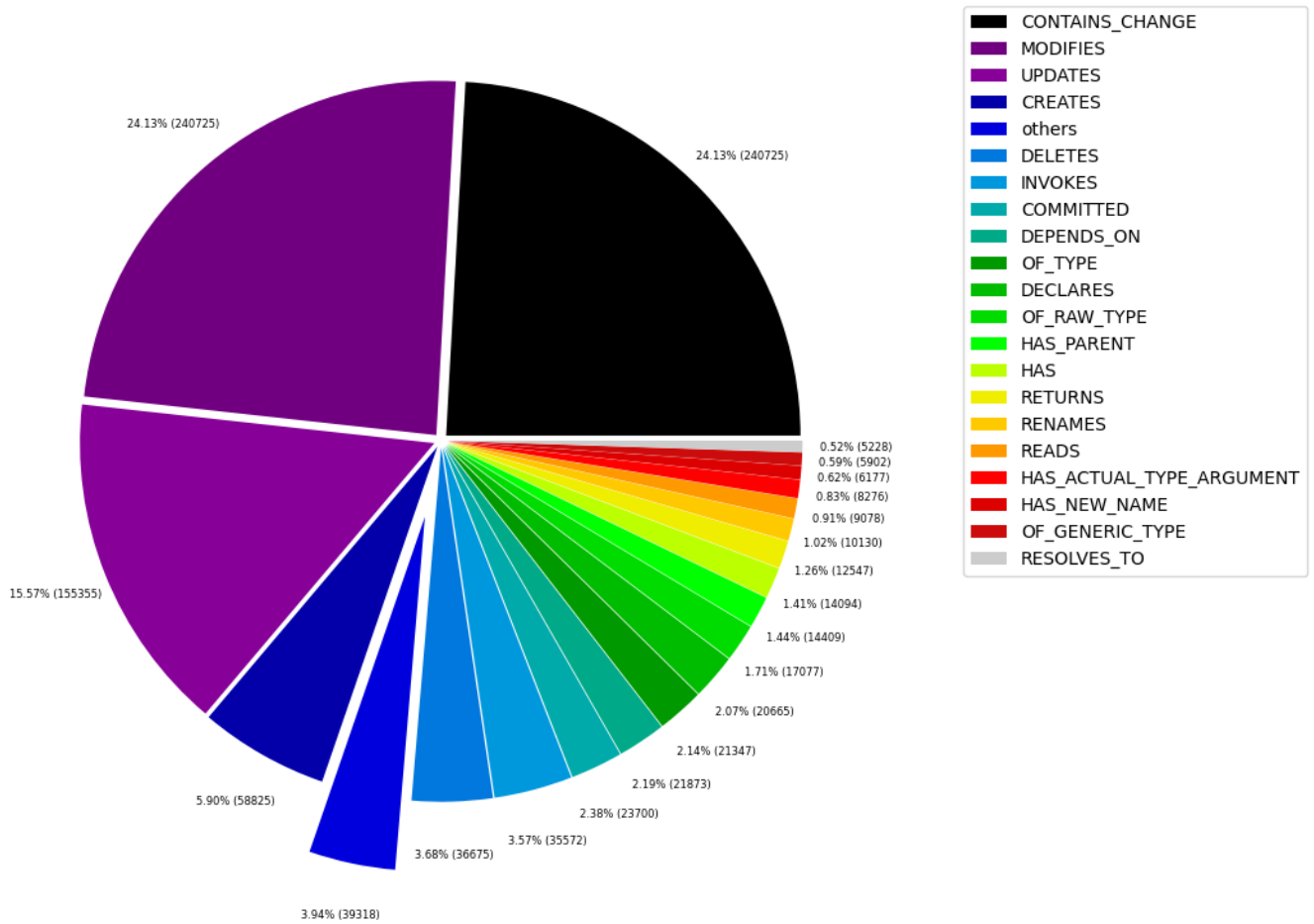


Table 2b - Lowest relationship count by type

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.

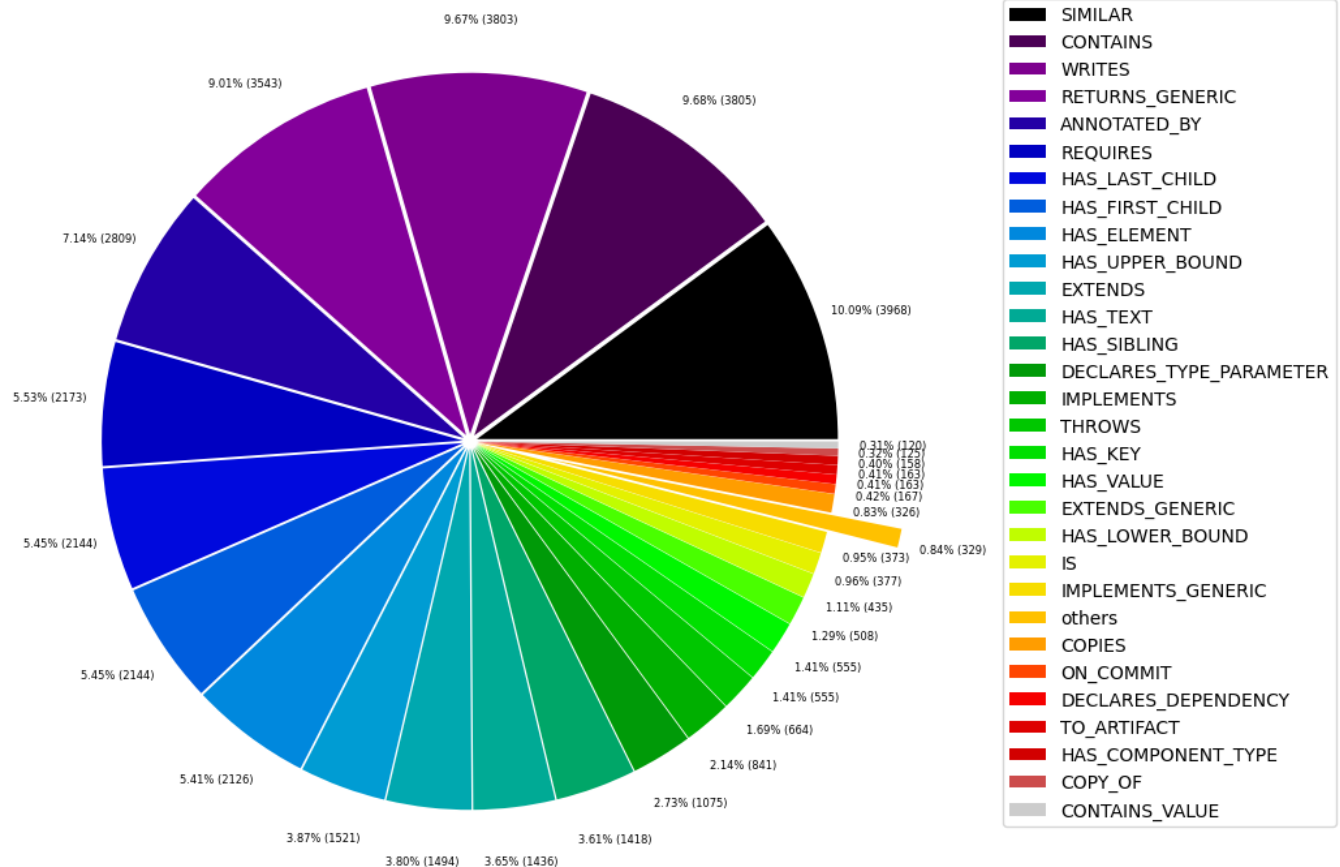
	relationshipType	nodesWithThatRelationshipType	nodesWithThatRelationshipTypePercent
0	HAS_PROPERTY	1	0.000100
1	THROWS_GENERIC	5	0.000501
2	EXCLUDES	5	0.000501
3	DESCRIBES	9	0.000902
4	HAS_ROOT_ELEMENT	10	0.001002
5	HAS_GOAL	16	0.001604
6	HAS_EXECUTION	16	0.001604
7	OF_NAMESPACE	18	0.001804
8	HAS_ATTRIBUTE	18	0.001804
9	INCLUDES_CONCEPT	19	0.001904
10	USES_PLUGIN	21	0.002105
11	REQUIRES_TYPE_PARAMETER	21	0.002105
12	IS_ARTIFACT	21	0.002105
13	HAS_CONFIGURATION	21	0.002105
14	REQUIRES_CONCEPT	28	0.002806
15	HAS_HEAD	28	0.002806
16	DECLARES_NAMESPACE	36	0.003608
17	HAS_DEFAULT	36	0.003608
18	CONTAINS_VALUE	120	0.012028
19	COPY_OF	125	0.012529
20	HAS_COMPONENT_TYPE	158	0.015836
21	TO_ARTIFACT	163	0.016338
22	DECLARES_DEPENDENCY	163	0.016338
23	ON_COMMIT	167	0.016739
24	COPIES	326	0.032675
25	IMPLEMENTS_GENERIC	373	0.037386
26	IS	377	0.037787
27	HAS_LOWER_BOUND	435	0.043600
28	EXTENDS_GENERIC	508	0.050917
29	HAS_VALUE	555	0.055628

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]	240725		11850
1	[Git, Change]	MODIFIES	[File, Git]	240725		240725
2	[Git, Change]	UPDATES	[File, Git]	155355		240725
3	[Git, Change]	CREATES	[File, Git]	58825		240725
4	[Git, Change]	DELETES	[File, Git]	36675		240725
5	[Java, ByteCode, Member, Method]	INVOKES	[Java, ByteCode, Member, Method]	21549		13073
6	[Git, Commit]	HAS_PARENT	[Git, Commit]	14400		11850
7	[Author, Git, Person]	COMMITTED	[Git, Commit]	11850		290
8	[Committer, Git, Person]	COMMITTED	[Git, Commit]	11850		244
9	[Git, Change]	RENAMES	[File, Git]	10130		240725
10	[Java, ByteCode, Member, Method]	HAS	[Java, ByteCode, Parameter]	8316		13073
11	[Java, ByteCode, Member, Method]	READS	[Java, ByteCode, Member, Field]	8129		13073
12	[Java, ByteCode, Parameter]	OF_TYPE	[Type, File, Java, ByteCode, JavaType]	6360		13000
13	[File, Git]	HAS_NEW_NAME	[File, Git]	6177		10613
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, Member, Constructor, Method]	WRITES	[Java, ByteCode, Member, Field]	2426		2038
20	[Java, Value, ByteCode, Annotation]	OF_TYPE	[Type, File, Java, ByteCode, ExternalAnnotatio...	2340		2821
21	[Xml, Element]	HAS_ELEMENT	[Xml, Element]	2126		2144
22	[Java, ByteCode, Member, Constructor, Method]	INVOKES	[Java, ByteCode, Member, Constructor, Method]	2111		2038
23	[Java, ByteCode, Member, Method]	RETURNS	[Type, File, Java, ByteCode, JavaType]	2086		13073
24	[Java, ByteCode, Member, Method]	INVOKES	[Java, ByteCode, Member, Constructor, Method]	2030		13073
25	[Java, ByteCode, Member, Constructor, Method]	HAS	[Java, ByteCode, Parameter]	2023		2038
26	[Java, ByteCode, Parameter]	OF_GENERIC_TYPE	[Java, ByteCode, Bound]	2023		13000
27	[Java, ByteCode, Member, Method, Lambda]	INVOKES	[Java, ByteCode, Member, Method]	1885		936
28	[Java, ByteCode, Bound, ParameterizedType]	HAS_ACTUAL_TYPE_ARGUMENT	[Java, ByteCode, Bound]	1802		7166
29	[Java, ByteCode, Member, Constructor, Method]	INVOKES	[Java, ByteCode, Member, Method]	1790		2038

Graph Density

```
total_number_of_nodes (vertices): 329041
total_number_of_relationships (edges): 997698
-> total directed graph density: 9.21510713590192e-06
-> total directed graph density in percent: 0.000921510713590192
```