

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]	245572	73.476373
1	[Java, ByteCode, Member, Method]	13205	3.951002
2	[Java, ByteCode, Parameter]	13016	3.894452
3	[Git, Commit]	12038	3.601830
4	[File, Git]	10675	3.194014
5	[Java, ByteCode, ParameterizedType, Bound]	7172	2.145898
6	[Java, ByteCode, Bound]	7113	2.128245
7	[Java, ByteCode, Member, Field]	3502	1.047816
8	[Java, ByteCode, Bound, WildcardType]	2908	0.870088
9	[Java, Value, ByteCode, Annotation]	2822	0.844357
10	[Xml, Element]	2144	0.641496
11	[Java, ByteCode, Member, Constructor, Method]	2041	0.610677
12	[Xml, Text]	1436	0.429658
13	[Java, ByteCode, Bound, TypeVariable]	1096	0.327929
14	[Java, ByteCode, Member, Method, Lambda]	938	0.280654
15	[Type, File, Java, ByteCode, ResolvedDuplicate...	900	0.269285
16	[Type, File, Java, ByteCode, Class]	861	0.257616
17	[Type, File, Java, ByteCode, JavaType]	748	0.223805
18	[Java, Value, ByteCode, Primitive]	650	0.194483
19	[Java, ByteCode, Member, Method, GenericDeclar...	569	0.170248
20	[Json, Key]	560	0.167555
21	[Value, Json, Scalar]	544	0.162768
22	[Type, File, Java, ByteCode, ExternalType]	396	0.118485
23	[Author, Git, Person]	293	0.087667
24	[Value, Array]	267	0.079888
25	[Committer, Git, Person]	248	0.074203
26	[Type, File, Java, ByteCode, Class, GenericDec...	236	0.070612
27	[Value, Property]	202	0.060439
28	[Type, File, Java, ByteCode, Interface]	187	0.055951
29	[Java, Value, ByteCode, Class]	172	0.051463

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)

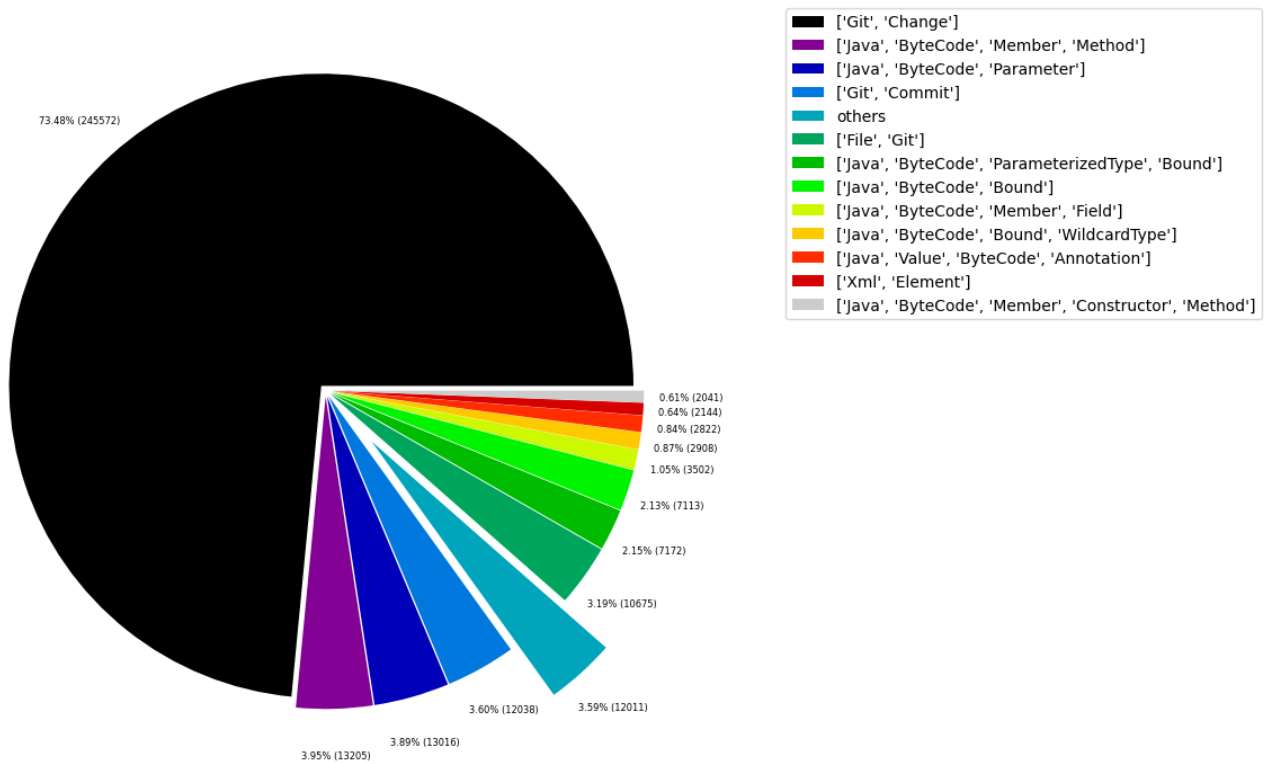


Table 1b - Lowest node count by label combination

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	0.000299
1	[Repository, File, Git]	1	0.000299
2	[File, Json]	2	0.000598
3	[File]	3	0.000898
4	[Java, ByteCode, Member, Constructor, Method, ...]	4	0.001197
5	[Maven, Exclusion]	5	0.001496
6	[Value, Json, Array]	6	0.001795
7	[File, Maven, Xml, Pom, Document]	9	0.002693
8	[Type, File, Java, ByteCode, Void]	9	0.002693
9	[Java, ManifestSection]	9	0.002693
10	[File, Java, Manifest]	9	0.002693
11	[Artifact, File, Jar, Archive, Zip, Java]	9	0.002693
12	[File, Java, ServiceLoader]	10	0.002992
13	[File, Java, Properties]	12	0.003590
14	[Maven, ExecutionGoal]	16	0.004787
15	[Maven, PluginExecution]	16	0.004787
16	[Xml, Attribute]	18	0.005386
17	[jQAssistant, Rule, Concept]	19	0.005685
18	[Maven, Plugin]	21	0.006283
19	[Maven, Configuration]	21	0.006283
20	[Git, Branch]	27	0.008079
21	[Type, File, Java, ByteCode, Enum]	28	0.008378
22	[Type, File, Java, ByteCode, PrimitiveType]	29	0.008677
23	[Xml, Namespace]	36	0.010771
24	[Type, File, Java, ByteCode, Annotation]	43	0.012866
25	[File, Directory]	44	0.013165
26	[Type, File, Java, ByteCode, GenericDeclaratio...	85	0.025432
27	[Artifact, Maven]	92	0.027527
28	[Type, File, Java, ByteCode, ExternalAnnotatio...	93	0.027826
29	[Value, ManifestEntry]	120	0.035905

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)

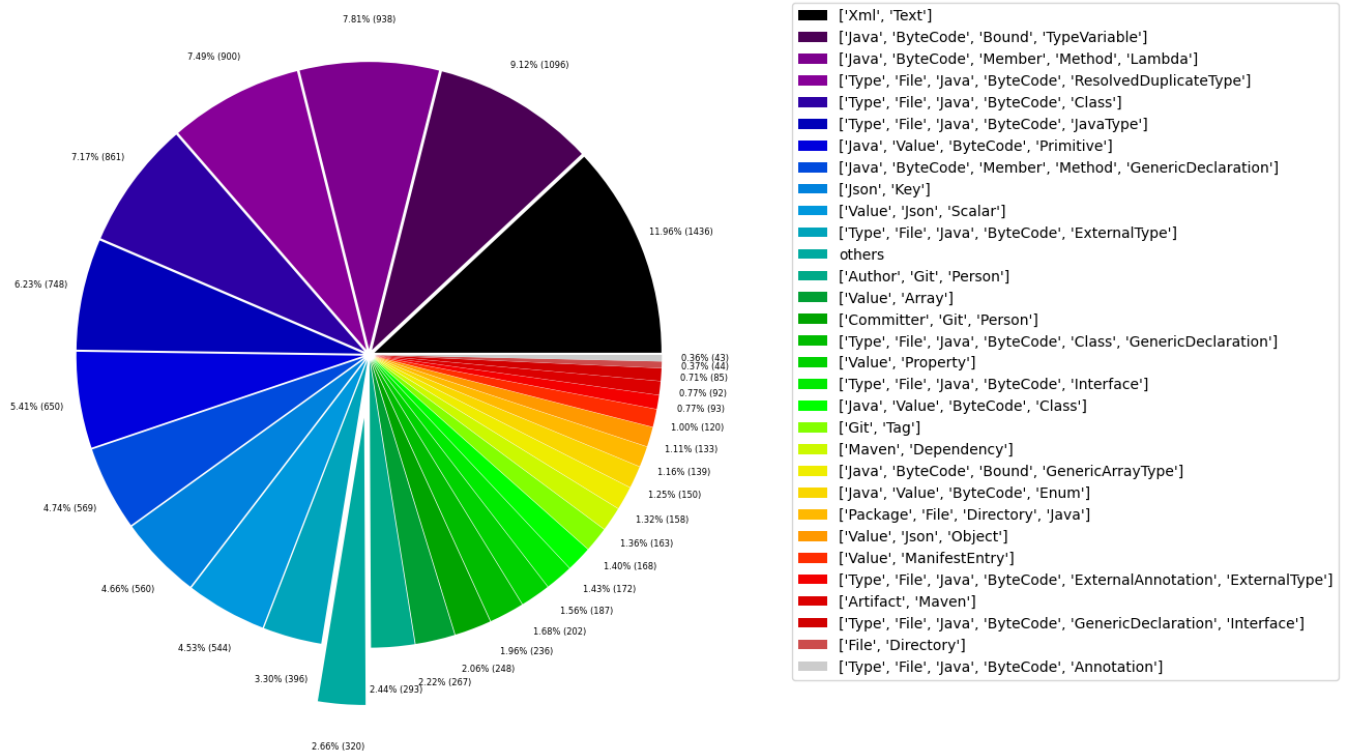


Table 1c - Highest node count by single label

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.

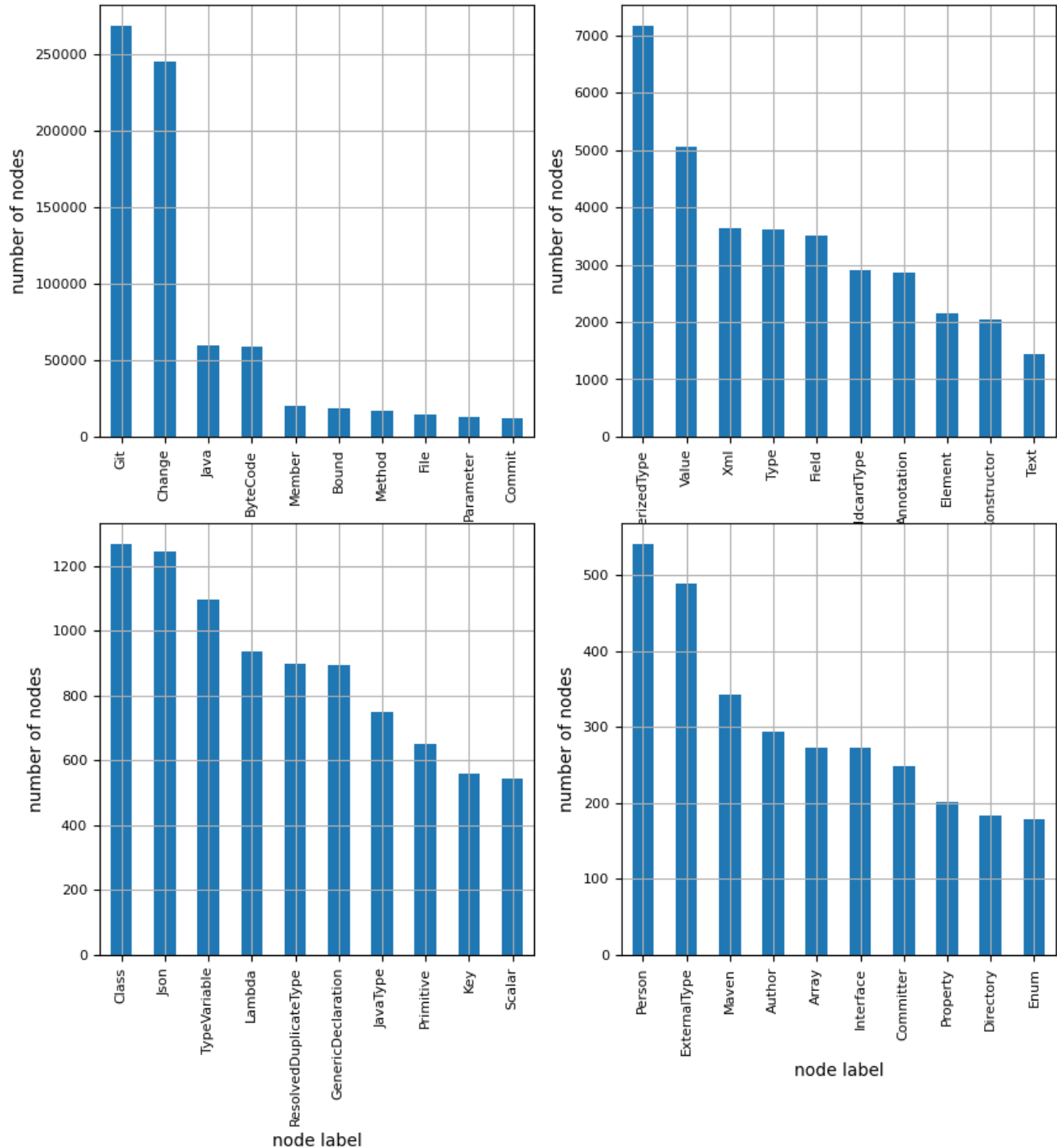
	nodeLabel	nodesWithThatLabel	nodesWithThatLabelPercent
0	Git	269022	80.492731
1	Change	245572	73.476373
2	Java	59319	17.748542
3	ByteCode	59131	17.692292
4	Member	20259	6.061594
5	Bound	18447	5.519435
6	Method	16757	5.013778
7	File	14528	4.346850
8	Parameter	13016	3.894452
9	Commit	12038	3.601830
10	ParameterizedType	7172	2.145898
11	Value	5066	1.515773
12	Xml	3643	1.090004
13	Type	3615	1.081626
14	Field	3502	1.047816
15	WildcardType	2908	0.870088
16	Annotation	2865	0.857222
17	Element	2144	0.641496
18	Constructor	2045	0.611874
19	Text	1436	0.429658
20	Class	1269	0.379691
21	Json	1245	0.372510
22	TypeVariable	1096	0.327929
23	Lambda	938	0.280654
24	ResolvedDuplicateType	900	0.269285
25	GenericDeclaration	894	0.267489
26	JavaType	748	0.223805
27	Primitive	650	0.194483
28	Key	560	0.167555
29	Scalar	544	0.162768
30	Person	541	0.161870
31	ExternalType	489	0.146311
32	Maven	343	0.102627
33	Author	293	0.087667
34	Array	273	0.081683
35	Interface	272	0.081384
36	Committer	248	0.074203
37	Property	202	0.060439
38	Directory	183	0.054755
39	Enum	178	0.053258

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: 1036881

	relationshipType	nodesWithThatRelationshipType	nodesWithThatRelationshipTypePercent
0	CONTAINS_CHANGE	245572	23.683721
1	MODIFIES	245572	23.683721
2	UPDATES	158949	15.329532
3	CREATES	59718	5.759388
4	DELETES	37194	3.587104
5	INVOKES	35676	3.440703
6	COMMITTED	24076	2.321964
7	DEPENDS_ON	21887	2.110850
8	OF_TYPE	21373	2.061278
9	DECLARES	20700	1.996372
10	OF_RAW_TYPE	17084	1.647634
11	HAS_PARENT	14638	1.411734
12	HAS	14110	1.360812
13	RETURNS	12562	1.211518
14	HAS_COMMIT	12038	1.160982
15	HAS_FILE	10675	1.029530
16	RENAMES	10289	0.992303
17	READS	9097	0.877343
18	HAS_ACTUAL_TYPE_ARGUMENT	8284	0.798934
19	HAS_NEW_NAME	6198	0.597754
20	OF_GENERIC_TYPE	5903	0.569304
21	RESOLVES_TO	5203	0.501793
22	SIMILAR	3968	0.382686
23	WRITES	3812	0.367641
24	CONTAINS	3806	0.367062
25	RETURNS_GENERIC	3543	0.341698
26	ANNOTATED_BY	2810	0.271005
27	REQUIRES	2175	0.209764
28	HAS_FIRST_CHILD	2144	0.206774
29	HAS_LAST_CHILD	2144	0.206774

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)

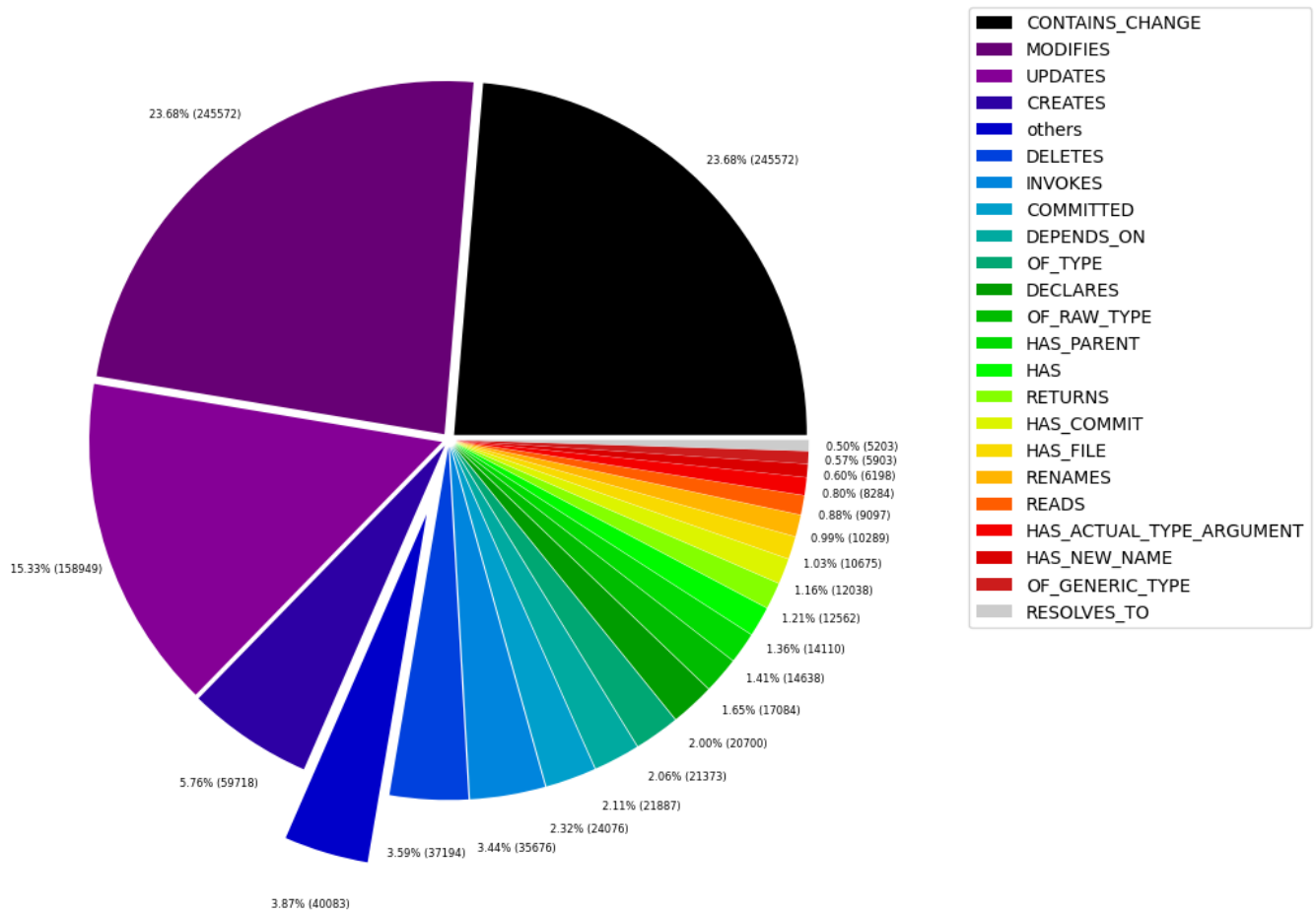


Table 2b - Lowest relationship count by type

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.

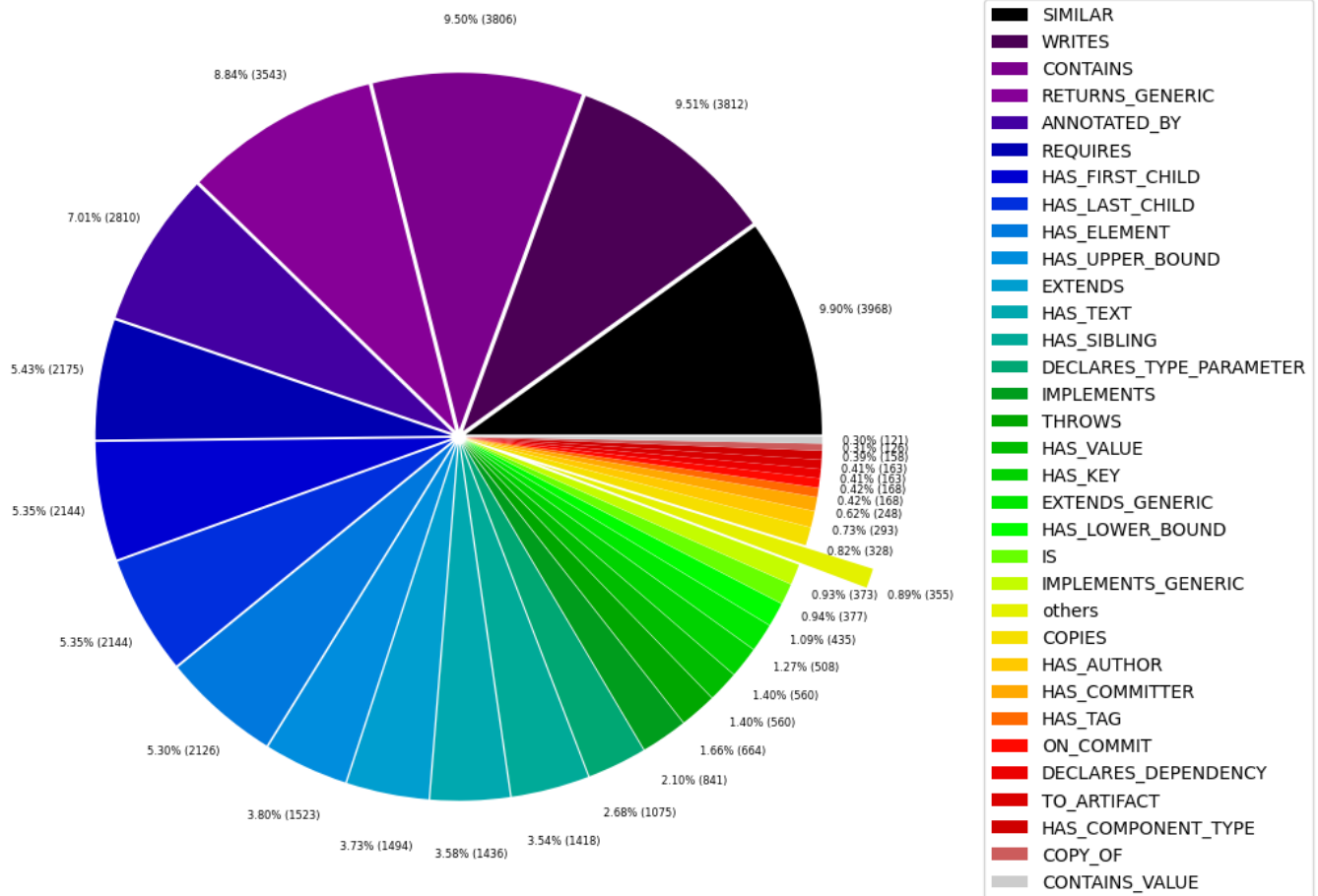
	relationshipType	nodesWithThatRelationshipType	nodesWithThatRelationshipTypePercent
0	HAS_PROPERTY	1	0.000096
1	THROWS_GENERIC	5	0.000482
2	EXCLUDES	5	0.000482
3	HAS_ROOT_ELEMENT	9	0.000868
4	DESCRIBES	9	0.000868
5	HAS_GOAL	16	0.001543
6	HAS_EXECUTION	16	0.001543
7	OF_NAMESPACE	18	0.001736
8	HAS_ATTRIBUTE	18	0.001736
9	INCLUDES_CONCEPT	19	0.001832
10	USES_PLUGIN	21	0.002025
11	REQUIRES_TYPE_PARAMETER	21	0.002025
12	IS_ARTIFACT	21	0.002025
13	HAS_CONFIGURATION	21	0.002025
14	HAS_BRANCH	27	0.002604
15	REQUIRES_CONCEPT	28	0.002700
16	HAS_HEAD	28	0.002700
17	DECLARES_NAMESPACE	36	0.003472
18	HAS_DEFAULT	36	0.003472
19	CONTAINS_VALUE	121	0.011670
20	COPY_OF	126	0.012152
21	HAS_COMPONENT_TYPE	158	0.015238
22	TO_ARTIFACT	163	0.015720
23	DECLARES_DEPENDENCY	163	0.015720
24	ON_COMMIT	168	0.016202
25	HAS_TAG	168	0.016202
26	HAS_COMMITTER	248	0.023918
27	HAS_AUTHOR	293	0.028258
28	COPIES	328	0.031633
29	IMPLEMENTS_GENERIC	373	0.035973

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]	245572		12038
1	[Git, Change]	MODIFIES	[File, Git]	245572		245572
2	[Git, Change]	UPDATES	[File, Git]	158949		245572
3	[Git, Change]	CREATES	[File, Git]	59718		245572
4	[Git, Change]	DELETES	[File, Git]	37194		245572
5	[Java, ByteCode, Member, Method]	INVOKES	[Java, ByteCode, Member, Method]	21557		13079
6	[Git, Commit]	HAS_PARENT	[Git, Commit]	14629		12038
7	[Repository, File, Git]	HAS_COMMIT	[Git, Commit]	12038		1
8	[Author, Git, Person]	COMMITTED	[Git, Commit]	12038		293
9	[Committer, Git, Person]	COMMITTED	[Git, Commit]	12038		248
10	[Repository, File, Git]	HAS_FILE	[File, Git]	10675		1
11	[Git, Change]	RENAMES	[File, Git]	10289		245572
12	[Java, ByteCode, Member, Method]	HAS	[Java, ByteCode, Parameter]	8320		13079
13	[Java, ByteCode, Member, Method]	READS	[Java, ByteCode, Member, Field]	8121		13079
14	[Java, ByteCode, Parameter]	OF_TYPE	[Type, File, Java, ByteCode, JavaType]	6368		13016
15	[File, Git]	HAS_NEW_NAME	[File, Git]	6198		10675
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		2041
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		2041
25	[Java, ByteCode, Member, Method]	RETURNS	[Type, File, Java, ByteCode, JavaType]	2088		13079
26	[Java, ByteCode, Member, Method]	INVOKES	[Java, ByteCode, Member, Constructor, Method]	2029		13079
27	[Java, ByteCode, Member, Constructor, Method]	HAS	[Java, ByteCode, Parameter]	2023		2041
28	[Java, ByteCode, Parameter]	OF_GENERIC_TYPE	[Java, ByteCode, Bound]	2023		13016
29	[Java, ByteCode, Member, Method, Lambda]	INVOKES	[Java, ByteCode, Member, Method]	1878		938

Graph Density

```
total_number_of_nodes (vertices): 334219
total_number_of_relationships (edges): 1036881
-> total directed graph density: 9.282563845763894e-06
-> total directed graph density in percent: 0.0009282563845763894
```