

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`.

Total number of nodes: 321654

	nodeLabels	nodesWithThatLabels	nodesWithThatLabelsPercent
0	[Git, Change]	233534	72.604103
1	[Java, ByteCode, Member, Method]	13207	4.105965
2	[Java, ByteCode, Parameter]	12968	4.031661
3	[Git, Commit]	11748	3.652372
4	[File, Git]	10593	3.293290
5	[Java, ByteCode, Bound, ParameterizedType]	7154	2.224129
6	[Java, ByteCode, Bound]	7094	2.205475
7	[Java, ByteCode, Member, Field]	3490	1.085017
8	[Java, ByteCode, Bound, WildcardType]	2902	0.902212
9	[Java, Value, ByteCode, Annotation]	2813	0.874542
10	[Xml, Element]	2144	0.666555
11	[Java, ByteCode, Member, Constructor, Method]	2043	0.635155
12	[Xml, Text]	1436	0.446442
13	[Java, ByteCode, Bound, TypeVariable]	1094	0.340117
14	[Java, ByteCode, Member, Method, Lambda]	931	0.289441
15	[Type, File, Java, ByteCode, ResolvedDuplicate...	899	0.279493
16	[Type, File, Java, Class, ByteCode]	858	0.266746
17	[Type, File, Java, ByteCode, JavaType]	746	0.231926
18	[Java, Value, ByteCode, Primitive]	647	0.201148
19	[Java, ByteCode, Member, Method, GenericDeclar...	567	0.176276
20	[Json, Key]	555	0.172546
21	[Value, Json, Scalar]	539	0.167571
22	[Type, File, Java, ByteCode, ExternalType]	396	0.123114
23	[Author, Git, Person]	289	0.089848
24	[Value, Array]	267	0.083008
25	[Committer, Git, Person]	243	0.075547
26	[Type, File, Java, Class, ByteCode, GenericDec...	236	0.073371
27	[Value, Property]	202	0.062800
28	[Type, File, Java, ByteCode, Interface]	186	0.057826
29	[Java, Value, Class, ByteCode]	170	0.052852

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)

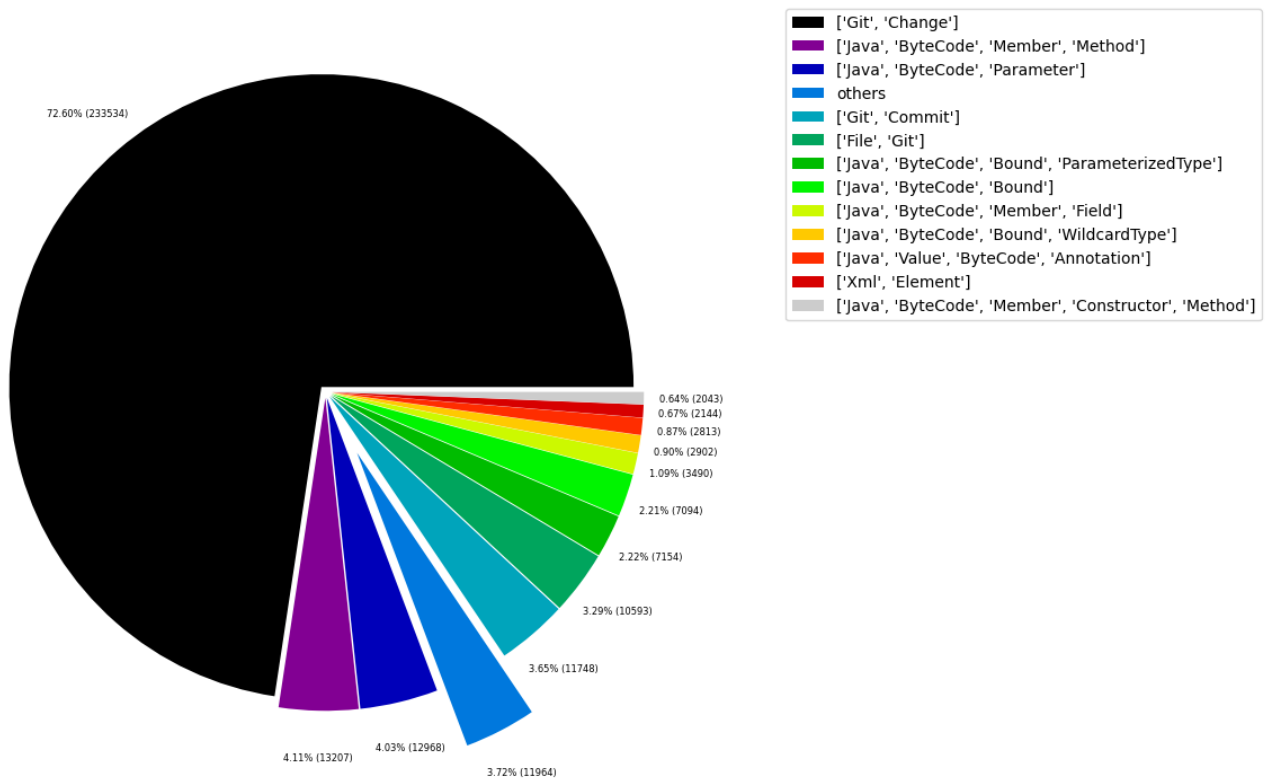


Table 1b - Lowest node count by label combination

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	0.000311
1	[File, TS, Scan]	1	0.000311
2	[File, Json]	2	0.000622
3	[File]	3	0.000933
4	[Java, ByteCode, Member, Constructor, Method, ...]	4	0.001244
5	[Maven, Exclusion]	5	0.001554
6	[Value, Array, Json]	6	0.001865
7	[Type, File, Java, ByteCode, Void]	9	0.002798
8	[File, Maven, Xml, Pom, Document]	9	0.002798
9	[Java, ManifestSection]	9	0.002798
10	[File, Java, Manifest]	9	0.002798
11	[Artifact, File, Jar, Archive, Zip, Java]	9	0.002798
12	[File, Java, ServiceLoader]	10	0.003109
13	[File, Java, Properties]	12	0.003731
14	[Maven, ExecutionGoal]	16	0.004974
15	[Maven, PluginExecution]	16	0.004974
16	[Xml, Attribute]	18	0.005596
17	[jQAssistant, Rule, Concept]	19	0.005907
18	[Maven, Plugin]	21	0.006529
19	[Maven, Configuration]	21	0.006529
20	[Git, Branch]	26	0.008083
21	[Type, File, Java, ByteCode, Enum]	28	0.008705
22	[Type, File, Java, ByteCode, PrimitiveType]	29	0.009016
23	[Xml, Namespace]	36	0.011192
24	[Type, File, Java, ByteCode, Annotation]	43	0.013368
25	[File, Directory]	44	0.013679
26	[Type, File, Java, ByteCode, GenericDeclaratio...	85	0.026426
27	[Artifact, Maven]	92	0.028602
28	[Type, File, Java, ByteCode, ExternalAnnotatio...	93	0.028913
29	[Value, ManifestEntry]	120	0.037307

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)

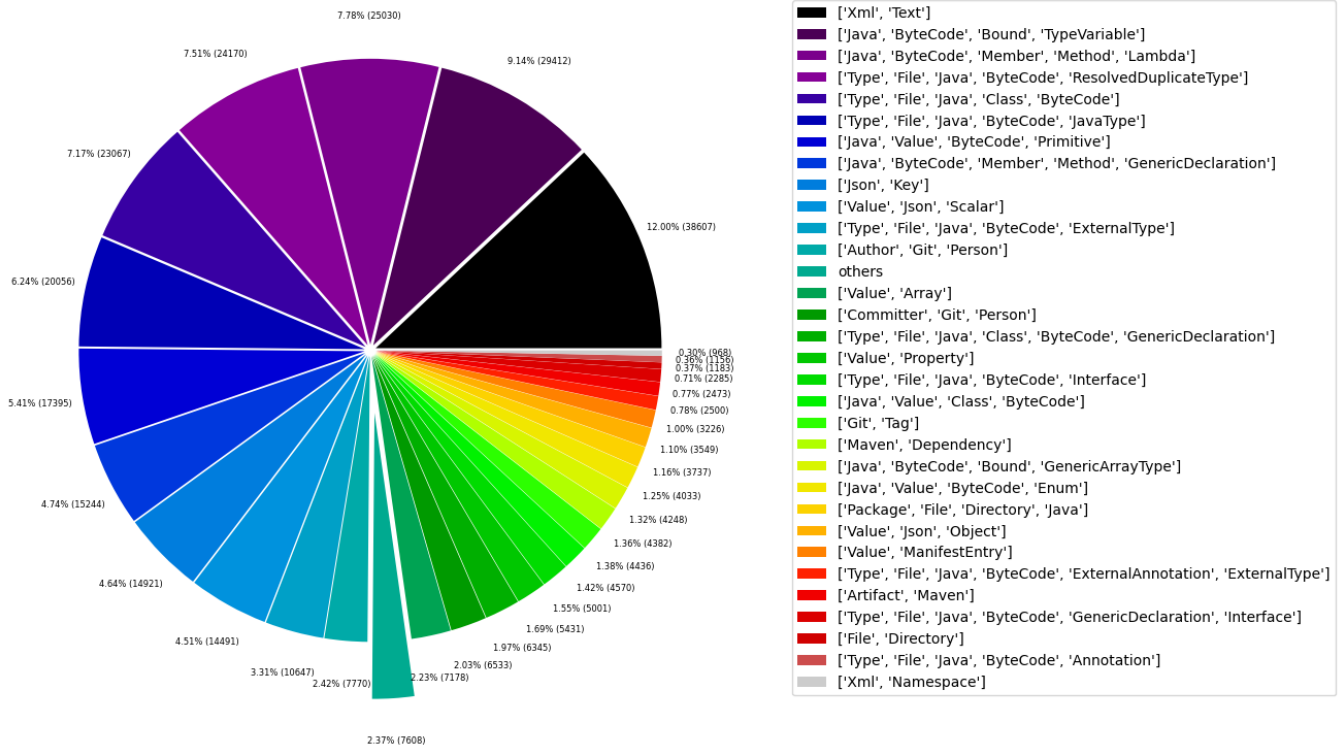


Table 1c - Highest node count by single label

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.

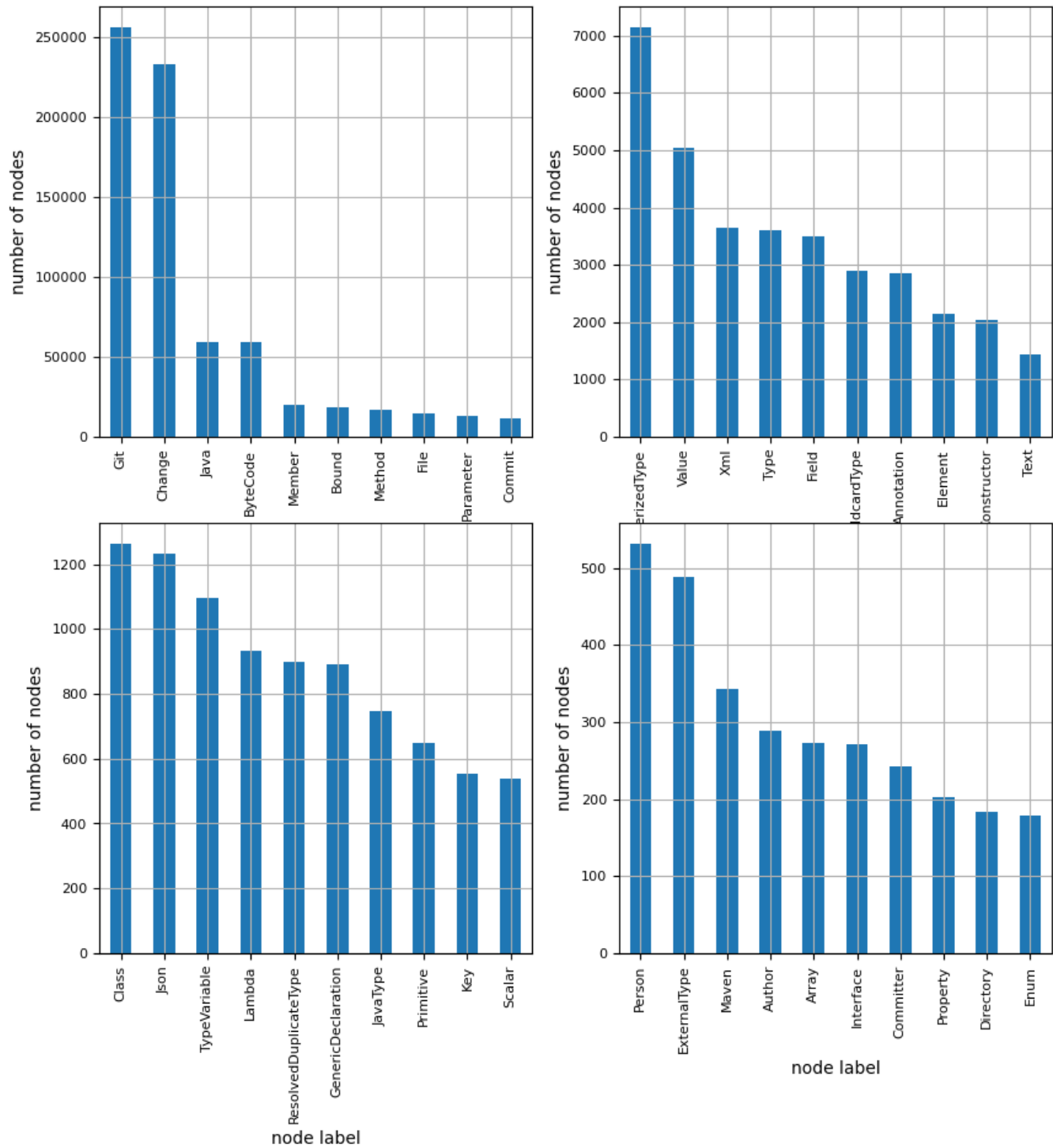
	nodeLabel	nodesWithThatLabel	nodesWithThatLabelPercent
0	Git	256598	79.774540
1	Change	233534	72.604103
2	Java	59188	18.401139
3	ByteCode	59000	18.342691
4	Member	20242	6.293098
5	Bound	18402	5.721054
6	Method	16752	5.208081
7	File	14439	4.488985
8	Parameter	12968	4.031661
9	Commit	11748	3.652372
10	ParameterizedType	7154	2.224129
11	Value	5046	1.568766
12	Xml	3643	1.132583
13	Type	3608	1.121702
14	Field	3490	1.085017
15	WildcardType	2902	0.902212
16	Annotation	2856	0.887911
17	Element	2144	0.666555
18	Constructor	2047	0.636398
19	Text	1436	0.446442
20	Class	1264	0.392969
21	Json	1234	0.383642
22	TypeVariable	1094	0.340117
23	Lambda	931	0.289441
24	ResolvedDuplicateType	899	0.279493
25	GenericDeclaration	892	0.277317
26	JavaType	746	0.231926
27	Primitive	647	0.201148
28	Key	555	0.172546
29	Scalar	539	0.167571
30	Person	532	0.165395
31	ExternalType	489	0.152027
32	Maven	343	0.106636
33	Author	289	0.089848
34	Array	273	0.084874
35	Interface	271	0.084252
36	Committer	243	0.075547
37	Property	202	0.062800
38	Directory	183	0.056893
39	Enum	178	0.055339

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: 975034

	relationshipType	nodesWithThatRelationshipType	nodesWithThatRelationshipTypePercent
0	CONTAINS_CHANGE	233534	23.951370
1	MODIFIES	233534	23.951370
2	UPDATES	149869	15.370643
3	CREATES	57908	5.939075
4	DELETES	35673	3.658642
5	INVOKES	35534	3.644386
6	COMMITTED	23496	2.409762
7	DEPENDS_ON	21820	2.237871
8	OF_TYPE	21292	2.183719
9	DECLARES	20681	2.121054
10	OF_RAW_TYPE	17041	1.747734
11	HAS_PARENT	14276	1.464154
12	HAS	14057	1.441693
13	RETURNS	12524	1.284468
14	RENAMES	9916	1.016990
15	READS	9069	0.930121
16	HAS_ACTUAL_TYPE_ARGUMENT	8261	0.847253
17	HAS_NEW_NAME	6165	0.632286
18	OF_GENERIC_TYPE	5892	0.604287
19	RESOLVES_TO	5241	0.537520
20	SIMILAR	3955	0.405627
21	CONTAINS	3797	0.389422
22	WRITES	3796	0.389320
23	RETURNS_GENERIC	3538	0.362859
24	ANNOTATED_BY	2801	0.287272
25	REQUIRES	2172	0.222761
26	HAS_FIRST_CHILD	2144	0.219890
27	HAS_LAST_CHILD	2144	0.219890
28	HAS_ELEMENT	2126	0.218044
29	HAS_UPPER_BOUND	1519	0.155789

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)

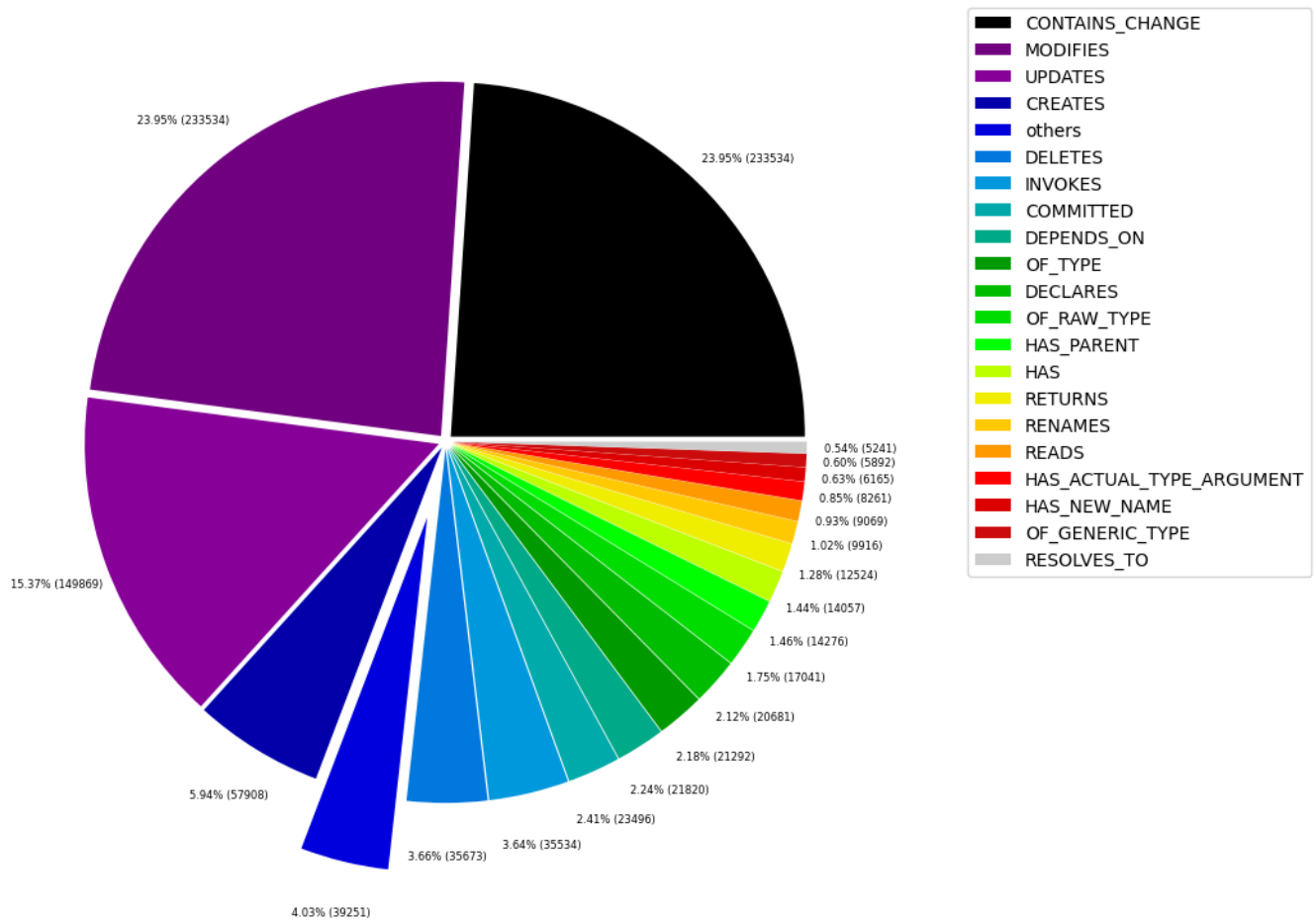


Table 2b - Lowest relationship count by type

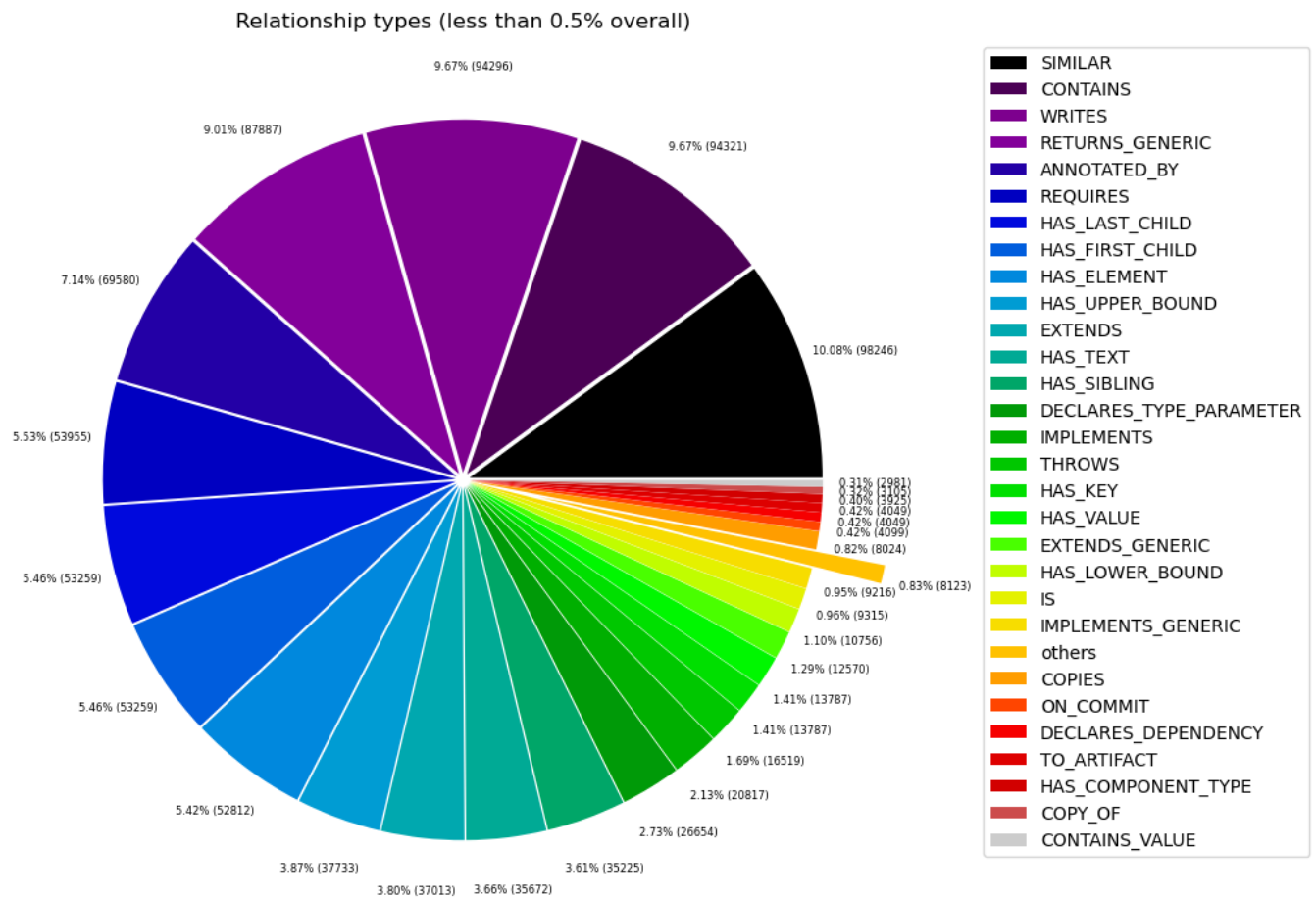
Lists the 30 relationships type with the lowest number of occurrences up to 0.5% of the total node count. This is essentially breaking down the "others" slice from the chart above.

	relationshipType	nodesWithThatRelationshipType	nodesWithThatRelationshipTypePercent
0	HAS_PROPERTY	1	0.000103
1	THROWS_GENERIC	5	0.000513
2	EXCLUDES	5	0.000513
3	DESCRIBES	9	0.000923
4	HAS_ROOT_ELEMENT	10	0.001026
5	HAS_GOAL	16	0.001641
6	HAS_EXECUTION	16	0.001641
7	OF_NAMESPACE	18	0.001846
8	HAS_ATTRIBUTE	18	0.001846
9	INCLUDES_CONCEPT	19	0.001949
10	USES_PLUGIN	21	0.002154
11	REQUIRES_TYPE_PARAMETER	21	0.002154
12	IS_ARTIFACT	21	0.002154
13	HAS_CONFIGURATION	21	0.002154
14	HAS_HEAD	26	0.002667
15	REQUIRES_CONCEPT	28	0.002872
16	DECLARES_NAMESPACE	36	0.003692
17	HAS_DEFAULT	36	0.003692
18	CONTAINS_VALUE	120	0.012307
19	COPY_OF	125	0.012820
20	HAS_COMPONENT_TYPE	158	0.016205
21	TO_ARTIFACT	163	0.016717
22	DECLARES_DEPENDENCY	163	0.016717
23	ON_COMMIT	165	0.016922
24	COPIES	323	0.033127
25	IMPLEMENTS_GENERIC	371	0.038050
26	IS	375	0.038460
27	HAS_LOWER_BOUND	433	0.044409
28	EXTENDS_GENERIC	506	0.051896
29	HAS_VALUE	555	0.056921

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>



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]	233534	11748	
1	[Git, Change]	MODIFIES	[File, Git]	233534	233534	
2	[Git, Change]	UPDATES	[File, Git]	149869	233534	
3	[Git, Change]	CREATES	[File, Git]	57908	233534	
4	[Git, Change]	DELETES	[File, Git]	35673	233534	
5	[Java, ByteCode, Member, Method]	INVOKES	[Java, ByteCode, Member, Method]	21587	13097	
6	[Git, Commit]	HAS_PARENT	[Git, Commit]	14267	11748	
7	[Author, Git, Person]	COMMITTED	[Git, Commit]	11748	289	
8	[Committer, Git, Person]	COMMITTED	[Git, Commit]	11748	243	
9	[Git, Change]	RENAMES	[File, Git]	9916	233534	
10	[Java, ByteCode, Member, Method]	HAS	[Java, ByteCode, Parameter]	8297	13097	
11	[Java, ByteCode, Member, Method]	READS	[Java, ByteCode, Member, Field]	8140	13097	
12	[Java, ByteCode, Parameter]	OF_TYPE	[Type, File, Java, ByteCode, JavaType]	6335	12968	
13	[File, Git]	HAS_NEW_NAME	[File, Git]	6165	10593	
14	[Java, ByteCode, Bound]	OF_RAW_TYPE	[Type, File, Java, ByteCode, JavaType]	3554	7094	
15	[Java, ByteCode, Bound, ParameterizedType]	OF_RAW_TYPE	[Type, File, Java, ByteCode, JavaType]	3034	7154	
16	[Java, ByteCode, Bound, ParameterizedType]	HAS_ACTUAL_TYPE_ARGUMENT	[Java, ByteCode, Bound, WildcardType]	2902	7154	
17	[Java, ByteCode, Parameter]	OF_GENERIC_TYPE	[Java, ByteCode, Bound, ParameterizedType]	2650	12968	
18	[Java, ByteCode, Bound, ParameterizedType]	HAS_ACTUAL_TYPE_ARGUMENT	[Java, ByteCode, Bound, TypeVariable]	2453	7154	
19	[Java, ByteCode, Member, Constructor, Method]	WRITES	[Java, ByteCode, Member, Field]	2423	2043	
20	[Java, Value, ByteCode, Annotation]	OF_TYPE	[Type, File, Java, ByteCode, ExternalAnnotatio...	2336	2813	
21	[Xml, Element]	HAS_ELEMENT	[Xml, Element]	2126	2144	
22	[Java, ByteCode, Member, Constructor, Method]	INVOKES	[Java, ByteCode, Member, Constructor, Method]	2109	2043	
23	[Java, ByteCode, Member, Method]	RETURNS	[Type, File, Java, ByteCode, JavaType]	2087	13097	
24	[Java, ByteCode, Member, Method]	INVOKES	[Java, ByteCode, Member, Constructor, Method]	2032	13097	
25	[Java, ByteCode, Member, Constructor, Method]	HAS	[Java, ByteCode, Parameter]	2021	2043	
26	[Java, ByteCode, Parameter]	OF_GENERIC_TYPE	[Java, ByteCode, Bound]	2020	12968	
27	[Java, ByteCode, Member, Method, Lambda]	INVOKES	[Java, ByteCode, Member, Method]	1866	931	
28	[Java, ByteCode, Member, Constructor, Method]	INVOKES	[Java, ByteCode, Member, Method]	1795	2043	
29	[Java, ByteCode, Bound, ParameterizedType]	HAS_ACTUAL_TYPE_ARGUMENT	[Java, ByteCode, Bound]	1792	7154	

Graph Density

```
total_number_of_nodes (vertices): 321654
total_number_of_relationships (edges): 975034
-> total directed graph density: 9.424171856488624e-06
-> total directed graph density in percent: 0.0009424171856488625
```