

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]	258357	74.247985
1	[Java, ByteCode, Member, Method]	13284	3.817625
2	[Java, ByteCode, Parameter]	13029	3.744342
3	[Git, Commit]	12699	3.649505
4	[File, Git]	10809	3.106347
5	[Java, ByteCode, ParameterizedType, Bound]	7176	2.062276
6	[Java, ByteCode, Bound]	7118	2.045608
7	[Java, ByteCode, Member, Field]	3511	1.009010
8	[Java, ByteCode, Bound, WildcardType]	2908	0.835716
9	[Java, Value, ByteCode, Annotation]	2822	0.811001
10	[Xml, Element]	2144	0.616154
11	[Java, ByteCode, Member, Constructor, Method]	2068	0.594313
12	[Xml, Text]	1436	0.412685
13	[Java, ByteCode, Bound, TypeVariable]	1096	0.314974
14	[Java, ByteCode, Member, Method, Lambda]	942	0.270717
15	[Type, File, Java, ByteCode, ResolvedDuplicate...	877	0.252037
16	[Type, File, Java, ByteCode, Class]	810	0.232782
17	[Java, Value, ByteCode, Primitive]	652	0.187375
18	[Type, File, Java, ByteCode, JavaType]	644	0.185076
19	[Java, ByteCode, Member, Method, GenericDeclar...	569	0.163522
20	[Json, Key]	560	0.160936
21	[Value, Json, Scalar]	544	0.156338
22	[Type, File, Java, ByteCode, ExternalType]	380	0.109206
23	[Author, Git, Person]	298	0.085641
24	[Value, Array]	267	0.076732
25	[Committer, Git, Person]	252	0.072421
26	[Type, File, Java, ByteCode, Class, GenericDec...	236	0.067823
27	[Value, Property]	202	0.058052
28	[Type, File, Java, ByteCode, Interface]	188	0.054028
29	[Java, Value, ByteCode, Class]	172	0.049430

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)

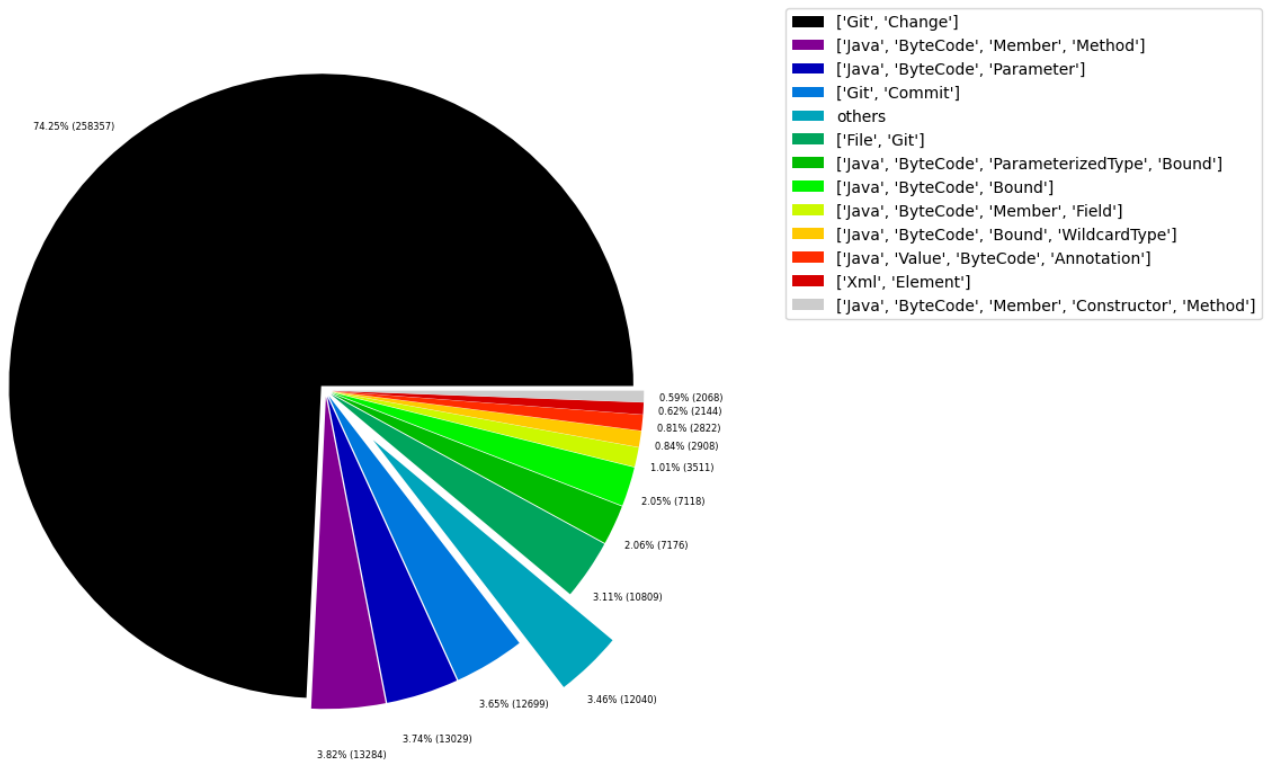


Table 1b - Lowest node count by label combination

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	0.000287
1	[Repository, File, Git]	1	0.000287
2	[File, Json]	2	0.000575
3	[File]	3	0.000862
4	[Java, ByteCode, Member, Constructor, Method, ...]	4	0.001150
5	[Maven, Exclusion]	5	0.001437
6	[Value, Json, Array]	6	0.001724
7	[File, Maven, Xml, Pom, Document]	9	0.002586
8	[Type, File, Java, ByteCode, Void]	9	0.002586
9	[Java, ManifestSection]	9	0.002586
10	[File, Java, Manifest]	9	0.002586
11	[Artifact, File, Jar, Archive, Zip, Java]	9	0.002586
12	[File, Java, ServiceLoader]	10	0.002874
13	[File, Java, Properties]	12	0.003449
14	[Maven, ExecutionGoal]	16	0.004598
15	[Maven, PluginExecution]	16	0.004598
16	[Type, File, Java, ByteCode, Throwable, Extern...	16	0.004598
17	[Xml, Attribute]	18	0.005173
18	[jQAssistant, Rule, Concept]	19	0.005460
19	[Maven, Plugin]	21	0.006035
20	[Maven, Configuration]	21	0.006035
21	[Type, File, Java, ByteCode, Throwable, Resolv...	22	0.006322
22	[Type, File, Java, ByteCode, Enum]	28	0.008047
23	[Type, File, Java, ByteCode, PrimitiveType]	29	0.008334
24	[Xml, Namespace]	36	0.010346
25	[Git, Branch]	37	0.010633
26	[Type, File, Java, ByteCode, Annotation]	43	0.012358
27	[File, Directory]	44	0.012645
28	[Type, File, Java, ByteCode, Class, Throwable]	54	0.015519
29	[Type, File, Java, ByteCode, GenericDeclaratio...	85	0.024428

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)

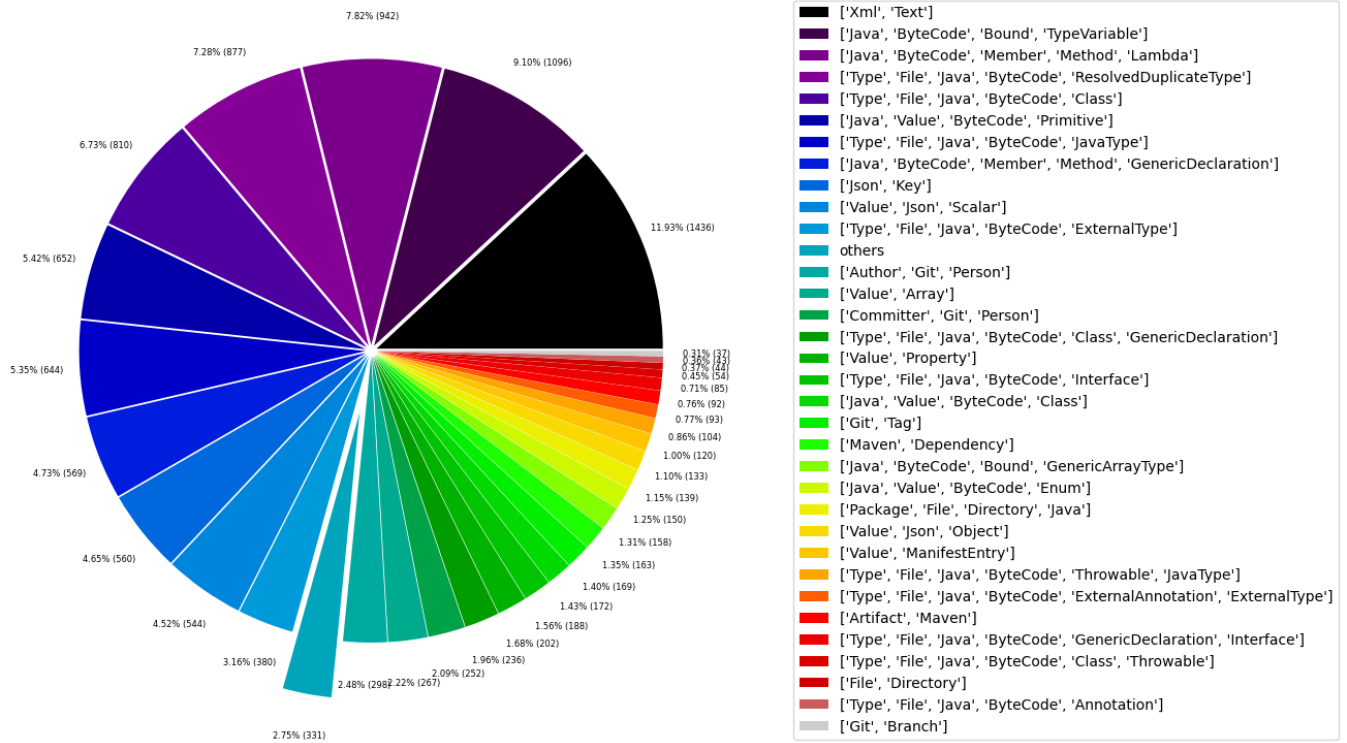


Table 1c - Highest node count by single label

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.

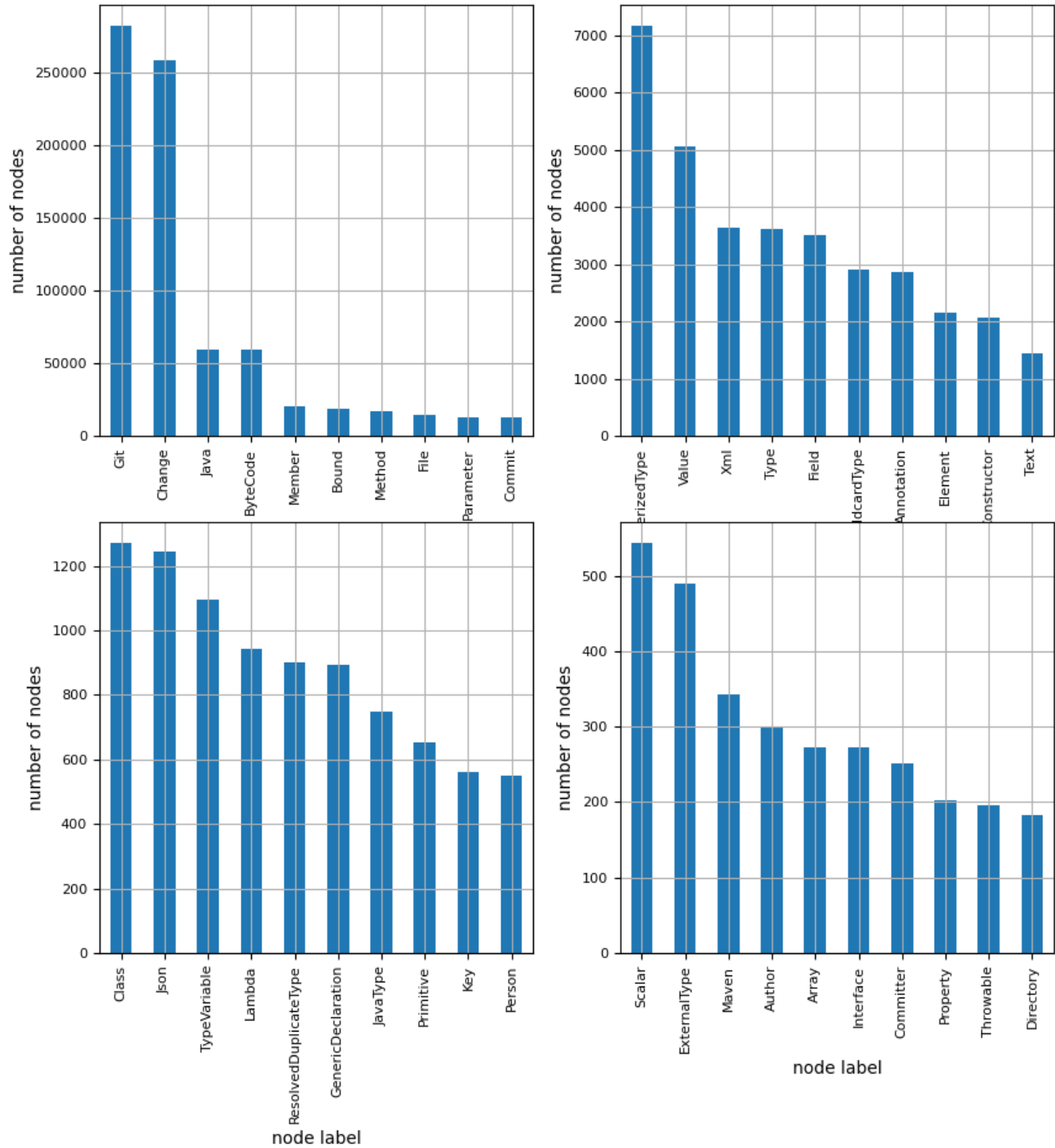
	nodeLabel	nodesWithThatLabel	nodesWithThatLabelPercent
0	Git	282622	81.221387
1	Change	258357	74.247985
2	Java	59465	17.089362
3	ByteCode	59277	17.035334
4	Member	20378	5.856336
5	Bound	18456	5.303982
6	Method	16867	4.847327
7	File	14665	4.214504
8	Parameter	13029	3.744342
9	Commit	12699	3.649505
10	ParameterizedType	7176	2.062276
11	Value	5068	1.456468
12	Xml	3643	1.046944
13	Type	3618	1.039760
14	Field	3511	1.009010
15	WildcardType	2908	0.835716
16	Annotation	2865	0.823359
17	Element	2144	0.616154
18	Constructor	2072	0.595462
19	Text	1436	0.412685
20	Class	1272	0.365554
21	Json	1245	0.357795
22	TypeVariable	1096	0.314974
23	Lambda	942	0.270717
24	ResolvedDuplicateType	899	0.258359
25	GenericDeclaration	894	0.256922
26	JavaType	748	0.214964
27	Primitive	652	0.187375
28	Key	560	0.160936
29	Person	550	0.158062
30	Scalar	544	0.156338
31	ExternalType	489	0.140531
32	Maven	343	0.098573
33	Author	298	0.085641
34	Array	273	0.078456
35	Interface	273	0.078456
36	Committer	252	0.072421
37	Property	202	0.058052
38	Throwable	196	0.056328
39	Directory	183	0.052591

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: 1080571

	relationshipType	nodesWithThatRelationshipType	nodesWithThatRelationshipTypePercent
0	CONTAINS_CHANGE	258357	23.909304
1	MODIFIES	258357	23.909304
2	UPDATES	169780	15.712063
3	CREATES	61161	5.660063
4	DELETES	37961	3.513050
5	INVOKES	36005	3.332035
6	COMMITTED	25398	2.350424
7	DEPENDS_ON	21931	2.029575
8	OF_TYPE	21394	1.979879
9	DECLARES	20823	1.927037
10	OF_RAW_TYPE	17093	1.581849
11	HAS_PARENT	15378	1.423136
12	HAS	14125	1.307179
13	HAS_COMMIT	12699	1.175212
14	RETURNS	12578	1.164014
15	HAS_FILE	10809	1.000304
16	RENAMES	10545	0.975873
17	READS	9166	0.848255
18	HAS_ACTUAL_TYPE_ARGUMENT	8288	0.767002
19	HAS_NEW_NAME	6237	0.577195
20	OF_GENERIC_TYPE	5906	0.546563
21	RESOLVES_TO	5253	0.486132
22	SIMILAR	3977	0.368046
23	WRITES	3818	0.353332
24	CONTAINS	3814	0.352962
25	RETURNS_GENERIC	3545	0.328067
26	ANNOTATED_BY	2810	0.260048
27	REQUIRES	2174	0.201190
28	HAS_FIRST_CHILD	2144	0.198414
29	HAS_LAST_CHILD	2144	0.198414

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)

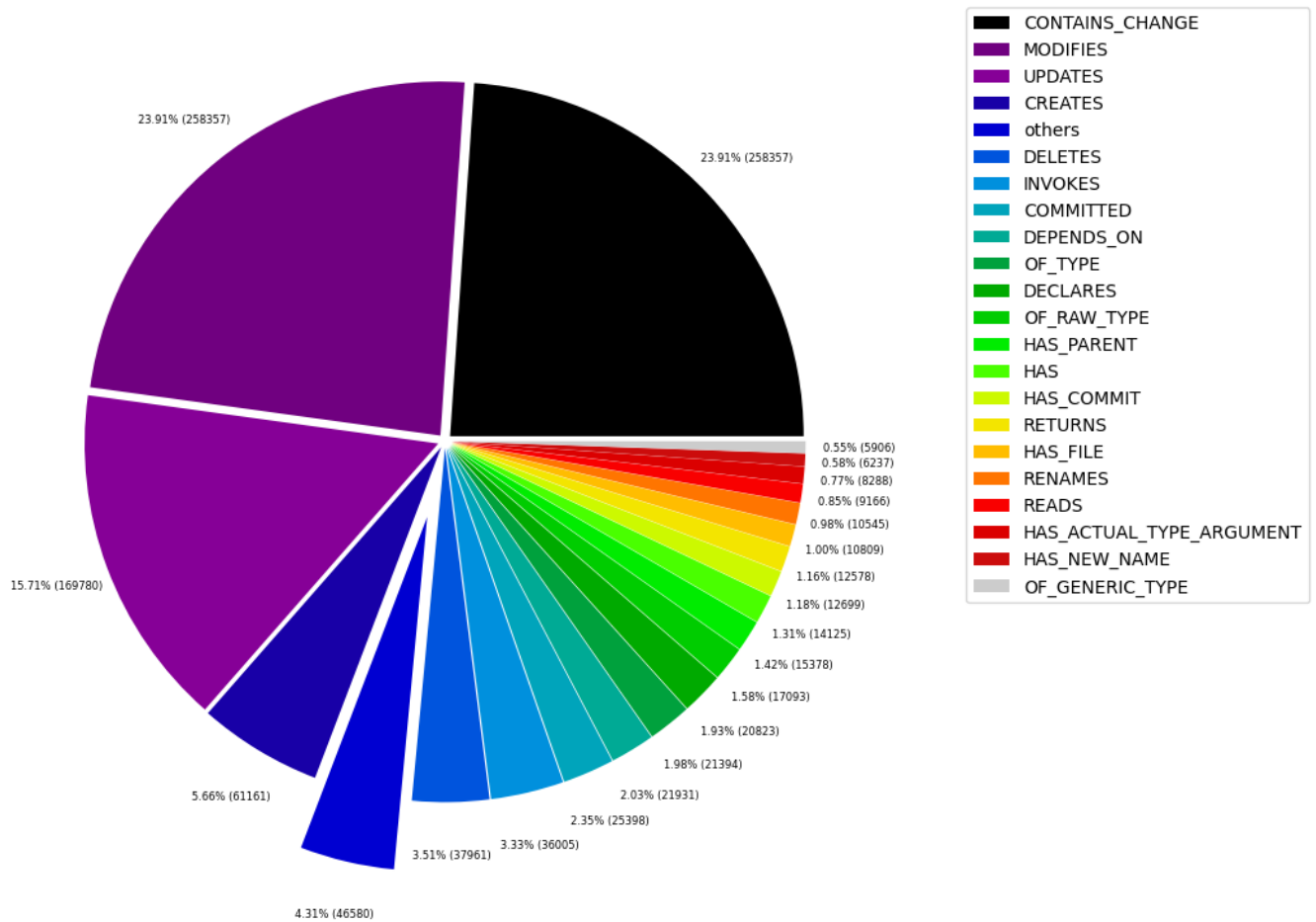


Table 2b - Lowest relationship count by type

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.

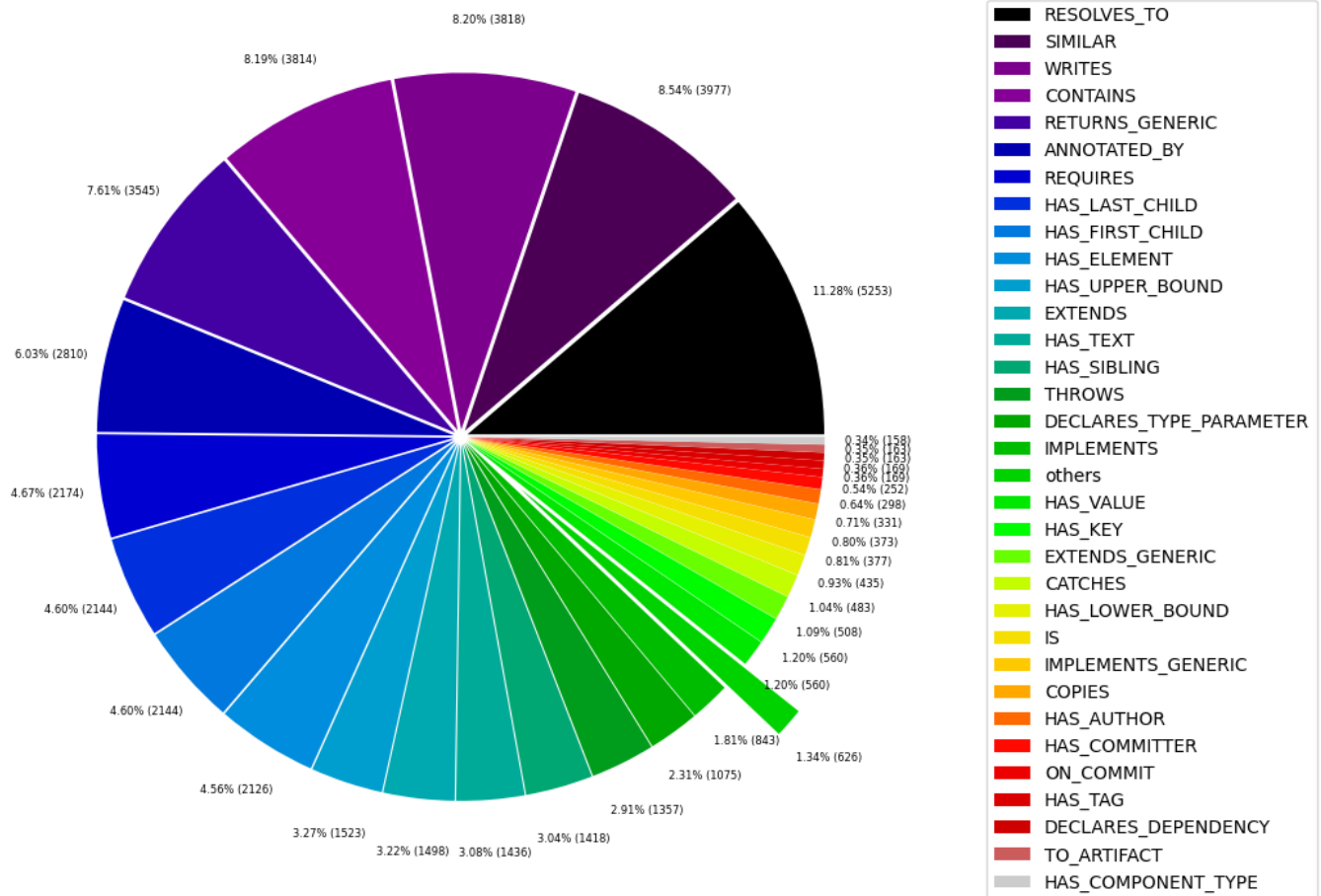
	relationshipType	nodesWithThatRelationshipType	nodesWithThatRelationshipTypePercent
0	HAS_PROPERTY	1	0.000093
1	THROWS_GENERIC	5	0.000463
2	EXCLUDES	5	0.000463
3	DESCRIBES	9	0.000833
4	HAS_ROOT_ELEMENT	13	0.001203
5	HAS_GOAL	16	0.001481
6	HAS_EXECUTION	16	0.001481
7	OF_NAMESPACE	18	0.001666
8	HAS_ATTRIBUTE	18	0.001666
9	INCLUDES_CONCEPT	19	0.001758
10	USES_PLUGIN	21	0.001943
11	IS_ARTIFACT	21	0.001943
12	HAS_CONFIGURATION	21	0.001943
13	REQUIRES_TYPE_PARAMETER	21	0.001943
14	REQUIRES_CONCEPT	28	0.002591
15	HAS_DEFAULT	36	0.003332
16	DECLARES_NAMESPACE	36	0.003332
17	HAS_BRANCH	37	0.003424
18	HAS_HEAD	38	0.003517
19	CONTAINS_VALUE	121	0.011198
20	COPY_OF	126	0.011661
21	HAS_COMPONENT_TYPE	158	0.014622
22	DECLARES_DEPENDENCY	163	0.015085
23	TO_ARTIFACT	163	0.015085
24	ON_COMMIT	169	0.015640
25	HAS_TAG	169	0.015640
26	HAS_COMMITTER	252	0.023321
27	HAS_AUTHOR	298	0.027578
28	COPIES	331	0.030632
29	IMPLEMENTS_GENERIC	373	0.034519

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, Change]	MODIFIES	[File, Git]	258357	258357	
1	[Git, Commit]	CONTAINS_CHANGE	[Git, Change]	258357	12699	
2	[Git, Change]	UPDATES	[File, Git]	169780	258357	
3	[Git, Change]	CREATES	[File, Git]	61161	258357	
4	[Git, Change]	DELETES	[File, Git]	37961	258357	
5	[Java, ByteCode, Member, Method]	INVOKES	[Java, ByteCode, Member, Method]	21955	13192	
6	[Git, Commit]	HAS_PARENT	[Git, Commit]	15369	12699	
7	[Repository, File, Git]	HAS_COMMIT	[Git, Commit]	12699	1	
8	[Author, Git, Person]	COMMITTED	[Git, Commit]	12699	298	
9	[Committer, Git, Person]	COMMITTED	[Git, Commit]	12699	252	
10	[Repository, File, Git]	HAS_FILE	[File, Git]	10809	1	
11	[Git, Change]	RENAMES	[File, Git]	10545	258357	
12	[Java, ByteCode, Member, Method]	HAS	[Java, ByteCode, Parameter]	8361	13192	
13	[Java, ByteCode, Member, Method]	READS	[Java, ByteCode, Member, Field]	8192	13192	
14	[File, Git]	HAS_NEW_NAME	[File, Git]	6237	10809	
15	[Java, ByteCode, Parameter]	OF_TYPE	[Type, File, Java, ByteCode, JavaType]	6079	13029	
16	[Type, File, Java, ByteCode, Class]	DECLARES	[Java, ByteCode, Member, Method]	5014	761	
17	[Type, File, Java, ByteCode, Class]	DEPENDS_ON	[Type, File, Java, ByteCode, JavaType]	3996	761	
18	[Java, ByteCode, Bound]	OF_RAW_TYPE	[Type, File, Java, ByteCode, JavaType]	3427	7118	
19	[Java, ByteCode, ParameterizedType, Bound]	OF_RAW_TYPE	[Type, File, Java, ByteCode, JavaType]	3053	7176	
20	[Java, ByteCode, ParameterizedType, Bound]	HAS_ACTUAL_TYPE_ARGUMENT	[Java, ByteCode, Bound, WildcardType]	2908	7176	
21	[Java, ByteCode, Parameter]	OF_GENERIC_TYPE	[Java, ByteCode, ParameterizedType, Bound]	2657	13029	
22	[Java, ByteCode, ParameterizedType, Bound]	HAS_ACTUAL_TYPE_ARGUMENT	[Java, ByteCode, Bound, TypeVariable]	2454	7176	
23	[Java, ByteCode, Member, Constructor, Method]	WRITES	[Java, ByteCode, Member, Field]	2438	2068	
24	[Java, Value, ByteCode, Annotation]	OF_TYPE	[Type, File, Java, ByteCode, ExternalAnnotatio...	2341	2822	
25	[Xml, Element]	HAS_ELEMENT	[Xml, Element]	2126	2144	
26	[Java, ByteCode, Member, Constructor, Method]	INVOKES	[Java, ByteCode, Member, Constructor, Method]	2123	2068	
27	[Type, File, Java, ByteCode, Class]	DECLARES	[Java, ByteCode, Member, Field]	2091	761	
28	[Java, ByteCode, Member, Method]	RETURNS	[Type, File, Java, ByteCode, JavaType]	2078	13192	
29	[Type, File, Java, ByteCode, Class, GenericDec...	DECLARES	[Java, ByteCode, Member, Method]	2070	229	

Graph Density

```
total_number_of_nodes (vertices): 347965
total_number_of_relationships (edges): 1080571
-> total directed graph density: 8.924490479801798e-06
-> total directed graph density in percent: 0.0008924490479801797
```