

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]	249837	73.731290
1	[Java, ByteCode, Member, Method]	13201	3.895847
2	[Java, ByteCode, Parameter]	13029	3.845087
3	[Git, Commit]	12283	3.624929
4	[File, Git]	10736	3.168382
5	[Java, ByteCode, Bound, ParameterizedType]	7176	2.117764
6	[Java, ByteCode, Bound]	7118	2.100647
7	[Java, ByteCode, Member, Field]	3505	1.034387
8	[Java, ByteCode, Bound, WildcardType]	2908	0.858202
9	[Java, Value, ByteCode, Annotation]	2822	0.832822
10	[Xml, Element]	2144	0.632732
11	[Java, ByteCode, Member, Method, Constructor]	2052	0.605581
12	[Xml, Text]	1436	0.423789
13	[Java, ByteCode, Bound, TypeVariable]	1096	0.323449
14	[Java, ByteCode, Member, Method, Lambda]	942	0.278001
15	[Type, File, Java, ByteCode, ResolvedDuplicate...	899	0.265311
16	[Type, File, Java, ByteCode, Class]	864	0.254982
17	[Type, File, Java, ByteCode, JavaType]	748	0.220748
18	[Java, Value, ByteCode, Primitive]	652	0.192417
19	[Java, ByteCode, GenericDeclaration, Member, M...	569	0.167922
20	[Json, Key]	560	0.165266
21	[Value, Json, Scalar]	544	0.160544
22	[Type, File, Java, ByteCode, ExternalType]	396	0.116867
23	[Author, Git, Person]	298	0.087945
24	[Value, Array]	267	0.078796
25	[Committer, Git, Person]	252	0.074370
26	[Type, File, Java, ByteCode, Class, GenericDec...	236	0.069648
27	[Value, Property]	202	0.059614
28	[Type, File, Java, ByteCode, Interface]	188	0.055482
29	[Java, Value, ByteCode, Class]	172	0.050760

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)

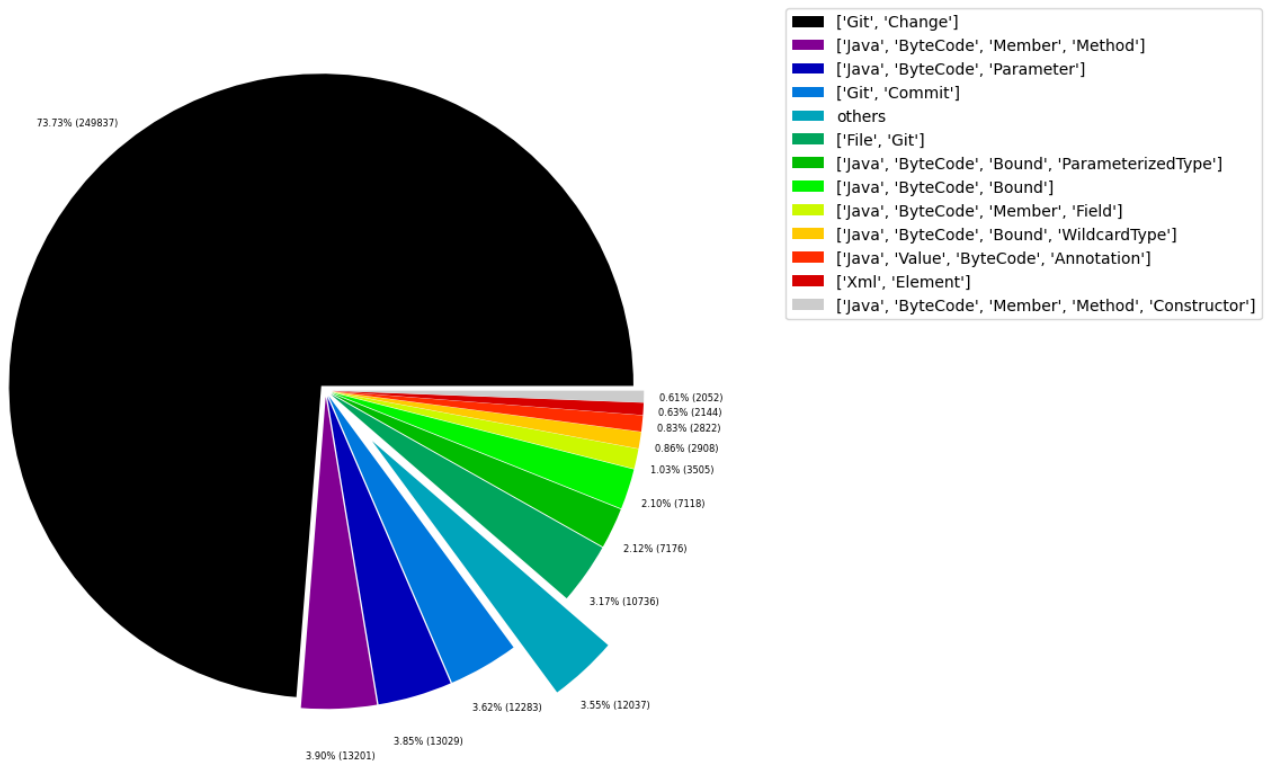


Table 1b - Lowest node count by label combination

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	0.000295
1	[Repository, File, Git]	1	0.000295
2	[File, Json]	2	0.000590
3	[File]	3	0.000885
4	[Java, ByteCode, GenericDeclaration, Member, M...	4	0.001180
5	[Maven, Exclusion]	5	0.001476
6	[Value, Array, Json]	6	0.001771
7	[Type, File, Java, ByteCode, Void]	9	0.002656
8	[File, Maven, Xml, Pom, Document]	9	0.002656
9	[Java, ManifestSection]	9	0.002656
10	[File, Java, Manifest]	9	0.002656
11	[Artifact, File, Jar, Archive, Zip, Java]	9	0.002656
12	[File, Java, ServiceLoader]	10	0.002951
13	[File, Java, Properties]	12	0.003541
14	[Maven, ExecutionGoal]	16	0.004722
15	[Maven, PluginExecution]	16	0.004722
16	[Xml, Attribute]	18	0.005312
17	[jQAssistant, Rule, Concept]	19	0.005607
18	[Maven, Plugin]	21	0.006197
19	[Maven, Configuration]	21	0.006197
20	[Type, File, Java, ByteCode, Enum]	28	0.008263
21	[Type, File, Java, ByteCode, PrimitiveType]	29	0.008558
22	[Git, Branch]	34	0.010034
23	[Xml, Namespace]	36	0.010624
24	[Type, File, Java, ByteCode, Annotation]	43	0.012690
25	[File, Directory]	44	0.012985
26	[Type, File, Java, ByteCode, GenericDeclaratio...	85	0.025085
27	[Artifact, Maven]	92	0.027151
28	[Type, File, Java, ByteCode, ExternalAnnotatio...	93	0.027446
29	[Value, ManifestEntry]	120	0.035414

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)

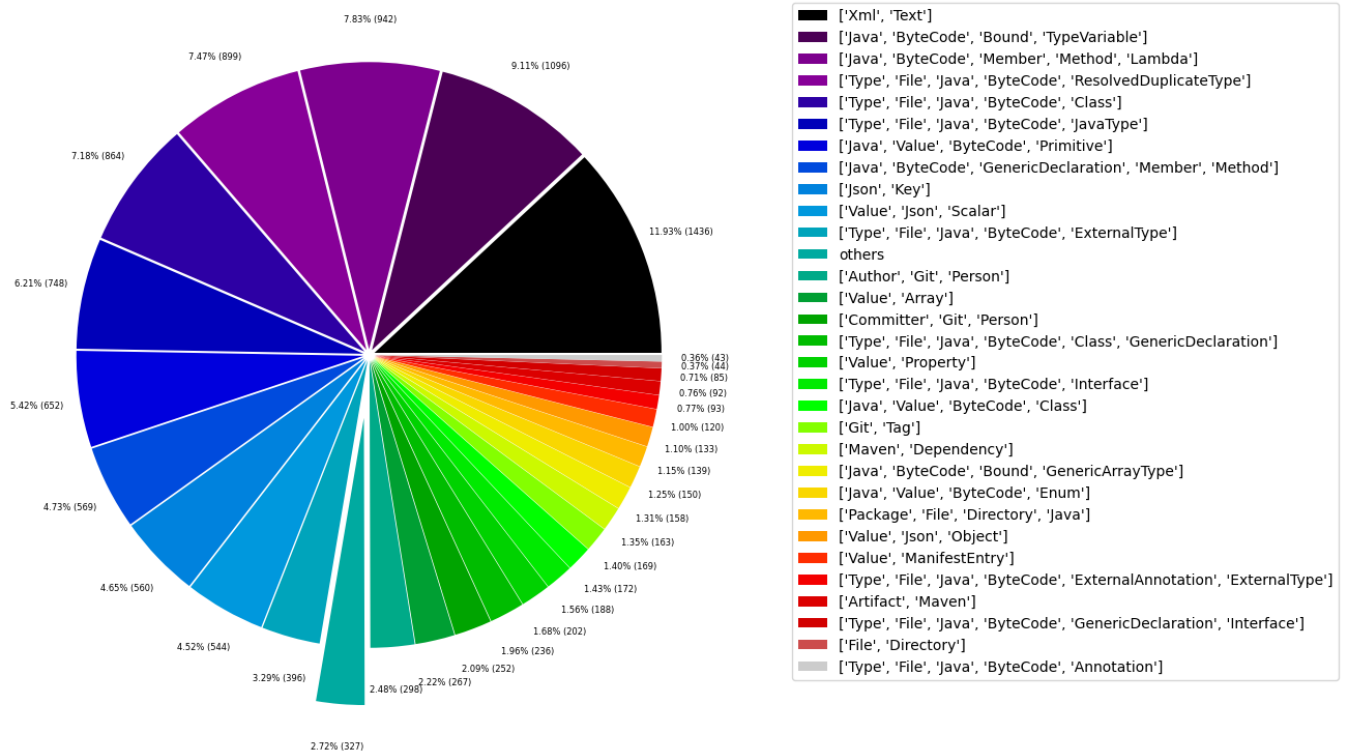


Table 1c - Highest node count by single label

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.

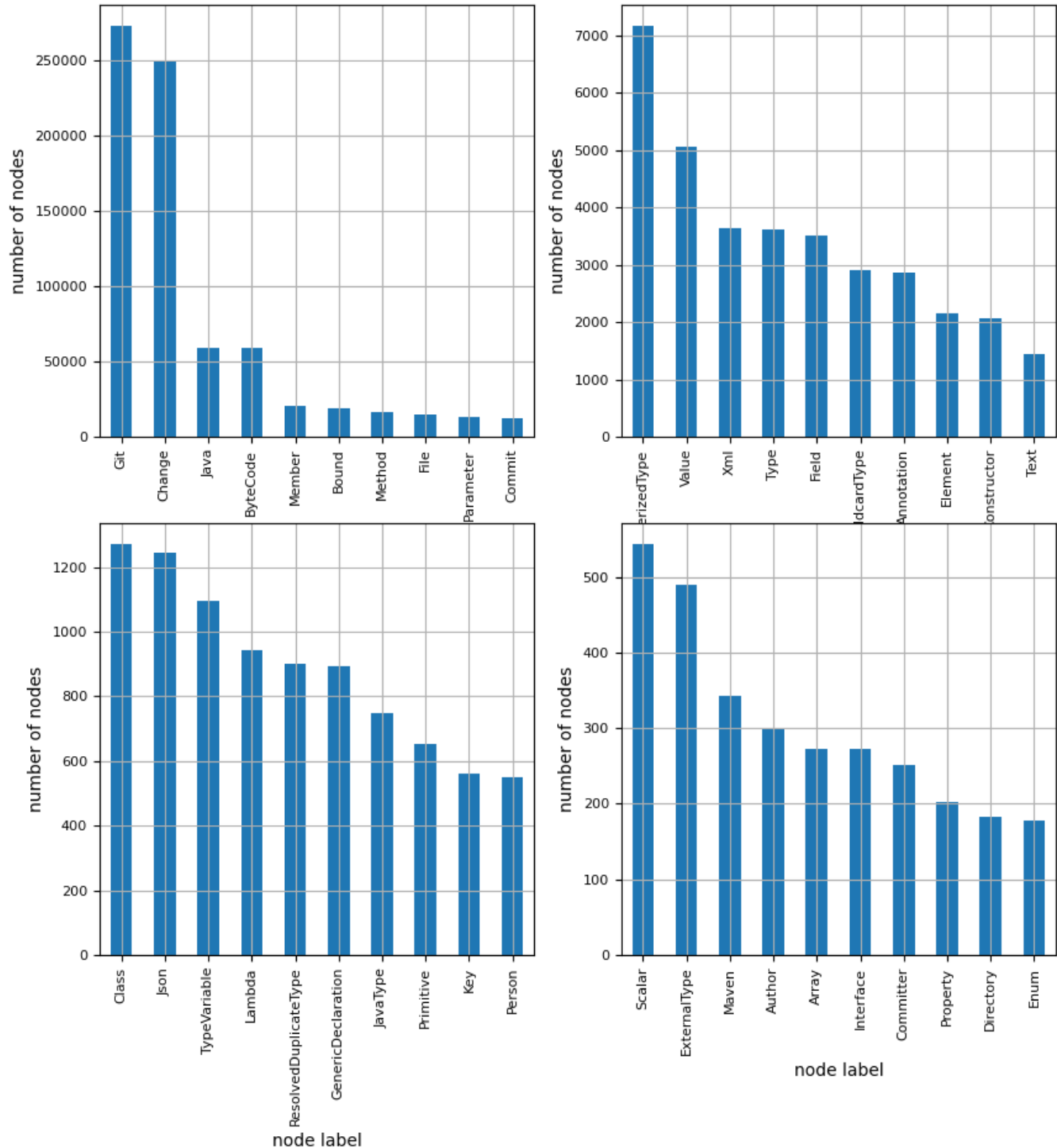
	nodeLabel	nodesWithThatLabel	nodesWithThatLabelPercent
0	Git	273610	80.747120
1	Change	249837	73.731290
2	Java	59360	17.518179
3	ByteCode	59172	17.462697
4	Member	20273	5.982919
5	Bound	18456	5.446690
6	Method	16768	4.948531
7	File	14592	4.306356
8	Parameter	13029	3.845087
9	Commit	12283	3.624929
10	ParameterizedType	7176	2.117764
11	Value	5068	1.495656
12	Xml	3643	1.075113
13	Type	3618	1.067735
14	Field	3505	1.034387
15	WildcardType	2908	0.858202
16	Annotation	2865	0.845512
17	Element	2144	0.632732
18	Constructor	2056	0.606762
19	Text	1436	0.423789
20	Class	1272	0.375390
21	Json	1245	0.367421
22	TypeVariable	1096	0.323449
23	Lambda	942	0.278001
24	ResolvedDuplicateType	899	0.265311
25	GenericDeclaration	894	0.263835
26	JavaType	748	0.220748
27	Primitive	652	0.192417
28	Key	560	0.165266
29	Person	550	0.162315
30	Scalar	544	0.160544
31	ExternalType	489	0.144312
32	Maven	343	0.101225
33	Author	298	0.087945
34	Array	273	0.080567
35	Interface	273	0.080567
36	Committer	252	0.074370
37	Property	202	0.059614
38	Directory	183	0.054007
39	Enum	178	0.052531

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: 1051897

	relationshipType	nodesWithThatRelationshipType	nodesWithThatRelationshipTypePercent
0	CONTAINS_CHANGE	249837	23.751090
1	MODIFIES	249837	23.751090
2	UPDATES	162807	15.477466
3	CREATES	60062	5.709875
4	DELETES	37341	3.549872
5	INVOKES	35701	3.393963
6	COMMITTED	24566	2.335400
7	DEPENDS_ON	21931	2.084900
8	OF_TYPE	21394	2.033849
9	DECLARES	20718	1.969584
10	OF_RAW_TYPE	17093	1.624969
11	HAS_PARENT	14918	1.418200
12	HAS	14125	1.342812
13	RETURNS	12578	1.195744
14	HAS_COMMIT	12283	1.167700
15	HAS_FILE	10736	1.020632
16	RENAMES	10373	0.986123
17	READS	9164	0.871188
18	HAS_ACTUAL_TYPE_ARGUMENT	8288	0.787910
19	HAS_NEW_NAME	6208	0.590172
20	OF_GENERIC_TYPE	5906	0.561462
21	RESOLVES_TO	5197	0.494060
22	SIMILAR	3977	0.378079
23	WRITES	3818	0.362963
24	CONTAINS	3814	0.362583
25	RETURNS_GENERIC	3545	0.337010
26	ANNOTATED_BY	2810	0.267136
27	REQUIRES	2174	0.206674
28	HAS_FIRST_CHILD	2144	0.203822
29	HAS_LAST_CHILD	2144	0.203822

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)

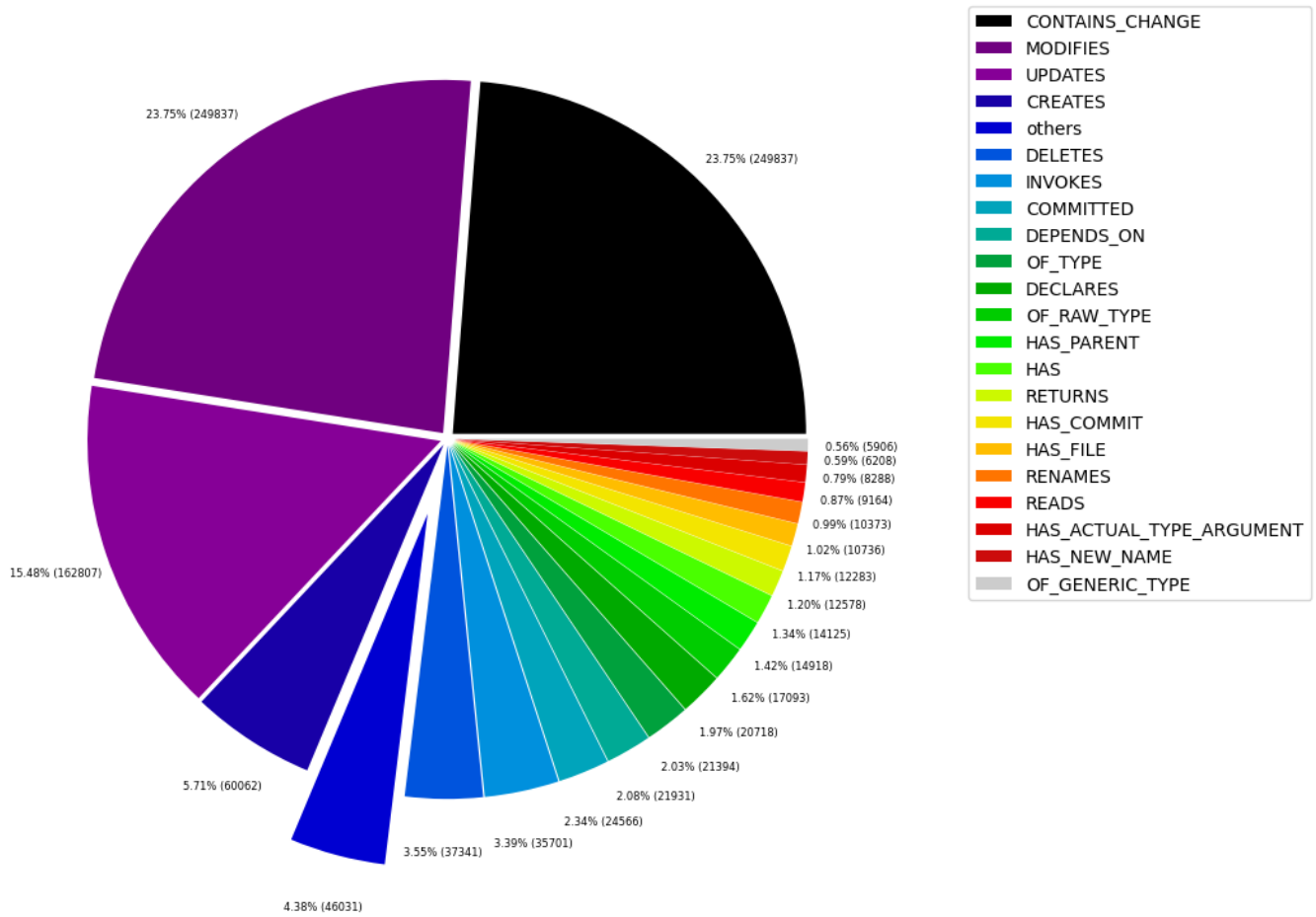


Table 2b - Lowest relationship count by type

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.

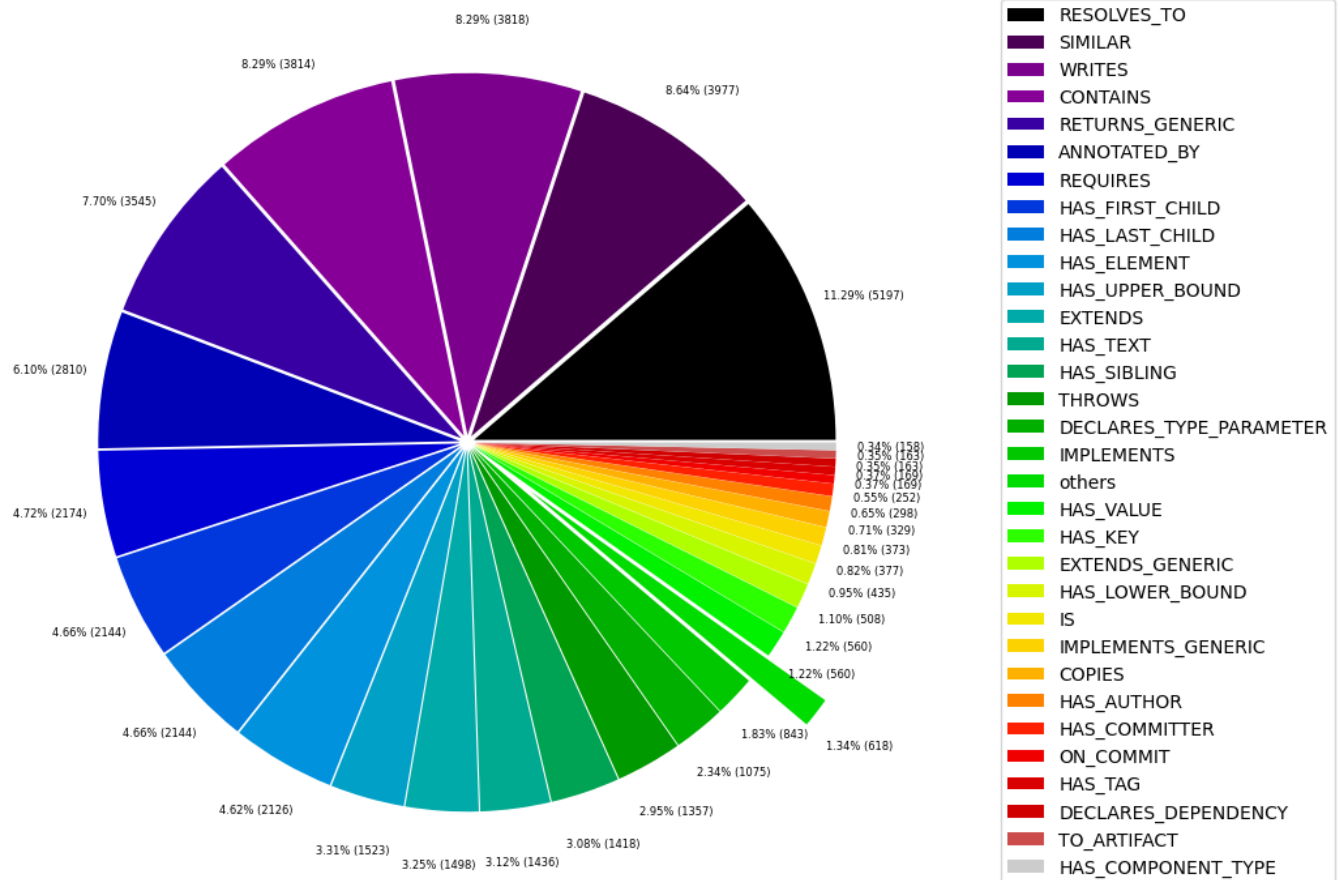
	relationshipType	nodesWithThatRelationshipType	nodesWithThatRelationshipTypePercent
0	HAS_PROPERTY	1	0.000095
1	THROWS_GENERIC	5	0.000475
2	EXCLUDES	5	0.000475
3	DESCRIBES	9	0.000856
4	HAS_ROOT_ELEMENT	11	0.001046
5	HAS_GOAL	16	0.001521
6	HAS_EXECUTION	16	0.001521
7	OF_NAMESPACE	18	0.001711
8	HAS_ATTRIBUTE	18	0.001711
9	INCLUDES_CONCEPT	19	0.001806
10	USES_PLUGIN	21	0.001996
11	REQUIRES_TYPE_PARAMETER	21	0.001996
12	IS_ARTIFACT	21	0.001996
13	HAS_CONFIGURATION	21	0.001996
14	REQUIRES_CONCEPT	28	0.002662
15	HAS_BRANCH	34	0.003232
16	HAS_HEAD	35	0.003327
17	DECLARES_NAMESPACE	36	0.003422
18	HAS_DEFAULT	36	0.003422
19	CONTAINS_VALUE	121	0.011503
20	COPY_OF	126	0.011978
21	HAS_COMPONENT_TYPE	158	0.015020
22	TO_ARTIFACT	163	0.015496
23	DECLARES_DEPENDENCY	163	0.015496
24	ON_COMMIT	169	0.016066
25	HAS_TAG	169	0.016066
26	HAS_COMMITTER	252	0.023957
27	HAS_AUTHOR	298	0.028330
28	COPIES	329	0.031277
29	IMPLEMENTS_GENERIC	373	0.035460

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]	249837		12283
1	[Git, Change]	MODIFIES	[File, Git]	249837		249837
2	[Git, Change]	UPDATES	[File, Git]	162807		249837
3	[Git, Change]	CREATES	[File, Git]	60062		249837
4	[Git, Change]	DELETES	[File, Git]	37341		249837
5	[Java, ByteCode, Member, Method]	INVOKES	[Java, ByteCode, Member, Method]	21818		13107
6	[Git, Commit]	HAS_PARENT	[Git, Commit]	14909		12283
7	[Repository, File, Git]	HAS_COMMIT	[Git, Commit]	12283		1
8	[Author, Git, Person]	COMMITTED	[Git, Commit]	12283		298
9	[Committer, Git, Person]	COMMITTED	[Git, Commit]	12283		252
10	[Repository, File, Git]	HAS_FILE	[File, Git]	10736		1
11	[Git, Change]	RENAMES	[File, Git]	10373		249837
12	[Java, ByteCode, Member, Method]	HAS	[Java, ByteCode, Parameter]	8362		13107
13	[Java, ByteCode, Member, Method]	READS	[Java, ByteCode, Member, Field]	8218		13107
14	[Java, ByteCode, Parameter]	OF_TYPE	[Type, File, Java, ByteCode, JavaType]	6371		13029
15	[File, Git]	HAS_NEW_NAME	[File, Git]	6208		10736
16	[Type, File, Java, ByteCode, Class]	DECLARES	[Java, ByteCode, Member, Method]	5104		814
17	[Type, File, Java, ByteCode, Class]	DEPENDS_ON	[Type, File, Java, ByteCode, JavaType]	4480		814
18	[Java, ByteCode, Bound]	OF_RAW_TYPE	[Type, File, Java, ByteCode, JavaType]	3570		7118
19	[Java, ByteCode, Bound, ParameterizedType]	OF_RAW_TYPE	[Type, File, Java, ByteCode, JavaType]	3053		7176
20	[Java, ByteCode, Bound, ParameterizedType]	HAS_ACTUAL_TYPE_ARGUMENT	[Java, ByteCode, Bound, WildcardType]	2908		7176
21	[Java, ByteCode, Parameter]	OF_GENERIC_TYPE	[Java, ByteCode, Bound, ParameterizedType]	2657		13029
22	[Java, ByteCode, Bound, ParameterizedType]	HAS_ACTUAL_TYPE_ARGUMENT	[Java, ByteCode, Bound, TypeVariable]	2454		7176
23	[Java, ByteCode, Member, Method, Constructor]	WRITES	[Java, ByteCode, Member, Field]	2438		2052
24	[Java, Value, ByteCode, Annotation]	OF_TYPE	[Type, File, Java, ByteCode, ExternalAnnotatio...	2341		2822
25	[Type, File, Java, ByteCode, Class]	DECLARES	[Java, ByteCode, Member, Field]	2203		814
26	[Xml, Element]	HAS_ELEMENT	[Xml, Element]	2126		2144
27	[Java, ByteCode, Member, Method, Constructor]	INVOKES	[Java, ByteCode, Member, Method, Constructor]	2123		2052
28	[Type, File, Java, ByteCode, Class, GenericDec...	DECLARES	[Java, ByteCode, Member, Method]	2116		231
29	[Java, ByteCode, Member, Method]	RETURNS	[Type, File, Java, ByteCode, JavaType]	2091		13107

Graph Density

```
total_number_of_nodes (vertices): 338848
total_number_of_relationships (edges): 1051897
-> total directed graph density: 9.161459054481308e-06
-> total directed graph density in percent: 0.0009161459054481308
```