

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]	242234	73.239121
1	[Java, ByteCode, Method, Member]	13206	3.992816
2	[Java, ByteCode, Parameter]	13000	3.930532
3	[Git, Commit]	11956	3.614880
4	[File, Git]	10671	3.226362
5	[Java, ByteCode, Bound, ParameterizedType]	7166	2.166630
6	[Java, ByteCode, Bound]	7112	2.150304
7	[Java, ByteCode, Member, Field]	3495	1.056709
8	[Java, ByteCode, Bound, WildcardType]	2906	0.878625
9	[Java, Value, ByteCode, Annotation]	2821	0.852926
10	[Xml, Element]	2144	0.648235
11	[Java, ByteCode, Constructor, Method, Member]	2039	0.616489
12	[Xml, Text]	1436	0.434173
13	[Java, ByteCode, Bound, TypeVariable]	1096	0.331374
14	[Java, ByteCode, Method, Member, Lambda]	936	0.282998
15	[Type, File, Java, ByteCode, ResolvedDuplicate...	900	0.272114
16	[Type, File, Java, ByteCode, Class]	861	0.260322
17	[Type, File, Java, ByteCode, JavaType]	746	0.225552
18	[Java, Value, ByteCode, Primitive]	650	0.196527
19	[Java, ByteCode, Method, Member, GenericDeclar...	569	0.172036
20	[Json, Key]	555	0.167803
21	[Value, Json, Scalar]	539	0.162966
22	[Type, File, Java, ByteCode, ExternalType]	396	0.119730
23	[Author, Git, Person]	292	0.088286
24	[Value, Array]	267	0.080727
25	[Committer, Git, Person]	247	0.074680
26	[Type, File, Java, ByteCode, Class, GenericDec...	236	0.071354
27	[Value, Property]	202	0.061074
28	[Type, File, Java, ByteCode, Interface]	187	0.056539
29	[Java, Value, ByteCode, Class]	172	0.052004

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)

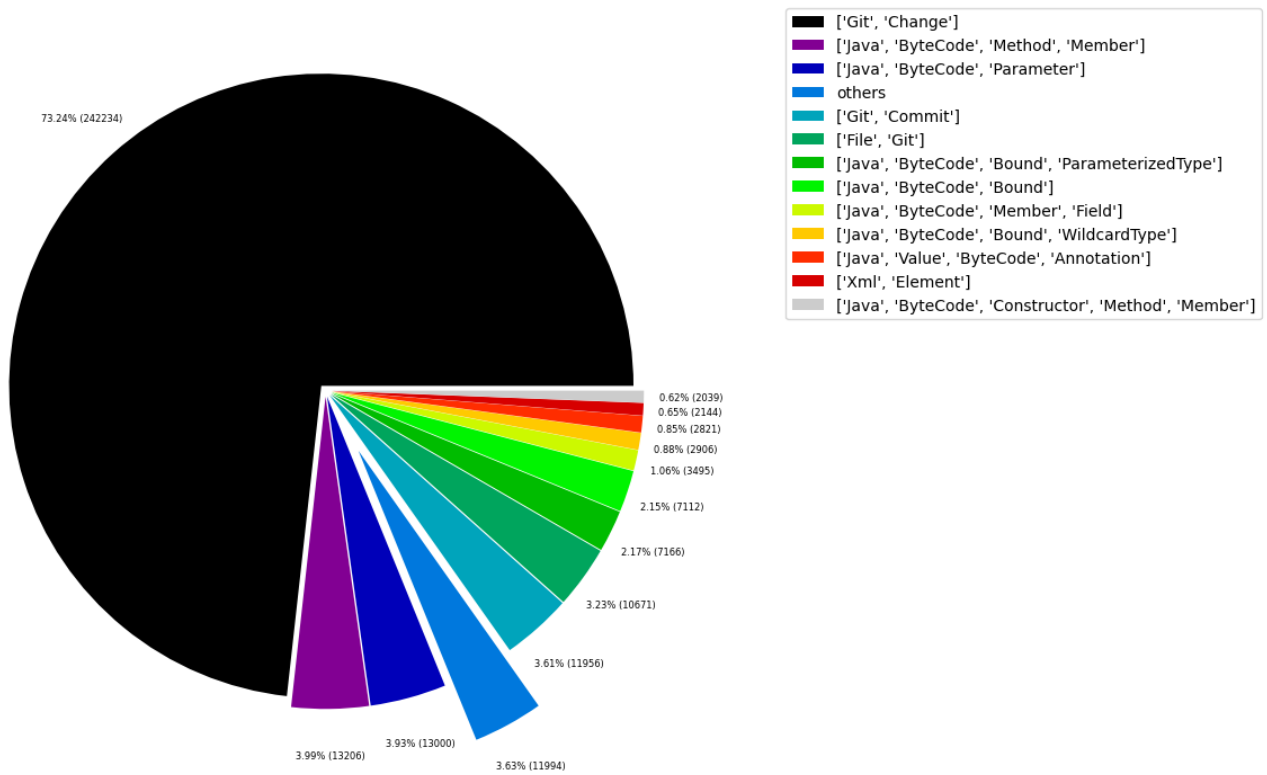


Table 1b - Lowest node count by label combination

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, Json]	2	0.000605
2	[File]	3	0.000907
3	[Java, ByteCode, Constructor, Method, Member, ...]	4	0.001209
4	[Maven, Exclusion]	5	0.001512
5	[Value, Array, Json]	6	0.001814
6	[File, Maven, Xml, Pom, Document]	9	0.002721
7	[Type, File, Java, ByteCode, Void]	9	0.002721
8	[Java, ManifestSection]	9	0.002721
9	[File, Java, Manifest]	9	0.002721
10	[Artifact, File, Jar, Archive, Zip, Java]	9	0.002721
11	[File, Java, ServiceLoader]	10	0.003023
12	[File, Java, Properties]	12	0.003628
13	[Maven, ExecutionGoal]	16	0.004838
14	[Maven, PluginExecution]	16	0.004838
15	[Xml, Attribute]	18	0.005442
16	[jQAssistant, Rule, Concept]	19	0.005745
17	[Maven, Plugin]	21	0.006349
18	[Maven, Configuration]	21	0.006349
19	[Type, File, Java, ByteCode, Enum]	28	0.008466
20	[Git, Branch]	29	0.008768
21	[Type, File, Java, ByteCode, PrimitiveType]	29	0.008768
22	[Xml, Namespace]	36	0.010885
23	[Type, File, Java, ByteCode, Annotation]	43	0.013001
24	[File, Directory]	44	0.013303
25	[Type, File, Java, ByteCode, GenericDeclaratio...	85	0.025700
26	[Artifact, Maven]	92	0.027816
27	[Type, File, Java, ByteCode, ExternalType, Ext...	93	0.028118
28	[Value, ManifestEntry]	120	0.036282
29	[Value, Json, Object]	132	0.039910

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)

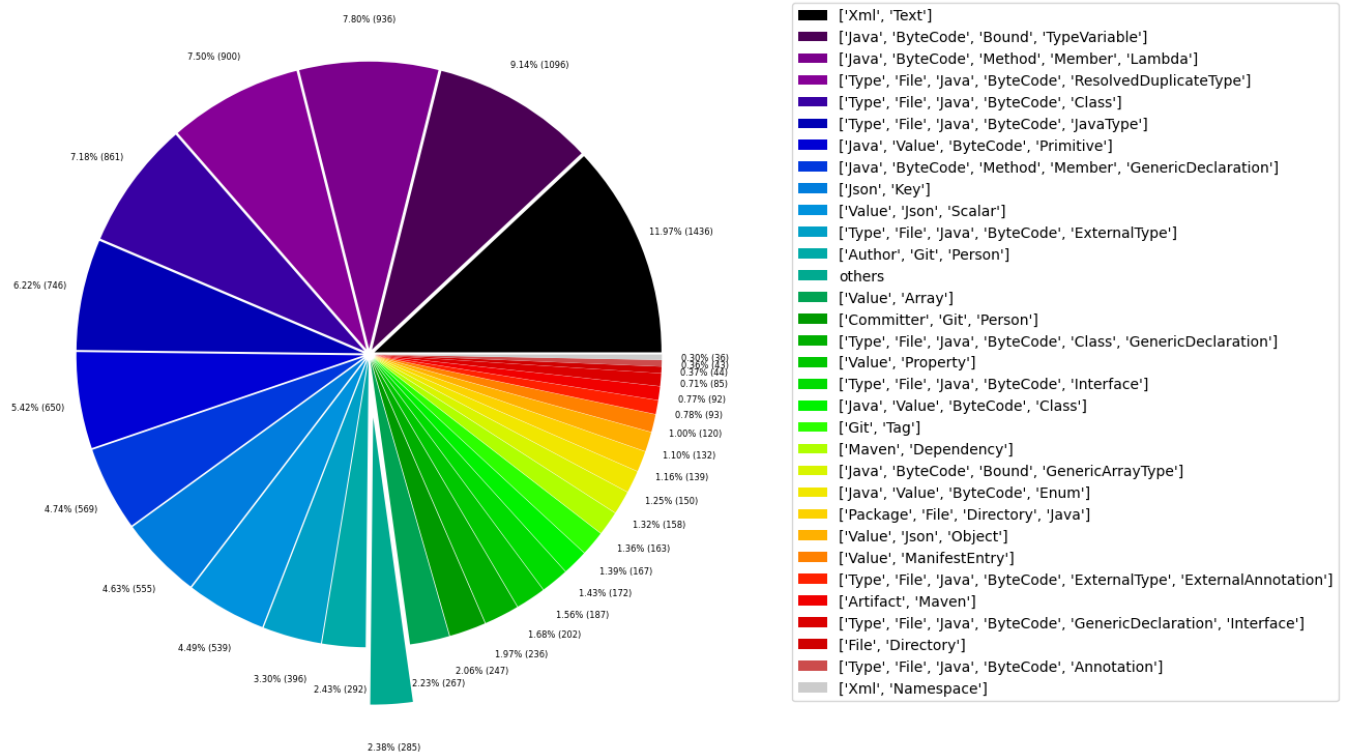


Table 1c - Highest node count by single label

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.

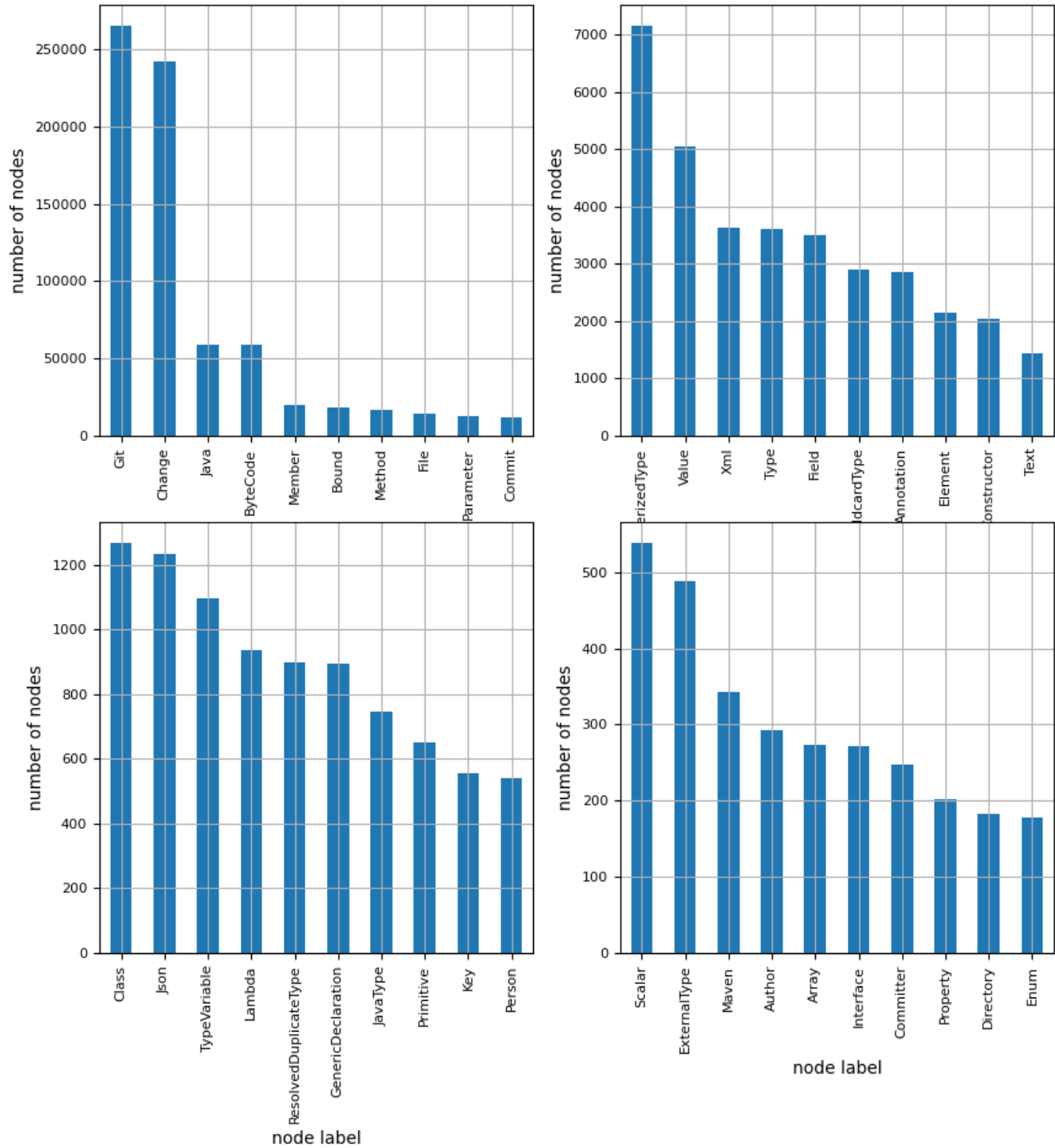
	nodeLabel	nodesWithThatLabel	nodesWithThatLabelPercent
0	Git	265596	80.302591
1	Change	242234	73.239121
2	Java	59281	17.923530
3	ByteCode	59093	17.866688
4	Member	20249	6.122258
5	Bound	18438	5.574704
6	Method	16754	5.065549
7	File	14521	4.390405
8	Parameter	13000	3.930532
9	Commit	11956	3.614880
10	ParameterizedType	7166	2.166630
11	Value	5059	1.529582
12	Xml	3643	1.101456
13	Type	3613	1.092386
14	Field	3495	1.056709
15	WildcardType	2906	0.878625
16	Annotation	2864	0.865927
17	Element	2144	0.648235
18	Constructor	2043	0.617698
19	Text	1436	0.434173
20	Class	1269	0.383680
21	Json	1234	0.373098
22	TypeVariable	1096	0.331374
23	Lambda	936	0.282998
24	ResolvedDuplicateType	900	0.272114
25	GenericDeclaration	894	0.270300
26	JavaType	746	0.225552
27	Primitive	650	0.196527
28	Key	555	0.167803
29	Person	539	0.162966
30	Scalar	539	0.162966
31	ExternalType	489	0.147848
32	Maven	343	0.103706
33	Author	292	0.088286
34	Array	273	0.082541
35	Interface	272	0.082239
36	Committer	247	0.074680
37	Property	202	0.061074
38	Directory	183	0.055330
39	Enum	178	0.053818

Chart 1c - Highest node count by label

Shows the 40 labels with the highest number of nodes.

<Figure size 640x480 with 0 Axes>

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: 1002704

	relationshipType	nodesWithThatRelationshipType	nodesWithThatRelationshipTypePercent
0	CONTAINS_CHANGE	242234	24.158077
1	MODIFIES	242234	24.158077
2	UPDATES	156511	15.608894
3	CREATES	59135	5.897553
4	DELETES	36763	3.666386
5	INVOKES	35576	3.548006
6	COMMITTED	23912	2.384752
7	DEPENDS_ON	21873	2.181401
8	OF_TYPE	21347	2.128943
9	DECLARES	20690	2.063421
10	OF_RAW_TYPE	17077	1.703095
11	HAS_PARENT	14537	1.449780
12	HAS	14094	1.405599
13	RETURNS	12547	1.251316
14	RENAMES	10175	1.014756
15	READS	9078	0.905352
16	HAS_ACTUAL_TYPE_ARGUMENT	8276	0.825368
17	HAS_NEW_NAME	6196	0.617929
18	OF_GENERIC_TYPE	5902	0.588608
19	RESOLVES_TO	5228	0.521390
20	SIMILAR	3968	0.395730
21	CONTAINS	3805	0.379474
22	WRITES	3803	0.379274
23	RETURNS_GENERIC	3543	0.353345
24	ANNOTATED_BY	2809	0.280142
25	REQUIRES	2173	0.216714
26	HAS_FIRST_CHILD	2144	0.213822
27	HAS_LAST_CHILD	2144	0.213822
28	HAS_ELEMENT	2126	0.212027
29	HAS_UPPER_BOUND	1521	0.151690

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.

<Figure size 640x480 with 0 Axes>

Relationship types (more than 0.5% overall)

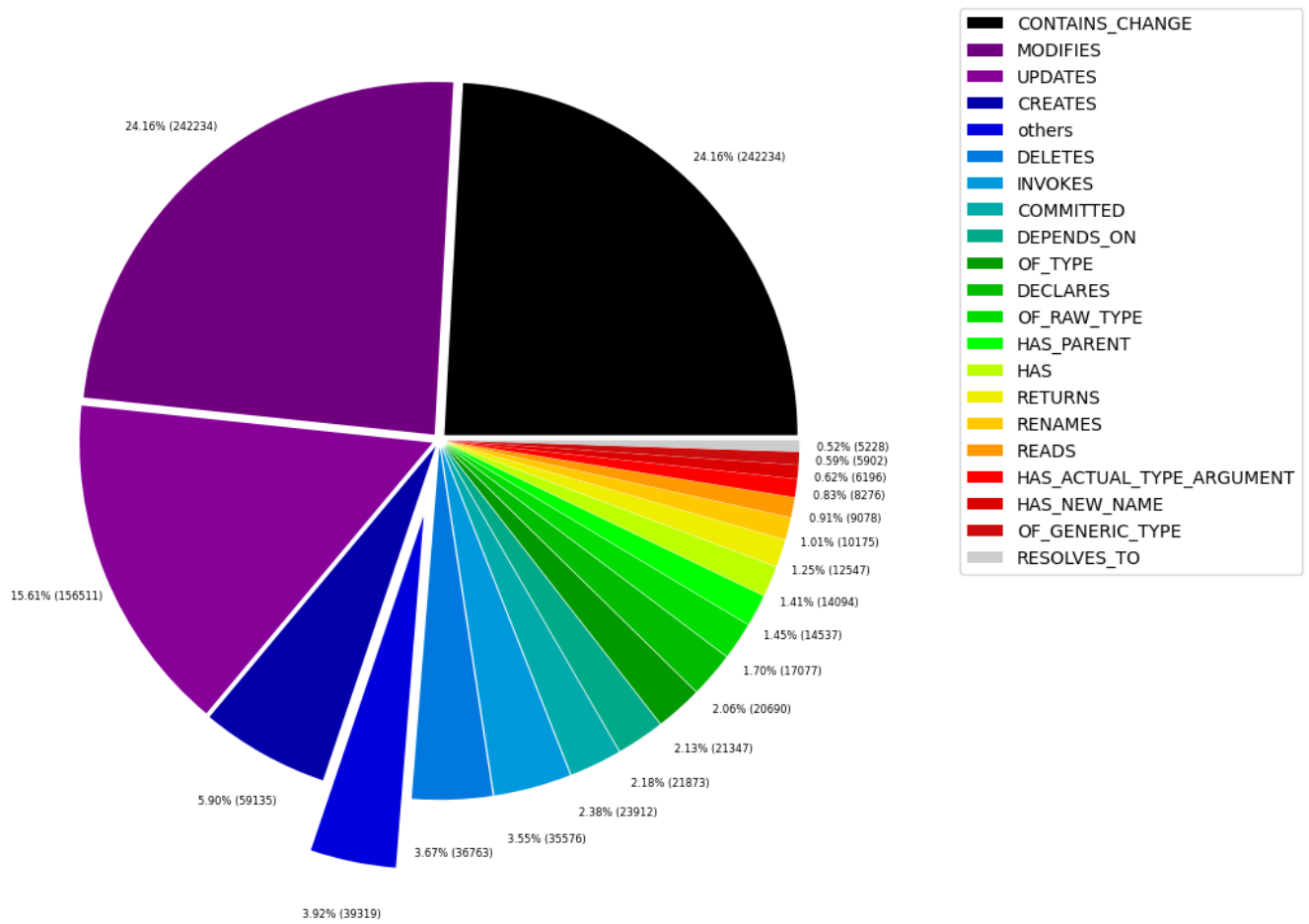


Table 2b - Lowest relationship count by type

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.

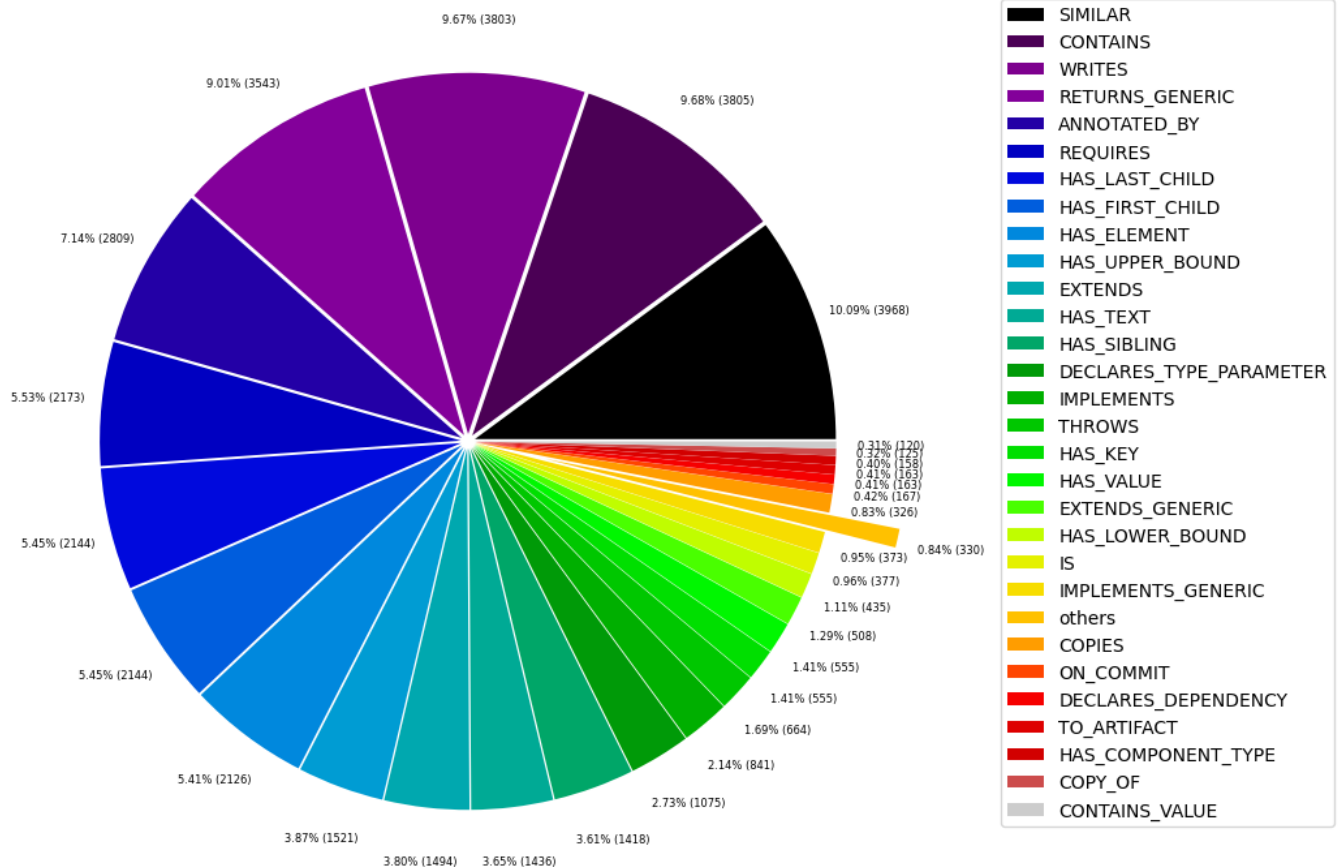
	relationshipType	nodesWithThatRelationshipType	nodesWithThatRelationshipTypePercent
0	HAS_PROPERTY	1	0.000100
1	THROWS_GENERIC	5	0.000499
2	EXCLUDES	5	0.000499
3	DESCRIBES	9	0.000898
4	HAS_ROOT_ELEMENT	10	0.000997
5	HAS_GOAL	16	0.001596
6	HAS_EXECUTION	16	0.001596
7	OF_NAMESPACE	18	0.001795
8	HAS_ATTRIBUTE	18	0.001795
9	INCLUDES_CONCEPT	19	0.001895
10	USES_PLUGIN	21	0.002094
11	REQUIRES_TYPE_PARAMETER	21	0.002094
12	IS_ARTIFACT	21	0.002094
13	HAS_CONFIGURATION	21	0.002094
14	REQUIRES_CONCEPT	28	0.002792
15	HAS_HEAD	29	0.002892
16	DECLARES_NAMESPACE	36	0.003590
17	HAS_DEFAULT	36	0.003590
18	CONTAINS_VALUE	120	0.011968
19	COPY_OF	125	0.012466
20	HAS_COMPONENT_TYPE	158	0.015757
21	TO_ARTIFACT	163	0.016256
22	DECLARES_DEPENDENCY	163	0.016256
23	ON_COMMIT	167	0.016655
24	COPIES	326	0.032512
25	IMPLEMENTS_GENERIC	373	0.037199
26	IS	377	0.037598
27	HAS_LOWER_BOUND	435	0.043383
28	EXTENDS_GENERIC	508	0.050663
29	HAS_VALUE	555	0.055350

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]	242234		11956
1	[Git, Change]	MODIFIES	[File, Git]	242234		242234
2	[Git, Change]	UPDATES	[File, Git]	156511		242234
3	[Git, Change]	CREATES	[File, Git]	59135		242234
4	[Git, Change]	DELETES	[File, Git]	36763		242234
5	[Java, ByteCode, Method, Member]	INVOKES	[Java, ByteCode, Method, Member]	21523		13082
6	[Git, Commit]	HAS_PARENT	[Git, Commit]	14528		11956
7	[Author, Git, Person]	COMMITTED	[Git, Commit]	11956		292
8	[Committer, Git, Person]	COMMITTED	[Git, Commit]	11956		247
9	[Git, Change]	RENAMES	[File, Git]	10175		242234
10	[Java, ByteCode, Method, Member]	HAS	[Java, ByteCode, Parameter]	8297		13082
11	[Java, ByteCode, Method, Member]	READS	[Java, ByteCode, Member, Field]	8100		13082
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		2039
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		2039
23	[Java, ByteCode, Method, Member]	RETURNS	[Type, File, Java, ByteCode, JavaType]	2088		13082
24	[Java, ByteCode, Constructor, Method, Member]	HAS	[Java, ByteCode, Parameter]	2023		2039
25	[Java, ByteCode, Parameter]	OF_GENERIC_TYPE	[Java, ByteCode, Bound]	2023		13000
26	[Java, ByteCode, Method, Member]	INVOKES	[Java, ByteCode, Constructor, Method, Member]	2007		13082
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		2039

Graph Density

```
total_number_of_nodes (vertices): 330744
total_number_of_relationships (edges): 1002704
-> total directed graph density: 9.166216518649877e-06
-> total directed graph density in percent: 0.0009166216518649877
```