

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]	235897	72.778066
1	[Java, ByteCode, Member, Method]	13186	4.068096
2	[Java, ByteCode, Parameter]	13000	4.010712
3	[Git, Commit]	11787	3.636481
4	[File, Git]	10598	3.269656
5	[Java, ByteCode, Bound, ParameterizedType]	7166	2.210828
6	[Java, ByteCode, Bound]	7112	2.194168
7	[Java, ByteCode, Member, Field]	3490	1.076722
8	[Java, ByteCode, Bound, WildcardType]	2906	0.896548
9	[Java, Value, ByteCode, Annotation]	2821	0.870324
10	[Xml, Element]	2144	0.661459
11	[Java, ByteCode, Member, Constructor, Method]	2040	0.629373
12	[Xml, Text]	1436	0.443029
13	[Java, ByteCode, Bound, TypeVariable]	1096	0.338134
14	[Java, ByteCode, Member, Method, Lambda]	936	0.288771
15	[Type, File, Java, ByteCode, ResolvedDuplicate...	900	0.277665
16	[Type, File, Java, ByteCode, Class]	861	0.265633
17	[Type, File, Java, ByteCode, JavaType]	746	0.230153
18	[Java, Value, ByteCode, Primitive]	650	0.200536
19	[Java, ByteCode, GenericDeclaration, Member, M...	569	0.175546
20	[Json, Key]	555	0.171227
21	[Value, Json, Scalar]	539	0.166290
22	[Type, File, Java, ByteCode, ExternalType]	396	0.122172
23	[Author, Git, Person]	289	0.089161
24	[Value, Array]	267	0.082374
25	[Committer, Git, Person]	243	0.074969
26	[Type, File, Java, ByteCode, Class, GenericDec...	236	0.072810
27	[Value, Property]	202	0.062320
28	[Type, File, Java, ByteCode, Interface]	187	0.057693
29	[Java, Value, ByteCode, Class]	172	0.053065

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)

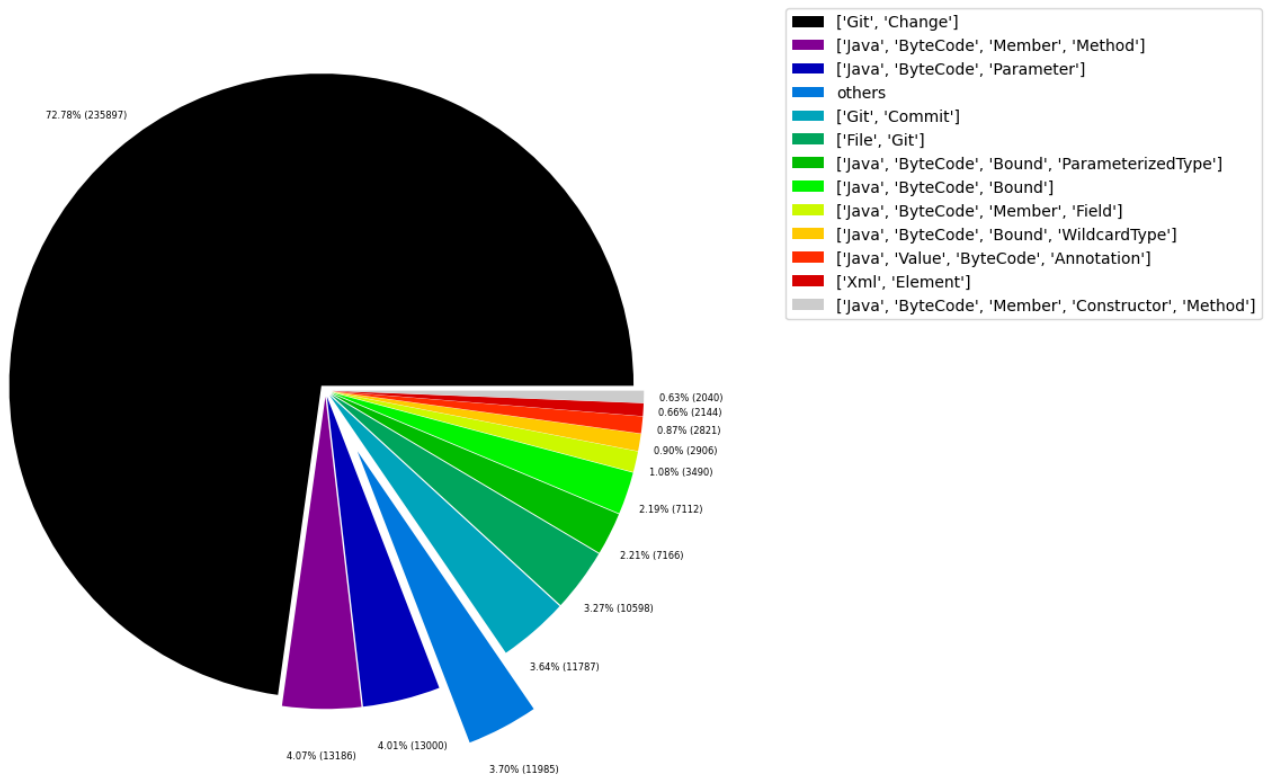


Table 1b - Lowest node count by label combination

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	0.000309
1	[File, TS, Scan]	1	0.000309
2	[File, Json]	2	0.000617
3	[File]	3	0.000926
4	[Java, ByteCode, GenericDeclaration, Member, C...	4	0.001234
5	[Maven, Exclusion]	5	0.001543
6	[Value, Array, Json]	6	0.001851
7	[Type, File, Java, ByteCode, Void]	9	0.002777
8	[File, Maven, Xml, Pom, Document]	9	0.002777
9	[Java, ManifestSection]	9	0.002777
10	[File, Java, Manifest]	9	0.002777
11	[Artifact, File, Jar, Archive, Zip, Java]	9	0.002777
12	[File, Java, ServiceLoader]	10	0.003085
13	[File, Java, Properties]	12	0.003702
14	[Maven, ExecutionGoal]	16	0.004936
15	[Maven, PluginExecution]	16	0.004936
16	[Xml, Attribute]	18	0.005553
17	[JQAssistant, Rule, Concept]	19	0.005862
18	[Maven, Plugin]	21	0.006479
19	[Maven, Configuration]	21	0.006479
20	[Git, Branch]	26	0.008021
21	[Type, File, Java, ByteCode, Enum]	28	0.008638
22	[Type, File, Java, ByteCode, PrimitiveType]	29	0.008947
23	[Xml, Namespace]	36	0.011107
24	[Type, File, Java, ByteCode, Annotation]	43	0.013266
25	[File, Directory]	44	0.013575
26	[Type, File, Java, ByteCode, GenericDeclaratio...	85	0.026224
27	[Artifact, Maven]	92	0.028383
28	[Type, File, Java, ByteCode, ExternalAnnotatio...	93	0.028692
29	[Value, ManifestEntry]	120	0.037022

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)

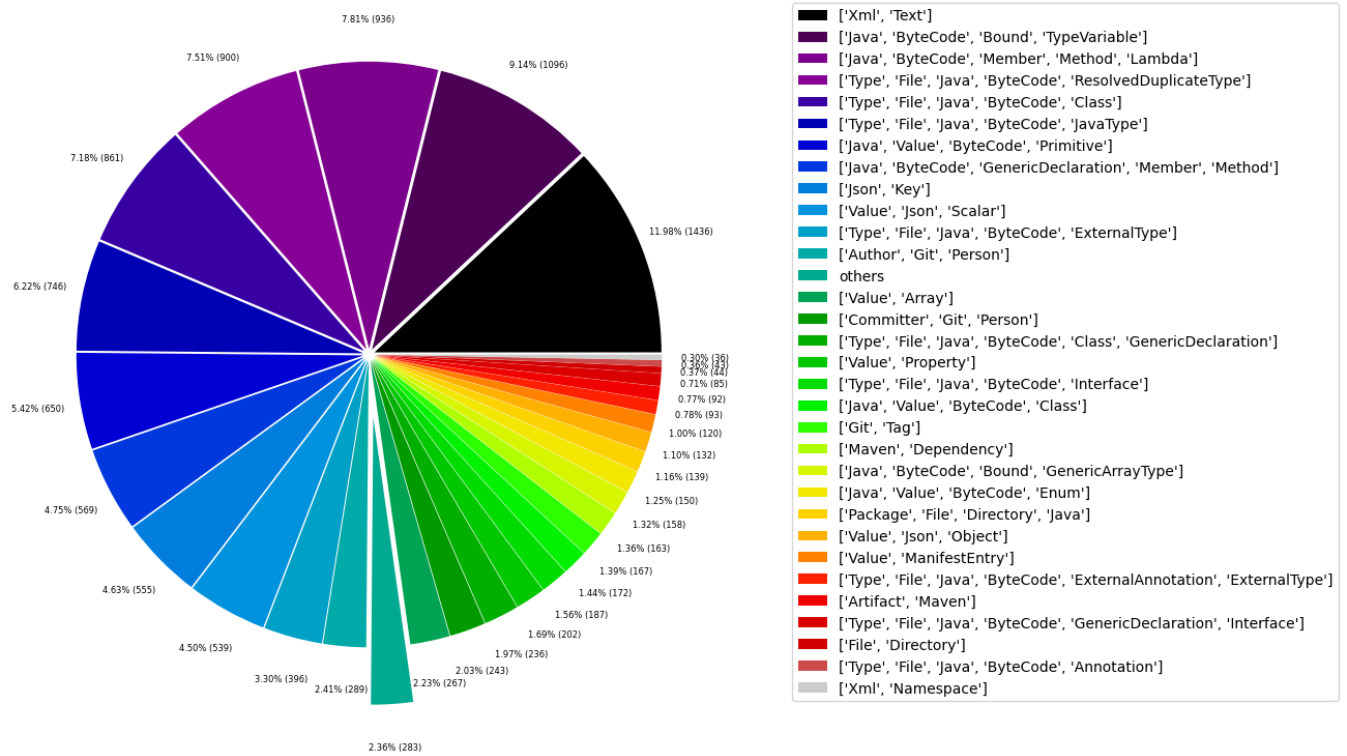


Table 1c - Highest node count by single label

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.

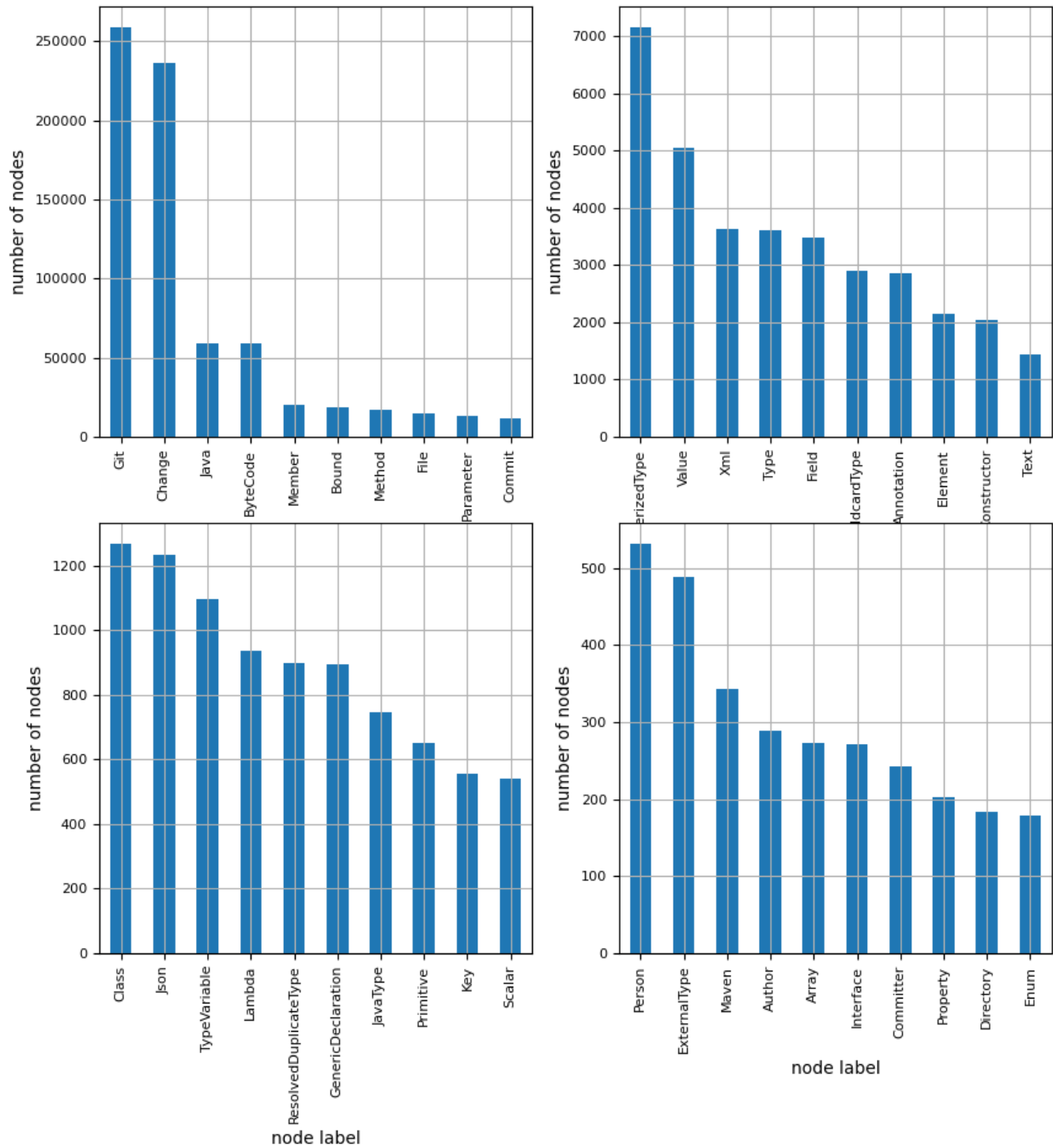
	nodeLabel	nodesWithThatLabel	nodesWithThatLabelPercent
0	Git	259007	79.907877
1	Change	235897	72.778066
2	Java	59257	18.281749
3	ByteCode	59069	18.223748
4	Member	20225	6.239742
5	Bound	18438	5.688423
6	Method	16735	5.163020
7	File	14449	4.457752
8	Parameter	13000	4.010712
9	Commit	11787	3.636481
10	ParameterizedType	7166	2.210828
11	Value	5059	1.560784
12	Xml	3643	1.123925
13	Type	3613	1.114669
14	Field	3490	1.076722
15	WildcardType	2906	0.896548
16	Annotation	2864	0.883591
17	Element	2144	0.661459
18	Constructor	2044	0.630607
19	Text	1436	0.443029
20	Class	1269	0.391507
21	Json	1234	0.380709
22	TypeVariable	1096	0.338134
23	Lambda	936	0.288771
24	ResolvedDuplicateType	900	0.277665
25	GenericDeclaration	894	0.275814
26	JavaType	746	0.230153
27	Primitive	650	0.200536
28	Key	555	0.171227
29	Scalar	539	0.166290
30	Person	532	0.164131
31	ExternalType	489	0.150864
32	Maven	343	0.105821
33	Author	289	0.089161
34	Array	273	0.084225
35	Interface	272	0.083916
36	Committer	243	0.074969
37	Property	202	0.062320
38	Directory	183	0.056458
39	Enum	178	0.054916

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: 982691

	relationshipType	nodesWithThatRelationshipType	nodesWithThatRelationshipTypePercent
0	CONTAINS_CHANGE	235897	24.005206
1	MODIFIES	235897	24.005206
2	UPDATES	151660	15.433132
3	CREATES	58219	5.924446
4	DELETES	35985	3.661884
5	INVOKES	35596	3.622298
6	COMMITTED	23574	2.398923
7	DEPENDS_ON	21873	2.225827
8	OF_TYPE	21347	2.172300
9	DECLARES	20666	2.103001
10	OF_RAW_TYPE	17077	1.737779
11	HAS_PARENT	14327	1.457935
12	HAS	14094	1.434225
13	RETURNS	12547	1.276800
14	RENAMES	9967	1.014256
15	READS	9078	0.923790
16	HAS_ACTUAL_TYPE_ARGUMENT	8276	0.842177
17	HAS_NEW_NAME	6165	0.627359
18	OF_GENERIC_TYPE	5902	0.600596
19	RESOLVES_TO	5230	0.532212
20	SIMILAR	3968	0.403789
21	CONTAINS	3805	0.387202
22	WRITES	3803	0.386999
23	RETURNS_GENERIC	3543	0.360541
24	ANNOTATED_BY	2809	0.285848
25	REQUIRES	2173	0.221127
26	HAS_FIRST_CHILD	2144	0.218176
27	HAS_LAST_CHILD	2144	0.218176
28	HAS_ELEMENT	2126	0.216345
29	HAS_UPPER_BOUND	1521	0.154779

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)

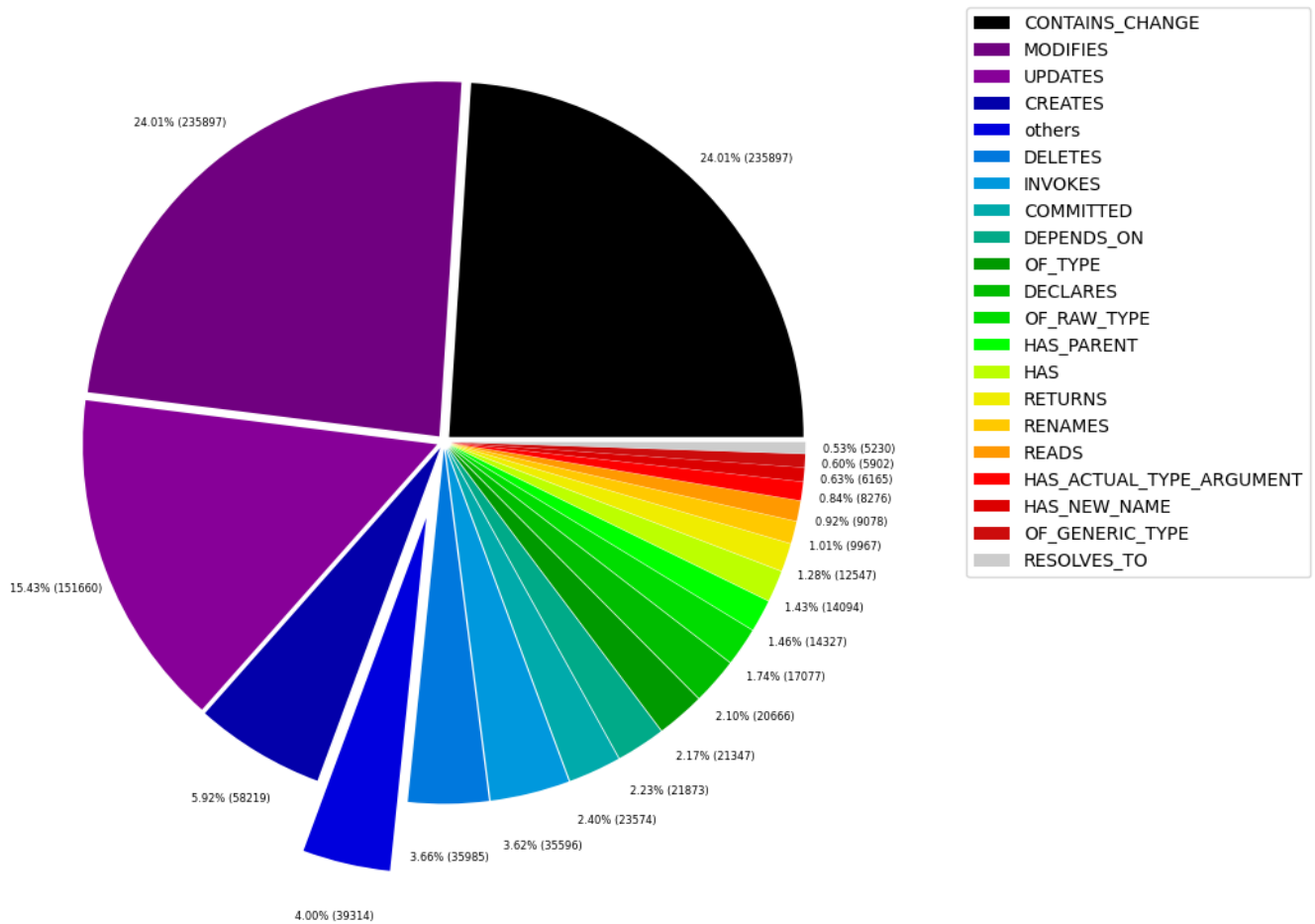


Table 2b - Lowest relationship count by type

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.

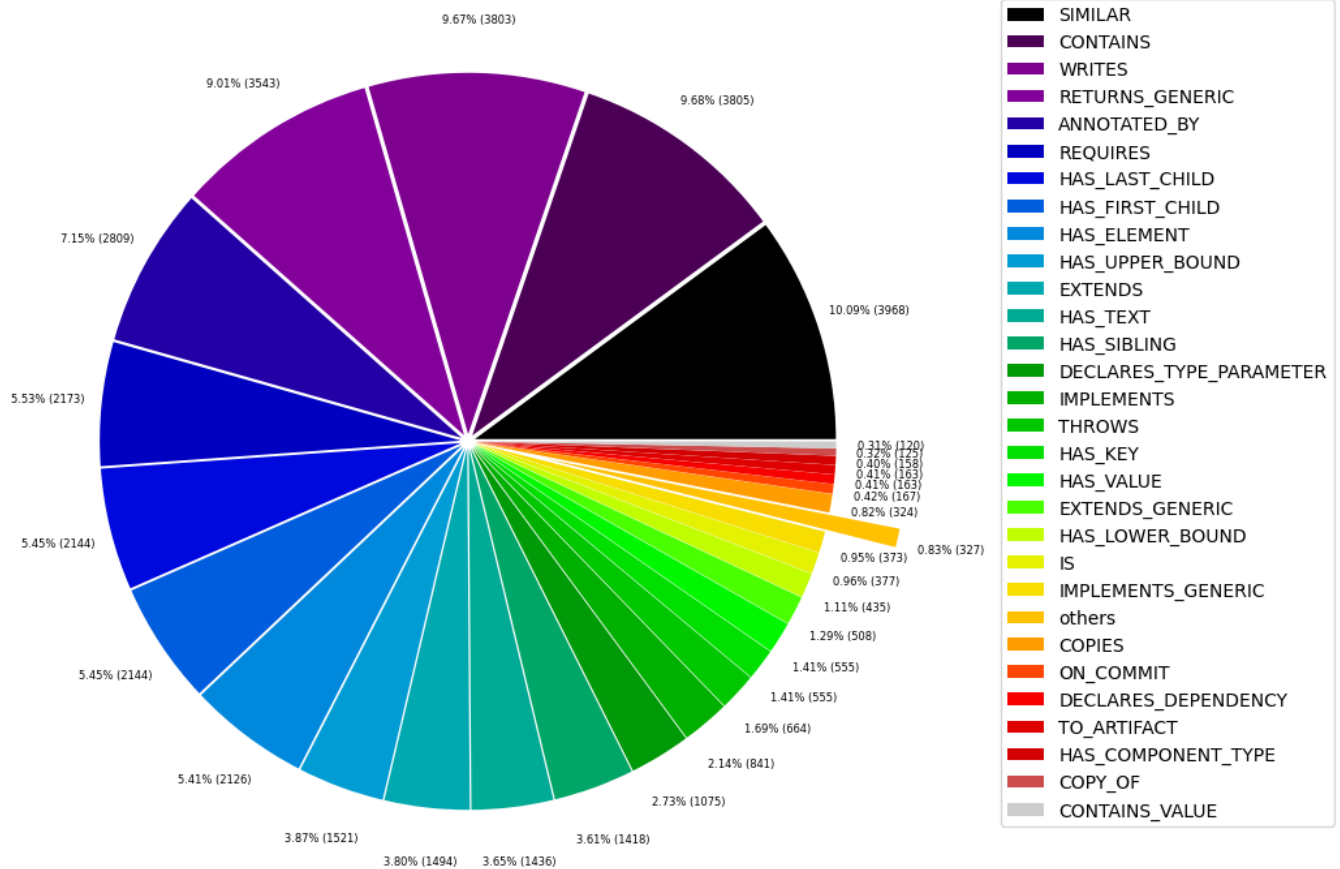
	relationshipType	nodesWithThatRelationshipType	nodesWithThatRelationshipTypePercent
0	HAS_PROPERTY	1	0.000102
1	THROWS_GENERIC	5	0.000509
2	EXCLUDES	5	0.000509
3	DESCRIBES	9	0.000916
4	HAS_ROOT_ELEMENT	10	0.001018
5	HAS_GOAL	16	0.001628
6	HAS_EXECUTION	16	0.001628
7	OF_NAMESPACE	18	0.001832
8	HAS_ATTRIBUTE	18	0.001832
9	INCLUDES_CONCEPT	19	0.001933
10	USES_PLUGIN	21	0.002137
11	REQUIRES_TYPE_PARAMETER	21	0.002137
12	IS_ARTIFACT	21	0.002137
13	HAS_CONFIGURATION	21	0.002137
14	HAS_HEAD	26	0.002646
15	REQUIRES_CONCEPT	28	0.002849
16	DECLARES_NAMESPACE	36	0.003663
17	HAS_DEFAULT	36	0.003663
18	CONTAINS_VALUE	120	0.012211
19	COPY_OF	125	0.012720
20	HAS_COMPONENT_TYPE	158	0.016078
21	TO_ARTIFACT	163	0.016587
22	DECLARES_DEPENDENCY	163	0.016587
23	ON_COMMIT	167	0.016994
24	COPIES	324	0.032971
25	IMPLEMENTS_GENERIC	373	0.037957
26	IS	377	0.038364
27	HAS_LOWER_BOUND	435	0.044266
28	EXTENDS_GENERIC	508	0.051695
29	HAS_VALUE	555	0.056478

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]	235897		11787
1	[Git, Change]	MODIFIES	[File, Git]	235897		235897
2	[Git, Change]	UPDATES	[File, Git]	151660		235897
3	[Git, Change]	CREATES	[File, Git]	58219		235897
4	[Git, Change]	DELETES	[File, Git]	35985		235897
5	[Java, ByteCode, Member, Method]	INVOKES	[Java, ByteCode, Member, Method]	21569		13071
6	[Git, Commit]	HAS_PARENT	[Git, Commit]	14318		11787
7	[Author, Git, Person]	COMMITTED	[Git, Commit]	11787		289
8	[Committer, Git, Person]	COMMITTED	[Git, Commit]	11787		243
9	[Git, Change]	RENAMES	[File, Git]	9967		235897
10	[Java, ByteCode, Member, Method]	HAS	[Java, ByteCode, Parameter]	8315		13071
11	[Java, ByteCode, Member, Method]	READS	[Java, ByteCode, Member, Field]	8132		13071
12	[Java, ByteCode, Parameter]	OF_TYPE	[Type, File, Java, ByteCode, JavaType]	6360		13000
13	[File, Git]	HAS_NEW_NAME	[File, Git]	6165		10598
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		2040
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		2040
23	[Java, ByteCode, Member, Method]	RETURNS	[Type, File, Java, ByteCode, JavaType]	2087		13071
24	[Java, ByteCode, Member, Method]	INVOKES	[Java, ByteCode, Member, Constructor, Method]	2031		13071
25	[Java, ByteCode, Member, Constructor, Method]	HAS	[Java, ByteCode, Parameter]	2023		2040
26	[Java, ByteCode, Parameter]	OF_GENERIC_TYPE	[Java, ByteCode, Bound]	2023		13000
27	[Java, ByteCode, Member, Method, Lambda]	INVOKES	[Java, ByteCode, Member, Method]	1882		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]	1796		2040

Graph Density

```
total_number_of_nodes (vertices): 324132
total_number_of_relationships (edges): 982691
-> total directed graph density: 9.353507536721999e-06
-> total directed graph density in percent: 0.0009353507536721999
```