

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]	241690	73.210775
1	[Java, ByteCode, Method, Member]	13197	3.997528
2	[Java, ByteCode, Parameter]	13000	3.937855
3	[Git, Commit]	11909	3.607378
4	[File, Git]	10665	3.230555
5	[Java, ByteCode, Bound, ParameterizedType]	7166	2.170667
6	[Java, ByteCode, Bound]	7112	2.154309
7	[Java, ByteCode, Member, Field]	3495	1.058677
8	[Java, ByteCode, Bound, WildcardType]	2906	0.880262
9	[Java, Value, ByteCode, Annotation]	2821	0.854514
10	[Xml, Element]	2144	0.649443
11	[Java, ByteCode, Constructor, Method, Member]	2035	0.616426
12	[Xml, Text]	1436	0.434981
13	[Java, ByteCode, Bound, TypeVariable]	1096	0.331991
14	[Java, ByteCode, Method, Member, Lambda]	936	0.283526
15	[Type, File, Java, ByteCode, ResolvedDuplicate...	900	0.272621
16	[Type, File, Java, ByteCode, Class]	861	0.260807
17	[Type, File, Java, ByteCode, JavaType]	746	0.225972
18	[Java, Value, ByteCode, Primitive]	650	0.196893
19	[Java, ByteCode, Method, Member, GenericDeclar...	569	0.172357
20	[Json, Key]	555	0.168116
21	[Value, Json, Scalar]	539	0.163270
22	[Type, File, Java, ByteCode, ExternalType]	396	0.119953
23	[Author, Git, Person]	290	0.087844
24	[Value, Array]	267	0.080877
25	[Committer, Git, Person]	244	0.073911
26	[Type, File, Java, ByteCode, Class, GenericDec...	236	0.071487
27	[Value, Property]	202	0.061188
28	[Type, File, Java, ByteCode, Interface]	187	0.056645
29	[Java, Value, ByteCode, Class]	172	0.052101

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.

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Nodes per label combination (more than 0.5% overall)

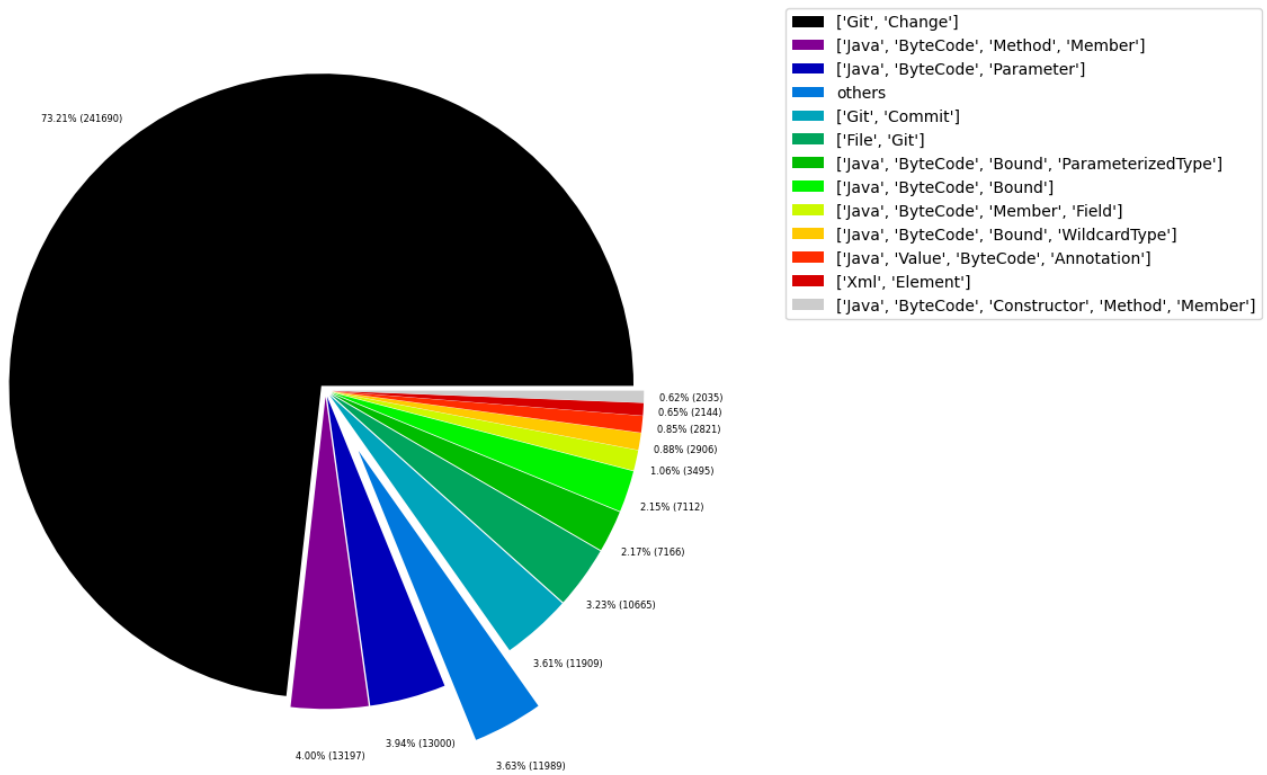


Table 1b - Lowest node count by label combination

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	0.000303
1	[File, TS, Scan]	1	0.000303
2	[File, Json]	2	0.000606
3	[File]	3	0.000909
4	[Java, ByteCode, Constructor, Method, Member, ...]	4	0.001212
5	[Maven, Exclusion]	5	0.001515
6	[Value, Array, Json]	6	0.001817
7	[File, Maven, Xml, Pom, Document]	9	0.002726
8	[Type, File, Java, ByteCode, Void]	9	0.002726
9	[Java, ManifestSection]	9	0.002726
10	[File, Java, Manifest]	9	0.002726
11	[Artifact, File, Jar, Archive, Zip, Java]	9	0.002726
12	[File, Java, ServiceLoader]	10	0.003029
13	[File, Java, Properties]	12	0.003635
14	[Maven, ExecutionGoal]	16	0.004847
15	[Maven, PluginExecution]	16	0.004847
16	[Xml, Attribute]	18	0.005452
17	[jQAssistant, Rule, Concept]	19	0.005755
18	[Maven, Plugin]	21	0.006361
19	[Maven, Configuration]	21	0.006361
20	[Git, Branch]	28	0.008482
21	[Type, File, Java, ByteCode, Enum]	28	0.008482
22	[Type, File, Java, ByteCode, PrimitiveType]	29	0.008784
23	[Xml, Namespace]	36	0.010905
24	[Type, File, Java, ByteCode, Annotation]	43	0.013025
25	[File, Directory]	44	0.013328
26	[Type, File, Java, ByteCode, GenericDeclaratio...	85	0.025748
27	[Artifact, Maven]	92	0.027868
28	[Type, File, Java, ByteCode, ExternalType, Ext...	93	0.028171
29	[Value, ManifestEntry]	120	0.036349

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)

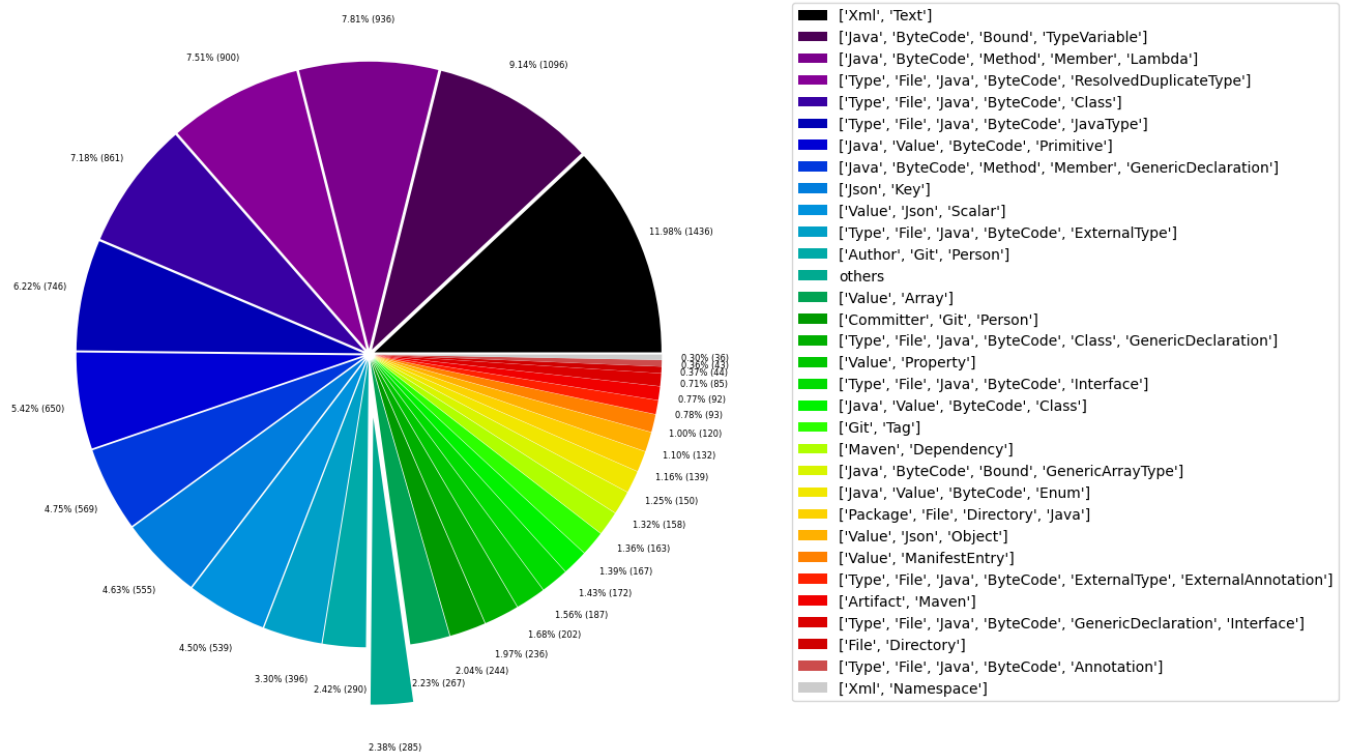


Table 1c - Highest node count by single label

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.

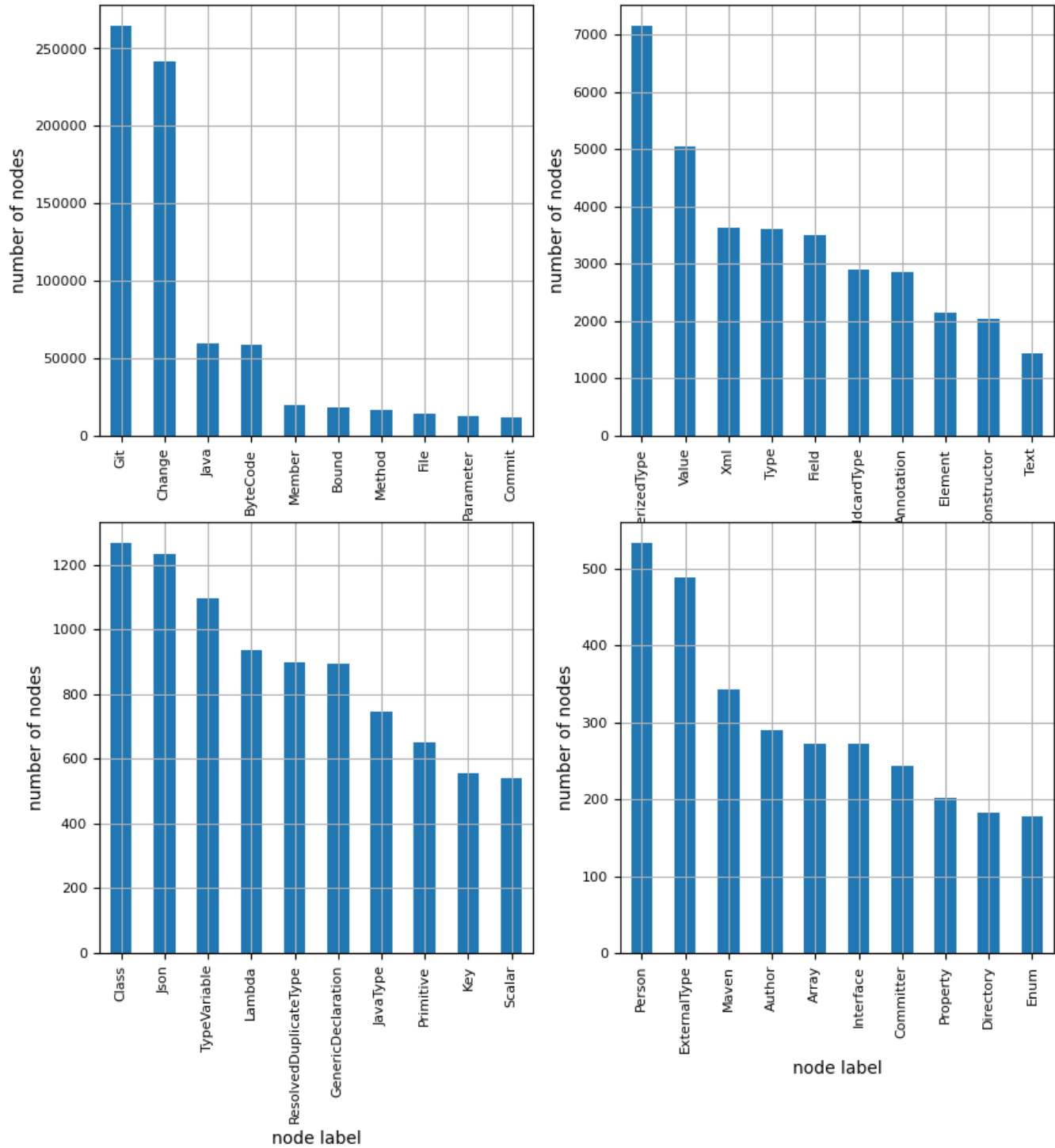
	nodeLabel	nodesWithThatLabel	nodesWithThatLabelPercent
0	Git	264993	80.269531
1	Change	241690	73.210775
2	Java	59268	17.952982
3	ByteCode	59080	17.896035
4	Member	20236	6.129725
5	Bound	18438	5.585089
6	Method	16741	5.071048
7	File	14516	4.397069
8	Parameter	13000	3.937855
9	Commit	11909	3.607378
10	ParameterizedType	7166	2.170667
11	Value	5059	1.532431
12	Xml	3643	1.103508
13	Type	3613	1.094421
14	Field	3495	1.058677
15	WildcardType	2906	0.880262
16	Annotation	2864	0.867540
17	Element	2144	0.649443
18	Constructor	2039	0.617637
19	Text	1436	0.434981
20	Class	1269	0.384395
21	Json	1234	0.373793
22	TypeVariable	1096	0.331991
23	Lambda	936	0.283526
24	ResolvedDuplicateType	900	0.272621
25	GenericDeclaration	894	0.270803
26	JavaType	746	0.225972
27	Primitive	650	0.196893
28	Key	555	0.168116
29	Scalar	539	0.163270
30	Person	534	0.161755
31	ExternalType	489	0.148124
32	Maven	343	0.103899
33	Author	290	0.087844
34	Array	273	0.082695
35	Interface	272	0.082392
36	Committer	244	0.073911
37	Property	202	0.061188
38	Directory	183	0.055433
39	Enum	178	0.053918

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: 1000886

	relationshipType	nodesWithThatRelationshipType	nodesWithThatRelationshipTypePercent
0	CONTAINS_CHANGE	241690	24.147605
1	MODIFIES	241690	24.147605
2	UPDATES	156093	15.595482
3	CREATES	59022	5.896975
4	DELETES	36746	3.671347
5	INVOKES	35571	3.553951
6	COMMITTED	23818	2.379692
7	DEPENDS_ON	21873	2.185364
8	OF_TYPE	21347	2.132810
9	DECLARES	20677	2.065870
10	OF_RAW_TYPE	17077	1.706188
11	HAS_PARENT	14479	1.446618
12	HAS	14094	1.408152
13	RETURNS	12547	1.253589
14	RENAMES	10171	1.016200
15	READS	9078	0.906996
16	HAS_ACTUAL_TYPE_ARGUMENT	8276	0.826867
17	HAS_NEW_NAME	6194	0.618852
18	OF_GENERIC_TYPE	5902	0.589678
19	RESOLVES_TO	5224	0.521938
20	SIMILAR	3968	0.396449
21	CONTAINS	3805	0.380163
22	WRITES	3803	0.379963
23	RETURNS_GENERIC	3543	0.353986
24	ANNOTATED_BY	2809	0.280651
25	REQUIRES	2173	0.217108
26	HAS_FIRST_CHILD	2144	0.214210
27	HAS_LAST_CHILD	2144	0.214210
28	HAS_ELEMENT	2126	0.212412
29	HAS_UPPER_BOUND	1521	0.151965

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)

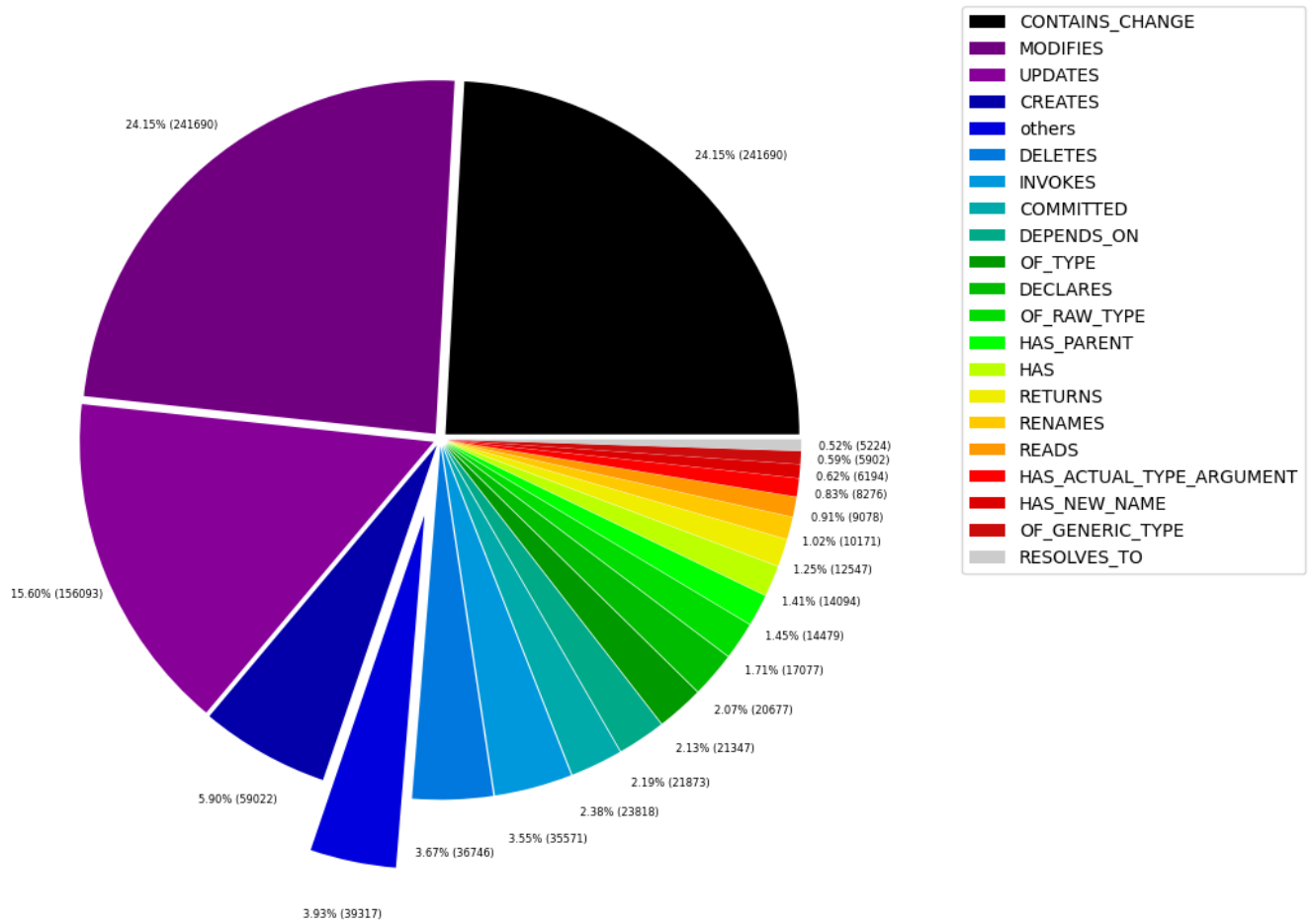


Table 2b - Lowest relationship count by type

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.

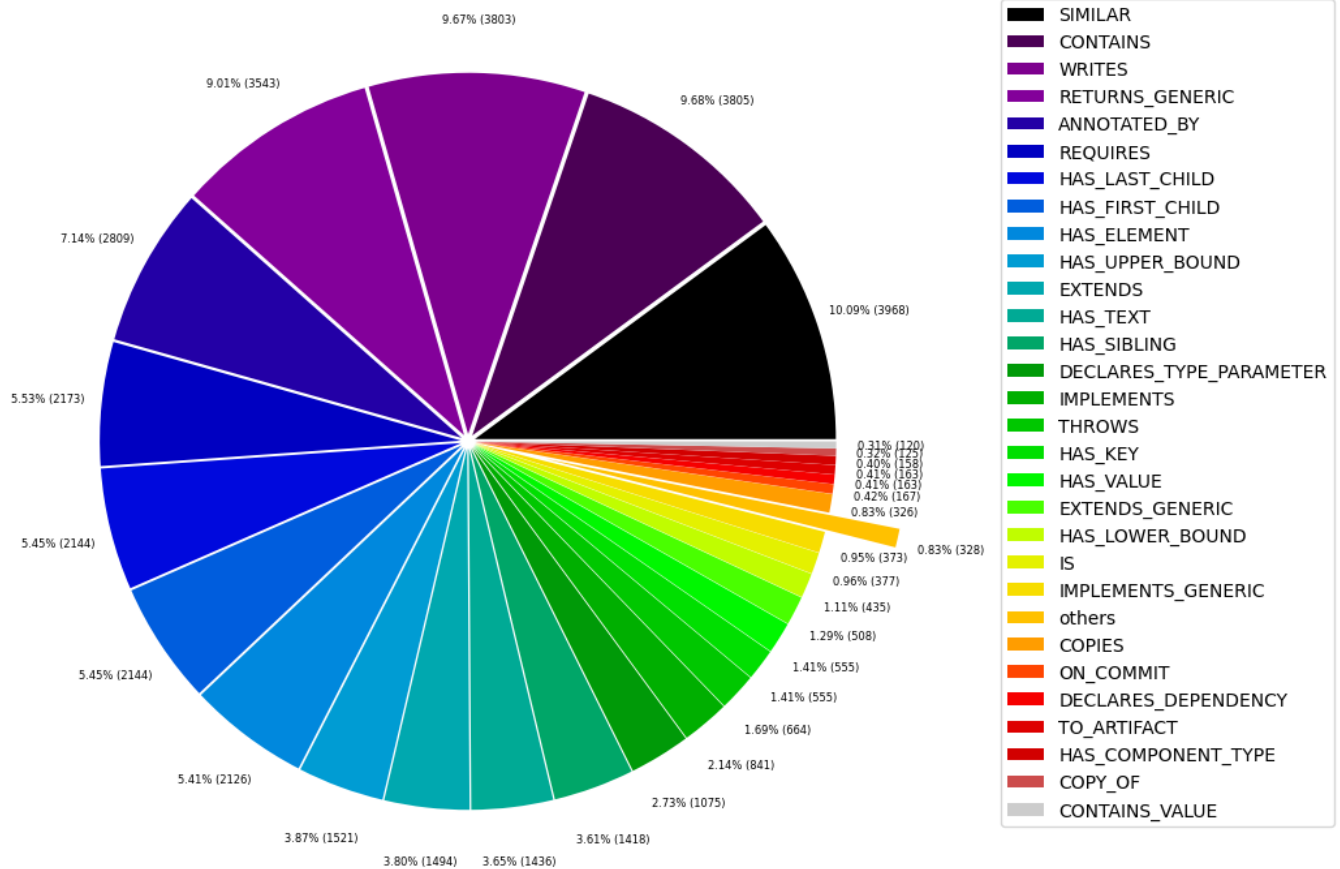
	relationshipType	nodesWithThatRelationshipType	nodesWithThatRelationshipTypePercent
0	HAS_PROPERTY	1	0.000100
1	THROWS_GENERIC	5	0.000500
2	EXCLUDES	5	0.000500
3	HAS_ROOT_ELEMENT	9	0.000899
4	DESCRIBES	9	0.000899
5	HAS_GOAL	16	0.001599
6	HAS_EXECUTION	16	0.001599
7	OF_NAMESPACE	18	0.001798
8	HAS_ATTRIBUTE	18	0.001798
9	INCLUDES_CONCEPT	19	0.001898
10	USES_PLUGIN	21	0.002098
11	REQUIRES_TYPE_PARAMETER	21	0.002098
12	IS_ARTIFACT	21	0.002098
13	HAS_CONFIGURATION	21	0.002098
14	REQUIRES_CONCEPT	28	0.002798
15	HAS_HEAD	28	0.002798
16	DECLARES_NAMESPACE	36	0.003597
17	HAS_DEFAULT	36	0.003597
18	CONTAINS_VALUE	120	0.011989
19	COPY_OF	125	0.012489
20	HAS_COMPONENT_TYPE	158	0.015786
21	TO_ARTIFACT	163	0.016286
22	DECLARES_DEPENDENCY	163	0.016286
23	ON_COMMIT	167	0.016685
24	COPIES	326	0.032571
25	IMPLEMENTS_GENERIC	373	0.037267
26	IS	377	0.037667
27	HAS_LOWER_BOUND	435	0.043461
28	EXTENDS_GENERIC	508	0.050755
29	HAS_VALUE	555	0.055451

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]	241690		11909
1	[Git, Change]	MODIFIES	[File, Git]	241690		241690
2	[Git, Change]	UPDATES	[File, Git]	156093		241690
3	[Git, Change]	CREATES	[File, Git]	59022		241690
4	[Git, Change]	DELETES	[File, Git]	36746		241690
5	[Java, ByteCode, Method, Member]	INVOKES	[Java, ByteCode, Method, Member]	21527		13074
6	[Git, Commit]	HAS_PARENT	[Git, Commit]	14470		11909
7	[Author, Git, Person]	COMMITTED	[Git, Commit]	11909		290
8	[Committer, Git, Person]	COMMITTED	[Git, Commit]	11909		244
9	[Git, Change]	RENAMES	[File, Git]	10171		241690
10	[Java, ByteCode, Method, Member]	HAS	[Java, ByteCode, Parameter]	8300		13074
11	[Java, ByteCode, Method, Member]	READS	[Java, ByteCode, Member, Field]	8101		13074
12	[Java, ByteCode, Parameter]	OF_TYPE	[Type, File, Java, ByteCode, JavaType]	6360		13000
13	[File, Git]	HAS_NEW_NAME	[File, Git]	6194		10665
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		2035
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		2035
23	[Java, ByteCode, Method, Member]	RETURNS	[Type, File, Java, ByteCode, JavaType]	2088		13074
24	[Java, ByteCode, Constructor, Method, Member]	HAS	[Java, ByteCode, Parameter]	2023		2035
25	[Java, ByteCode, Parameter]	OF_GENERIC_TYPE	[Java, ByteCode, Bound]	2023		13000
26	[Java, ByteCode, Method, Member]	INVOKES	[Java, ByteCode, Constructor, Method, Member]	2008		13074
27	[Java, ByteCode, Method, Member, Lambda]	INVOKES	[Java, ByteCode, Method, Member]	1882		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		2035

Graph Density

```
total_number_of_nodes (vertices): 330129
total_number_of_relationships (edges): 1000886
-> total directed graph density: 9.1837187985962e-06
-> total directed graph density in percent: 0.00091837187985962
```