

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]	246598	73.540218
1	[Java, ByteCode, Member, Method]	13203	3.937386
2	[Java, ByteCode, Parameter]	13016	3.881619
3	[Git, Commit]	12102	3.609047
4	[File, Git]	10690	3.187961
5	[Java, ByteCode, ParameterizedType, Bound]	7172	2.138827
6	[Java, ByteCode, Bound]	7113	2.121232
7	[Java, ByteCode, Member, Field]	3503	1.044661
8	[Java, ByteCode, Bound, WildcardType]	2908	0.867221
9	[Java, Value, ByteCode, Annotation]	2822	0.841574
10	[Xml, Element]	2144	0.639382
11	[Java, ByteCode, Member, Constructor, Method]	2040	0.608367
12	[Xml, Text]	1436	0.428243
13	[Java, ByteCode, Bound, TypeVariable]	1096	0.326848
14	[Java, ByteCode, Member, Method, Lambda]	938	0.279729
15	[Type, File, Java, ByteCode, ResolvedDuplicate...	900	0.268397
16	[Type, File, Java, ByteCode, Class]	861	0.256767
17	[Type, File, Java, ByteCode, JavaType]	748	0.223068
18	[Java, Value, ByteCode, Primitive]	650	0.193842
19	[Java, ByteCode, Member, Method, GenericDeclar...	569	0.169687
20	[Json, Key]	560	0.167003
21	[Value, Json, Scalar]	544	0.162231
22	[Type, File, Java, ByteCode, ExternalType]	396	0.118095
23	[Author, Git, Person]	293	0.087378
24	[Value, Array]	267	0.079624
25	[Committer, Git, Person]	248	0.073958
26	[Type, File, Java, ByteCode, Class, GenericDec...	236	0.070380
27	[Value, Property]	202	0.060240
28	[Type, File, Java, ByteCode, Interface]	187	0.055767
29	[Java, Value, ByteCode, Class]	172	0.051294

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)

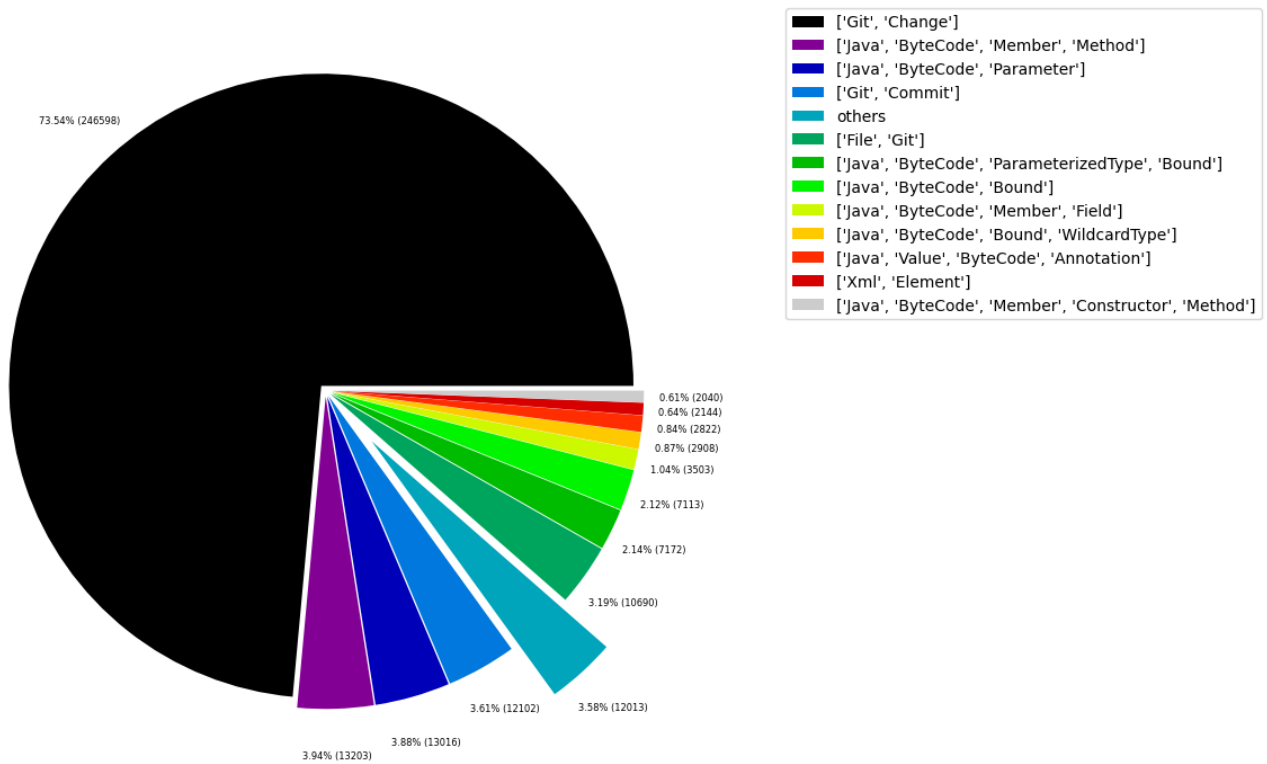


Table 1b - Lowest node count by label combination

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	0.000298
1	[Repository, File, Git]	1	0.000298
2	[File, Json]	2	0.000596
3	[File]	3	0.000895
4	[Java, ByteCode, Member, Constructor, Method, ...]	4	0.001193
5	[Maven, Exclusion]	5	0.001491
6	[Value, Json, Array]	6	0.001789
7	[File, Maven, Xml, Pom, Document]	9	0.002684
8	[Type, File, Java, ByteCode, Void]	9	0.002684
9	[Java, ManifestSection]	9	0.002684
10	[File, Java, Manifest]	9	0.002684
11	[Artifact, File, Jar, Archive, Zip, Java]	9	0.002684
12	[File, Java, ServiceLoader]	10	0.002982
13	[File, Java, Properties]	12	0.003579
14	[Maven, ExecutionGoal]	16	0.004772
15	[Maven, PluginExecution]	16	0.004772
16	[Xml, Attribute]	18	0.005368
17	[jQAssistant, Rule, Concept]	19	0.005666
18	[Maven, Plugin]	21	0.006263
19	[Maven, Configuration]	21	0.006263
20	[Type, File, Java, ByteCode, Enum]	28	0.008350
21	[Git, Branch]	29	0.008648
22	[Type, File, Java, ByteCode, PrimitiveType]	29	0.008648
23	[Xml, Namespace]	36	0.010736
24	[Type, File, Java, ByteCode, Annotation]	43	0.012823
25	[File, Directory]	44	0.013122
26	[Type, File, Java, ByteCode, GenericDeclaratio...	85	0.025349
27	[Artifact, Maven]	92	0.027436
28	[Type, File, Java, ByteCode, ExternalAnnotatio...	93	0.027734
29	[Value, ManifestEntry]	120	0.035786

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)

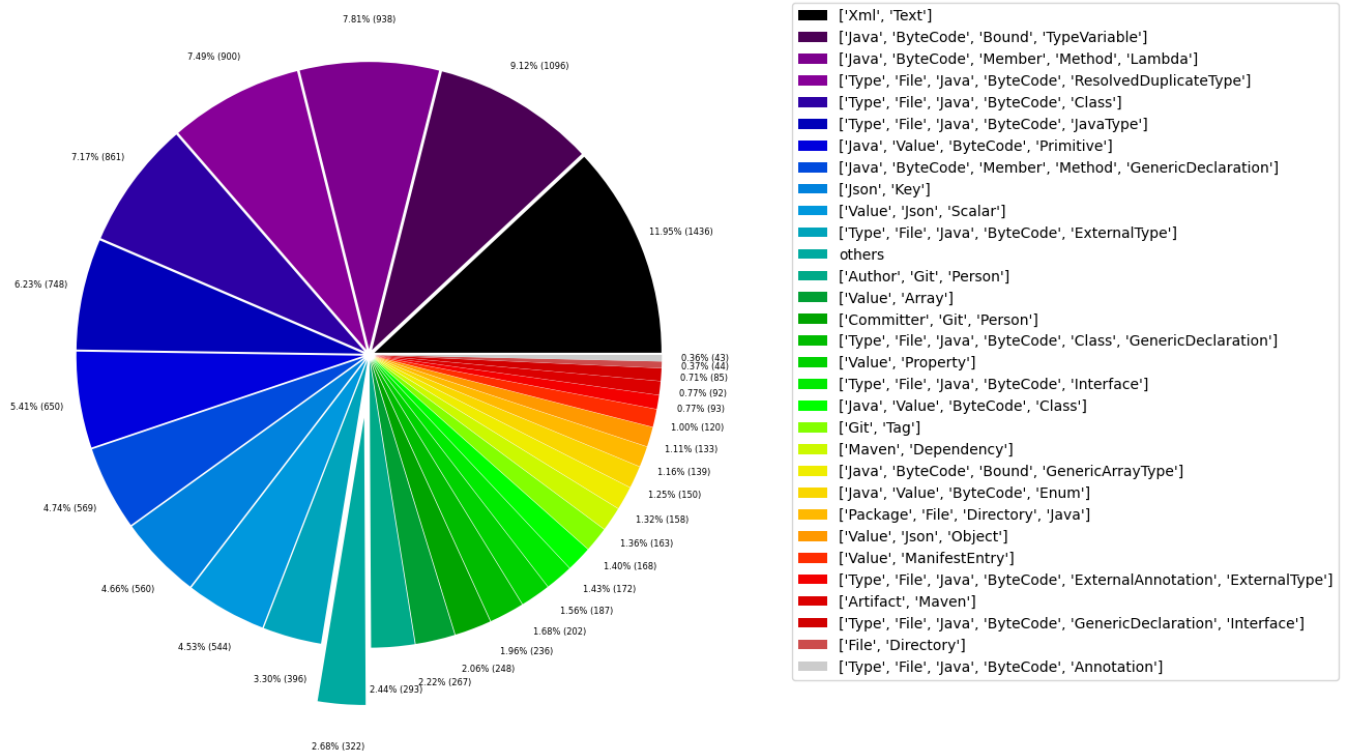


Table 1c - Highest node count by single label

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.

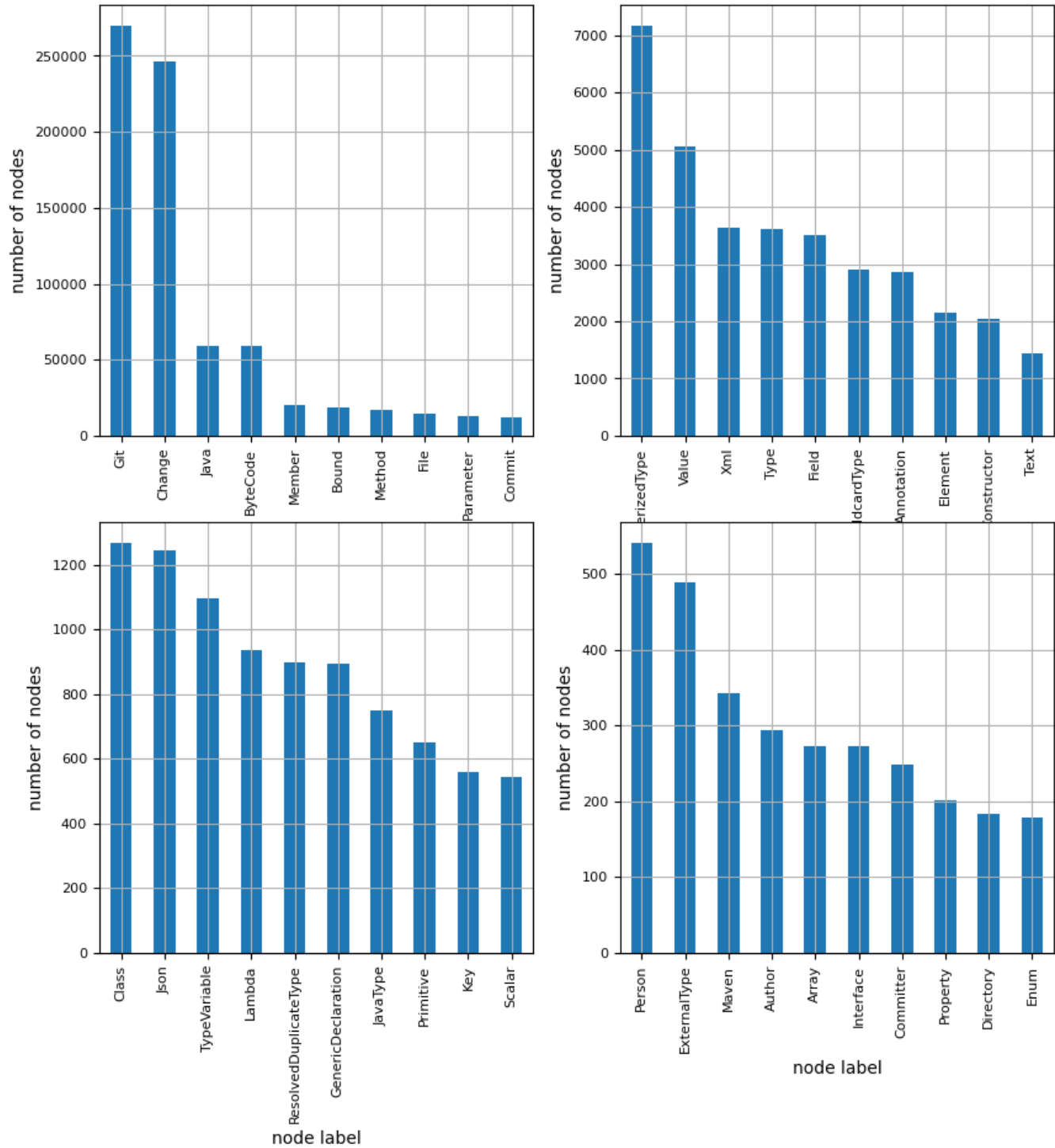
	nodeLabel	nodesWithThatLabel	nodesWithThatLabelPercent
0	Git	270129	80.557610
1	Change	246598	73.540218
2	Java	59317	17.689459
3	ByteCode	59129	17.633393
4	Member	20257	6.041023
5	Bound	18447	5.501247
6	Method	16754	4.996362
7	File	14543	4.336999
8	Parameter	13016	3.881619
9	Commit	12102	3.609047
10	ParameterizedType	7172	2.138827
11	Value	5066	1.510778
12	Xml	3643	1.086412
13	Type	3615	1.078062
14	Field	3503	1.044661
15	WildcardType	2908	0.867221
16	Annotation	2865	0.854398
17	Element	2144	0.639382
18	Constructor	2044	0.609560
19	Text	1436	0.428243
20	Class	1269	0.378440
21	Json	1245	0.371283
22	TypeVariable	1096	0.326848
23	Lambda	938	0.279729
24	ResolvedDuplicateType	900	0.268397
25	GenericDeclaration	894	0.266608
26	JavaType	748	0.223068
27	Primitive	650	0.193842
28	Key	560	0.167003
29	Scalar	544	0.162231
30	Person	541	0.161336
31	ExternalType	489	0.145829
32	Maven	343	0.102289
33	Author	293	0.087378
34	Array	273	0.081414
35	Interface	272	0.081116
36	Committer	248	0.073958
37	Property	202	0.060240
38	Directory	183	0.054574
39	Enum	178	0.053083

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: 1040245

	relationshipType	nodesWithThatRelationshipType	nodesWithThatRelationshipTypePercent
0	CONTAINS_CHANGE	246598	23.705762
1	MODIFIES	246598	23.705762
2	UPDATES	159927	15.373974
3	CREATES	59754	5.744224
4	DELETES	37207	3.576754
5	INVOKES	35677	3.429673
6	COMMITTED	24204	2.326760
7	DEPENDS_ON	21887	2.104024
8	OF_TYPE	21373	2.054612
9	DECLARES	20698	1.989724
10	OF_RAW_TYPE	17084	1.642305
11	HAS_PARENT	14710	1.414090
12	HAS	14110	1.356411
13	RETURNS	12562	1.207600
14	HAS_COMMIT	12102	1.163380
15	HAS_FILE	10690	1.027643
16	RENAMES	10290	0.989190
17	READS	9097	0.874506
18	HAS_ACTUAL_TYPE_ARGUMENT	8284	0.796351
19	HAS_NEW_NAME	6199	0.595917
20	OF_GENERIC_TYPE	5903	0.567462
21	RESOLVES_TO	5204	0.500267
22	SIMILAR	3968	0.381449
23	WRITES	3812	0.366452
24	CONTAINS	3806	0.365875
25	RETURNS_GENERIC	3543	0.340593
26	ANNOTATED_BY	2810	0.270129
27	REQUIRES	2175	0.209085
28	HAS_FIRST_CHILD	2144	0.206105
29	HAS_LAST_CHILD	2144	0.206105

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)

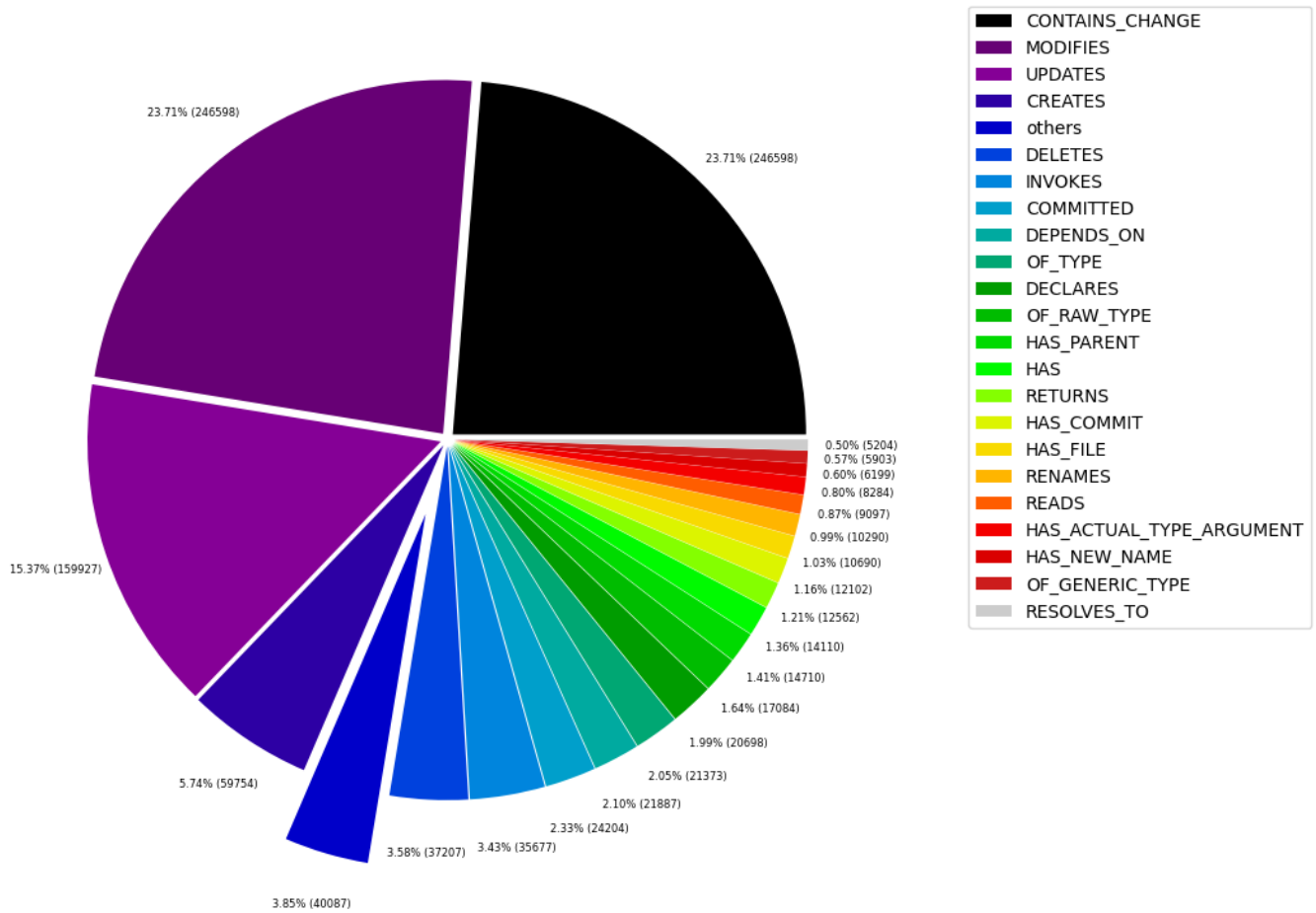


Table 2b - Lowest relationship count by type

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.

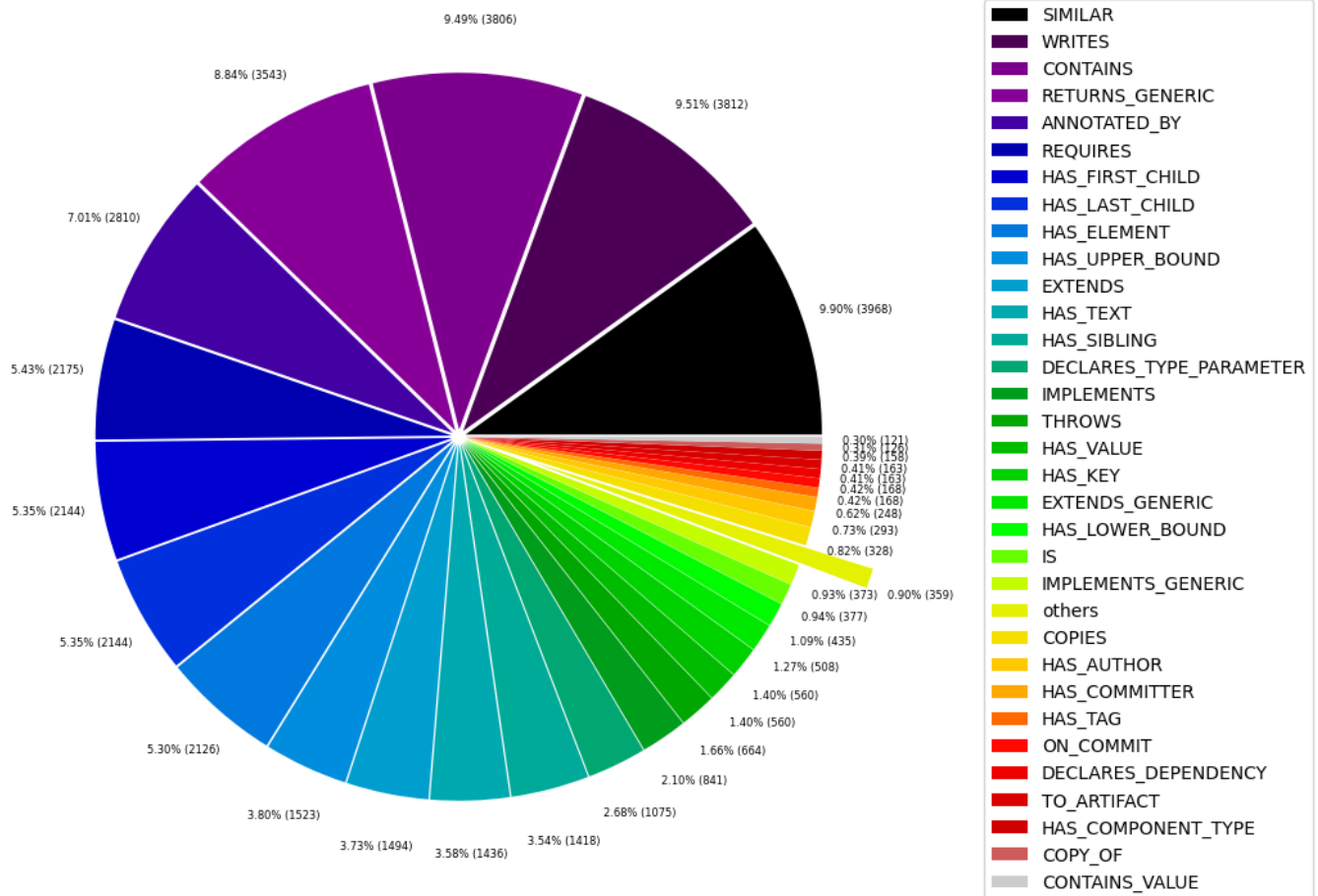
	relationshipType	nodesWithThatRelationshipType	nodesWithThatRelationshipTypePercent
0	HAS_PROPERTY	1	0.000096
1	THROWS_GENERIC	5	0.000481
2	EXCLUDES	5	0.000481
3	HAS_ROOT_ELEMENT	9	0.000865
4	DESCRIBES	9	0.000865
5	HAS_GOAL	16	0.001538
6	HAS_EXECUTION	16	0.001538
7	OF_NAMESPACE	18	0.001730
8	HAS_ATTRIBUTE	18	0.001730
9	INCLUDES_CONCEPT	19	0.001826
10	USES_PLUGIN	21	0.002019
11	REQUIRES_TYPE_PARAMETER	21	0.002019
12	IS_ARTIFACT	21	0.002019
13	HAS_CONFIGURATION	21	0.002019
14	REQUIRES_CONCEPT	28	0.002692
15	HAS_BRANCH	29	0.002788
16	HAS_HEAD	30	0.002884
17	DECLARES_NAMESPACE	36	0.003461
18	HAS_DEFAULT	36	0.003461
19	CONTAINS_VALUE	121	0.011632
20	COPY_OF	126	0.012113
21	HAS_COMPONENT_TYPE	158	0.015189
22	TO_ARTIFACT	163	0.015669
23	DECLARES_DEPENDENCY	163	0.015669
24	ON_COMMIT	168	0.016150
25	HAS_TAG	168	0.016150
26	HAS_COMMITTER	248	0.023841
27	HAS_AUTHOR	293	0.028166
28	COPIES	328	0.031531
29	IMPLEMENTS_GENERIC	373	0.035857

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]	246598		12102
1	[Git, Change]	MODIFIES	[File, Git]	246598		246598
2	[Git, Change]	UPDATES	[File, Git]	159927		246598
3	[Git, Change]	CREATES	[File, Git]	59754		246598
4	[Git, Change]	DELETES	[File, Git]	37207		246598
5	[Java, ByteCode, Member, Method]	INVOKES	[Java, ByteCode, Member, Method]	21558		13077
6	[Git, Commit]	HAS_PARENT	[Git, Commit]	14701		12102
7	[Repository, File, Git]	HAS_COMMIT	[Git, Commit]	12102		1
8	[Author, Git, Person]	COMMITTED	[Git, Commit]	12102		293
9	[Committer, Git, Person]	COMMITTED	[Git, Commit]	12102		248
10	[Repository, File, Git]	HAS_FILE	[File, Git]	10690		1
11	[Git, Change]	RENAMES	[File, Git]	10290		246598
12	[Java, ByteCode, Member, Method]	HAS	[Java, ByteCode, Parameter]	8320		13077
13	[Java, ByteCode, Member, Method]	READS	[Java, ByteCode, Member, Field]	8121		13077
14	[Java, ByteCode, Parameter]	OF_TYPE	[Type, File, Java, ByteCode, JavaType]	6368		13016
15	[File, Git]	HAS_NEW_NAME	[File, Git]	6199		10690
16	[Java, ByteCode, Bound]	OF_RAW_TYPE	[Type, File, Java, ByteCode, JavaType]	3570		7113
17	[Java, ByteCode, ParameterizedType, Bound]	OF_RAW_TYPE	[Type, File, Java, ByteCode, JavaType]	3049		7172
18	[Java, ByteCode, ParameterizedType, Bound]	HAS_ACTUAL_TYPE_ARGUMENT	[Java, ByteCode, Bound, WildcardType]	2908		7172
19	[Java, ByteCode, Parameter]	OF_GENERIC_TYPE	[Java, ByteCode, ParameterizedType, Bound]	2655		13016
20	[Java, ByteCode, ParameterizedType, Bound]	HAS_ACTUAL_TYPE_ARGUMENT	[Java, ByteCode, Bound, TypeVariable]	2454		7172
21	[Java, ByteCode, Member, Constructor, Method]	WRITES	[Java, ByteCode, Member, Field]	2432		2040
22	[Java, Value, ByteCode, Annotation]	OF_TYPE	[Type, File, Java, ByteCode, ExternalAnnotatio...	2341		2822
23	[Xml, Element]	HAS_ELEMENT	[Xml, Element]	2126		2144
24	[Java, ByteCode, Member, Constructor, Method]	INVOKES	[Java, ByteCode, Member, Constructor, Method]	2112		2040
25	[Java, ByteCode, Member, Method]	RETURNS	[Type, File, Java, ByteCode, JavaType]	2088		13077
26	[Java, ByteCode, Member, Method]	INVOKES	[Java, ByteCode, Member, Constructor, Method]	2028		13077
27	[Java, ByteCode, Member, Constructor, Method]	HAS	[Java, ByteCode, Parameter]	2023		2040
28	[Java, ByteCode, Parameter]	OF_GENERIC_TYPE	[Java, ByteCode, Bound]	2023		13016
29	[Java, ByteCode, Member, Method, Lambda]	INVOKES	[Java, ByteCode, Member, Method]	1879		938

Graph Density

```
total_number_of_nodes (vertices): 335324
total_number_of_relationships (edges): 1040245
-> total directed graph density: 9.251404198876919e-06
-> total directed graph density in percent: 0.0009251404198876919
```