

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: 321623

	nodeLabels	nodesWithThatLabels	nodesWithThatLabelsPercent
0	[Git, Change]	233505	72.602084
1	[Java, ByteCode, Member, Method]	13227	4.112579
2	[Java, ByteCode, Parameter]	12968	4.032050
3	[Git, Commit]	11733	3.648060
4	[File, Git]	10590	3.292675
5	[Java, ByteCode, ParameterizedType, Bound]	7154	2.224343
6	[Java, ByteCode, Bound]	7094	2.205688
7	[Java, ByteCode, Member, Field]	3485	1.083567
8	[Java, ByteCode, Bound, WildcardType]	2902	0.902299
9	[Java, Value, ByteCode, Annotation]	2813	0.874627
10	[Xml, Element]	2144	0.666619
11	[Java, ByteCode, Member, Constructor, Method]	2045	0.635838
12	[Xml, Text]	1436	0.446485
13	[Java, ByteCode, Bound, TypeVariable]	1094	0.340150
14	[Java, ByteCode, Member, Method, Lambda]	931	0.289469
15	[Type, File, Java, ByteCode, ResolvedDuplicate...	899	0.279520
16	[Type, File, Java, ByteCode, Class]	858	0.266772
17	[Type, File, Java, ByteCode, JavaType]	746	0.231949
18	[Java, Value, ByteCode, Primitive]	647	0.201167
19	[Java, ByteCode, Member, Method, GenericDeclar...	567	0.176293
20	[Json, Key]	555	0.172562
21	[Value, Json, Scalar]	539	0.167588
22	[Type, File, Java, ByteCode, ExternalType]	396	0.123126
23	[Author, Git, Person]	289	0.089857
24	[Value, Array]	267	0.083016
25	[Committer, Git, Person]	243	0.075554
26	[Type, File, Java, ByteCode, Class, GenericDec...	236	0.073378
27	[Value, Property]	202	0.062806
28	[Type, File, Java, ByteCode, Interface]	186	0.057832
29	[Java, Value, ByteCode, Class]	170	0.052857

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)

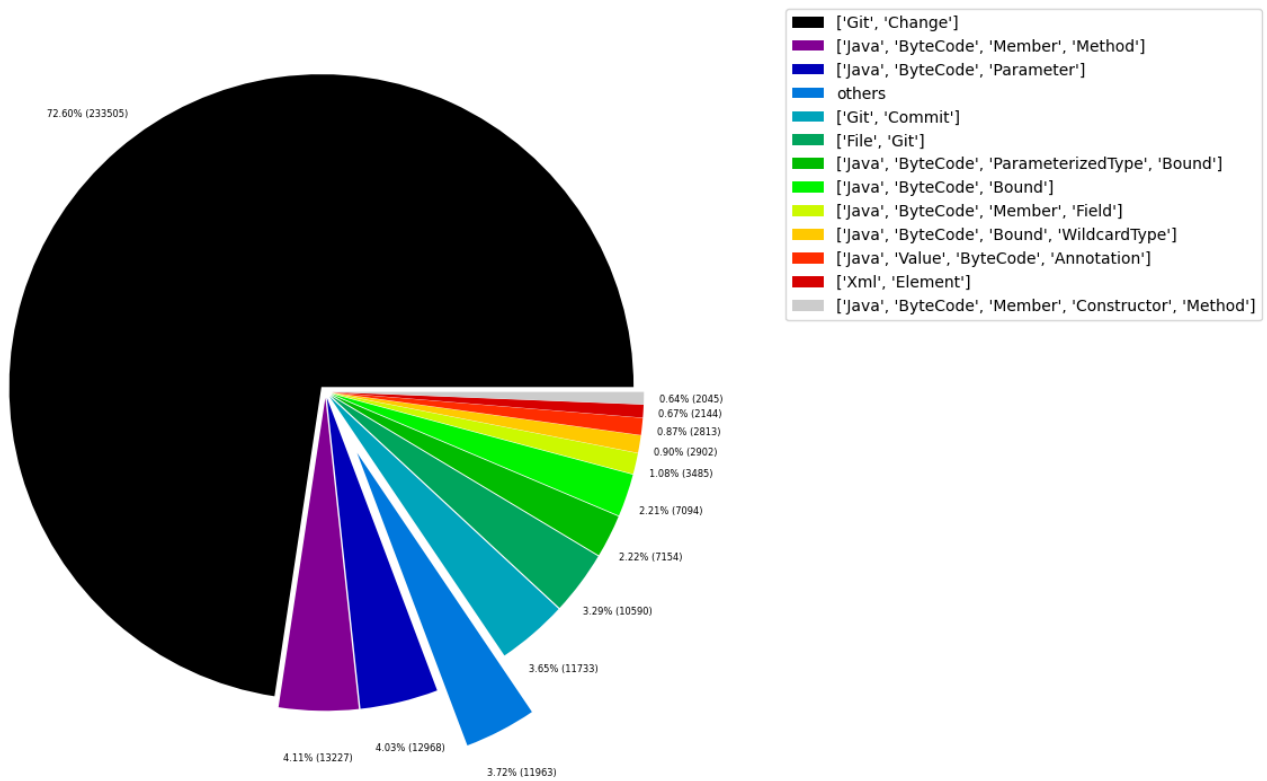


Table 1b - Lowest node count by label combination

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	0.001555
6	[Value, Json, Array]	6	0.001866
7	[File, Maven, Xml, Pom, Document]	9	0.002798
8	[Type, File, Java, ByteCode, Void]	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	0.004975
15	[Maven, PluginExecution]	16	0.004975
16	[Xml, Attribute]	18	0.005597
17	[jQAssistant, Rule, Concept]	19	0.005908
18	[Maven, Plugin]	21	0.006529
19	[Maven, Configuration]	21	0.006529
20	[Git, Branch]	25	0.007773
21	[Type, File, Java, ByteCode, Enum]	28	0.008706
22	[Type, File, Java, ByteCode, PrimitiveType]	29	0.009017
23	[Xml, Namespace]	36	0.011193
24	[Type, File, Java, ByteCode, Annotation]	43	0.013370
25	[File, Directory]	44	0.013681
26	[Type, File, Java, ByteCode, GenericDeclaratio...	85	0.026428
27	[Artifact, Maven]	92	0.028605
28	[Type, File, Java, ByteCode, ExternalAnnotatio...	93	0.028916
29	[Value, ManifestEntry]	120	0.037311

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)

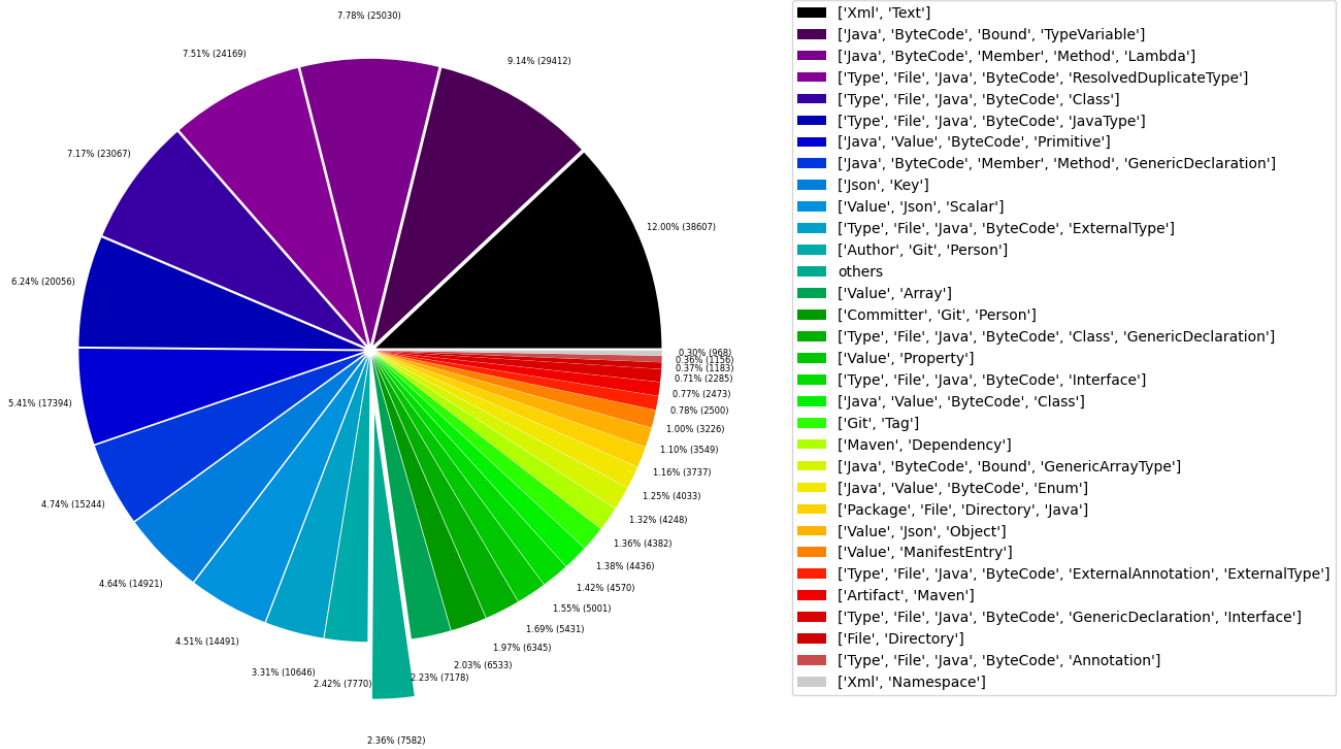


Table 1c - Highest node count by single label

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.

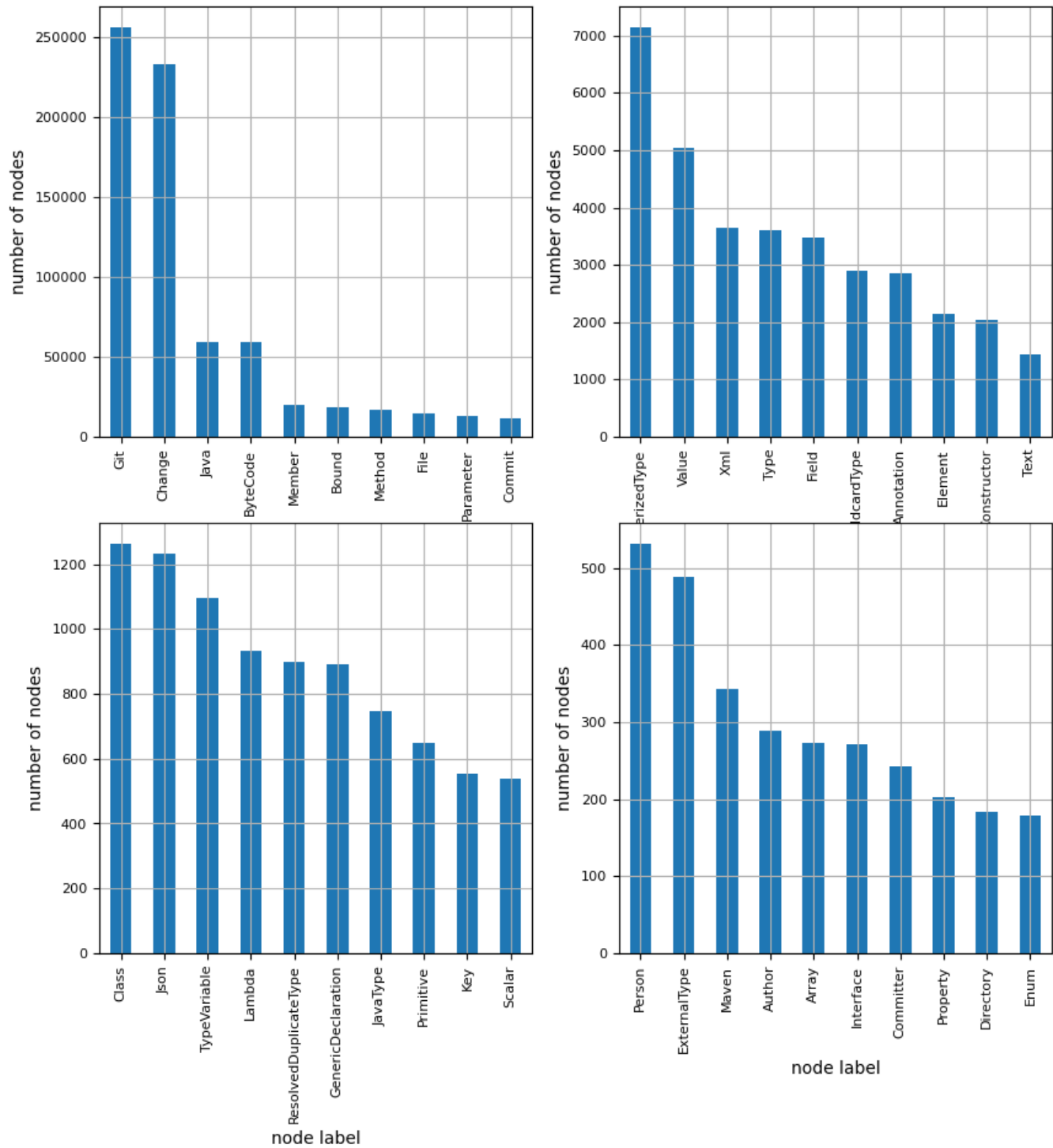
	nodeLabel	nodesWithThatLabel	nodesWithThatLabelPercent
0	Git	256550	79.767305
1	Change	233505	72.602084
2	Java	59205	18.408198
3	ByteCode	59017	18.349745
4	Member	20259	6.298990
5	Bound	18402	5.721606
6	Method	16774	5.215423
7	File	14436	4.488485
8	Parameter	12968	4.032050
9	Commit	11733	3.648060
10	ParameterizedType	7154	2.224343
11	Value	5046	1.568918
12	Xml	3643	1.132693
13	Type	3608	1.121810
14	Field	3485	1.083567
15	WildcardType	2902	0.902299
16	Annotation	2856	0.887996
17	Element	2144	0.666619
18	Constructor	2049	0.637081
19	Text	1436	0.446485
20	Class	1264	0.393007
21	Json	1234	0.383679
22	TypeVariable	1094	0.340150
23	Lambda	931	0.289469
24	ResolvedDuplicateType	899	0.279520
25	GenericDeclaration	892	0.277343
26	JavaType	746	0.231949
27	Primitive	647	0.201167
28	Key	555	0.172562
29	Scalar	539	0.167588
30	Person	532	0.165411
31	ExternalType	489	0.152041
32	Maven	343	0.106647
33	Author	289	0.089857
34	Array	273	0.084882
35	Interface	271	0.084260
36	Committer	243	0.075554
37	Property	202	0.062806
38	Directory	183	0.056899
39	Enum	178	0.055344

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: 975003

	relationshipType	nodesWithThatRelationshipType	nodesWithThatRelationshipTypePercent
0	CONTAINS_CHANGE	233505	23.949157
1	MODIFIES	233505	23.949157
2	UPDATES	149845	15.368671
3	CREATES	57905	5.938956
4	DELETES	35670	3.658450
5	INVOKES	35599	3.651168
6	COMMITTED	23466	2.406762
7	DEPENDS_ON	21820	2.237942
8	OF_TYPE	21292	2.183788
9	DECLARES	20698	2.122865
10	OF_RAW_TYPE	17041	1.747789
11	HAS_PARENT	14261	1.462662
12	HAS	14057	1.441739
13	RETURNS	12524	1.284509
14	RENAMES	9915	1.016920
15	READS	9069	0.930151
16	HAS_ACTUAL_TYPE_ARGUMENT	8261	0.847279
17	HAS_NEW_NAME	6164	0.632203
18	OF_GENERIC_TYPE	5892	0.604306
19	RESOLVES_TO	5262	0.539691
20	SIMILAR	3955	0.405640
21	CONTAINS	3797	0.389435
22	WRITES	3796	0.389332
23	RETURNS_GENERIC	3538	0.362871
24	ANNOTATED_BY	2801	0.287281
25	REQUIRES	2172	0.222769
26	HAS_FIRST_CHILD	2144	0.219897
27	HAS_LAST_CHILD	2144	0.219897
28	HAS_ELEMENT	2126	0.218051
29	HAS_UPPER_BOUND	1519	0.155794

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)

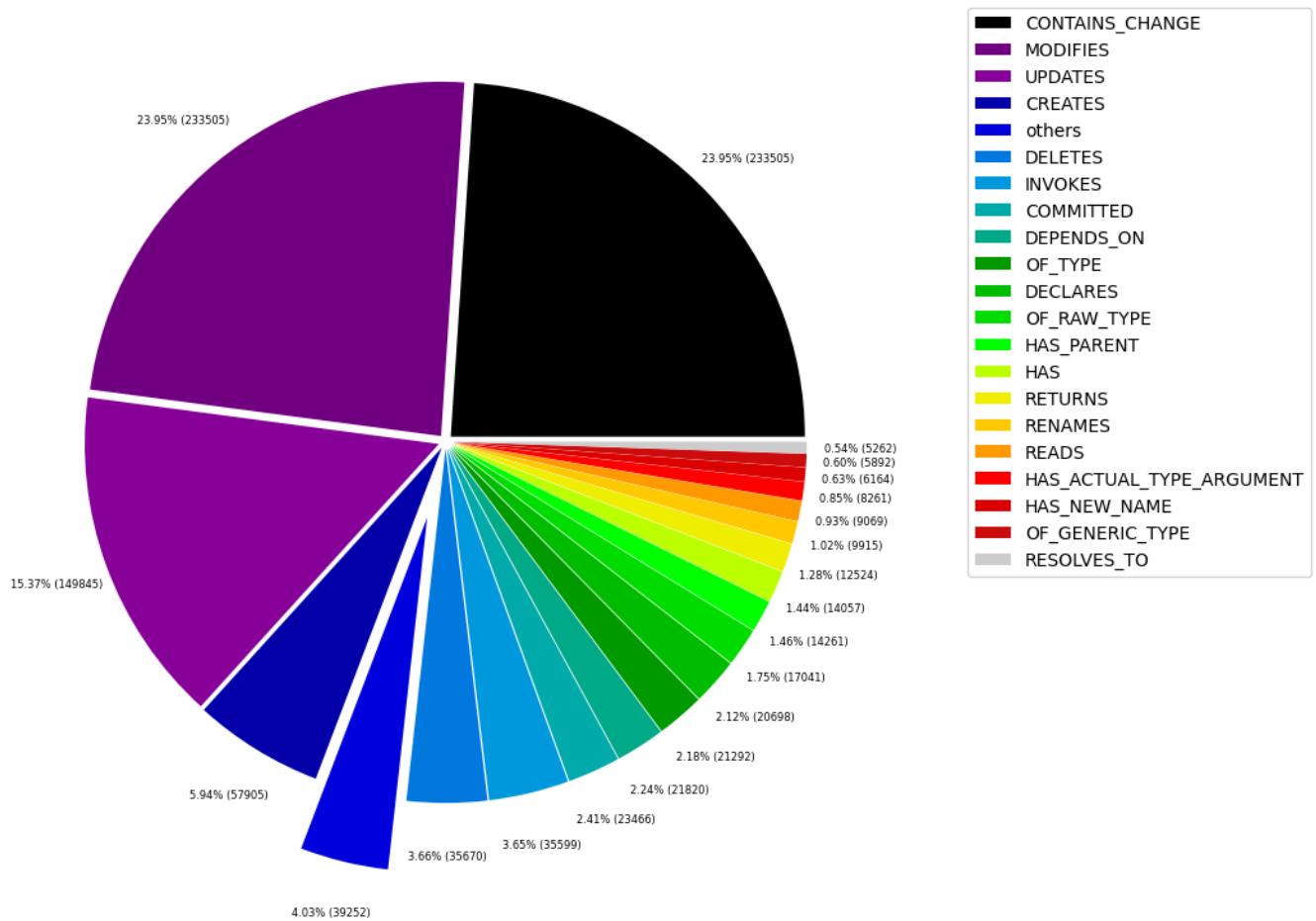


Table 2b - Lowest relationship count by type

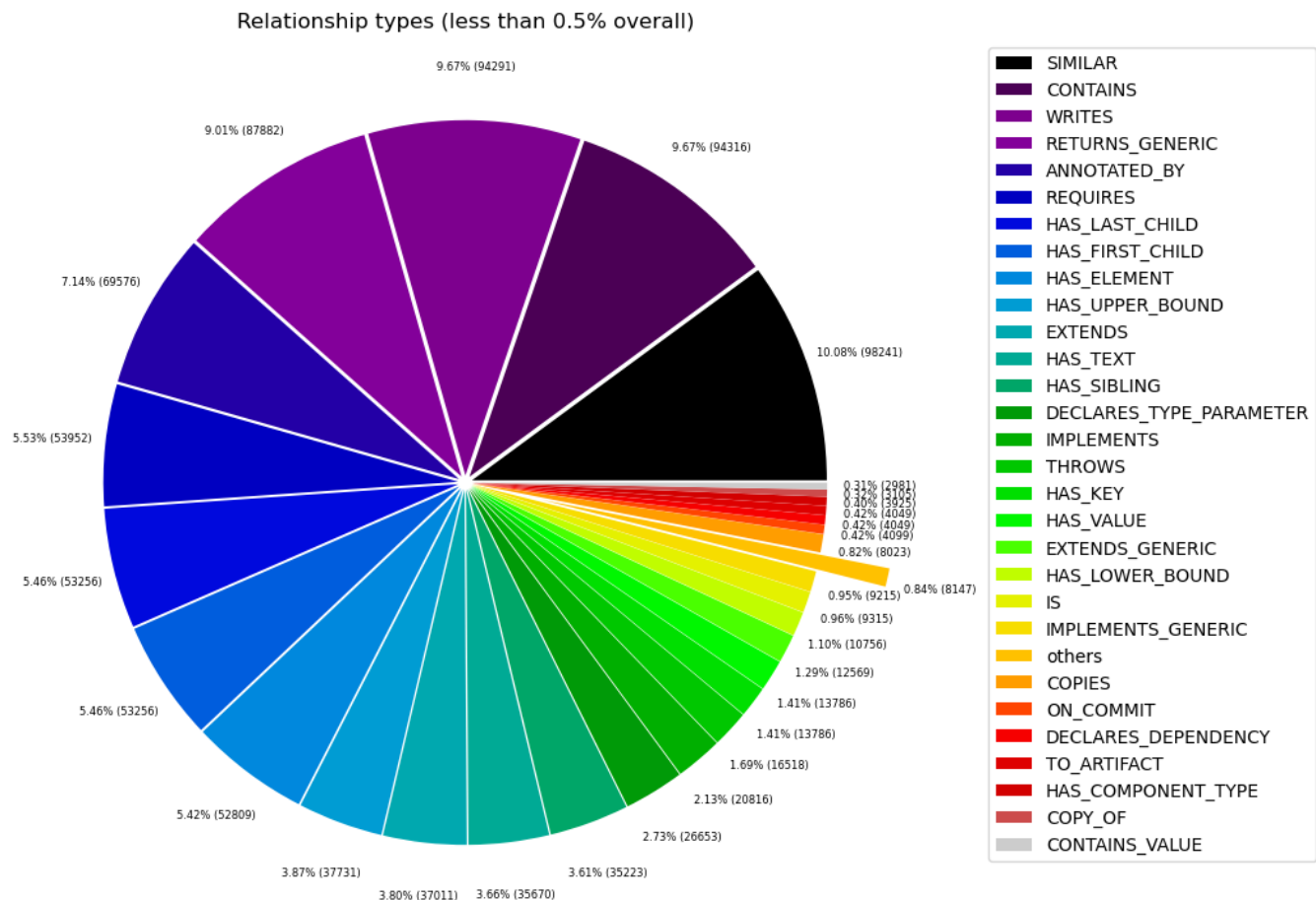
Lists the 30 relationships type with the lowest number of occurrences up to 0.5% of the total node count. This is essentially breaking down the "others" slice from the chart above.

	relationshipType	nodesWithThatRelationshipType	nodesWithThatRelationshipTypePercent
0	HAS_PROPERTY	1	0.000103
1	THROWS_GENERIC	5	0.000513
2	EXCLUDES	5	0.000513
3	DESCRIBES	9	0.000923
4	HAS_ROOT_ELEMENT	12	0.001231
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	25	0.002564
15	REQUIRES_CONCEPT	28	0.002872
16	DECLARES_NAMESPACE	36	0.003692
17	HAS_DEFAULT	36	0.003692
18	CONTAINS_VALUE	120	0.012308
19	COPY_OF	125	0.012820
20	HAS_COMPONENT_TYPE	158	0.016205
21	TO_ARTIFACT	163	0.016718
22	DECLARES_DEPENDENCY	163	0.016718
23	ON_COMMIT	165	0.016923
24	COPIES	323	0.033128
25	IMPLEMENTS_GENERIC	371	0.038051
26	IS	375	0.038461
27	HAS_LOWER_BOUND	433	0.044410
28	EXTENDS_GENERIC	506	0.051897
29	HAS_VALUE	555	0.056923

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]	233505		11733
1	[Git, Change]	MODIFIES	[File, Git]	233505		233505
2	[Git, Change]	UPDATES	[File, Git]	149845		233505
3	[Git, Change]	CREATES	[File, Git]	57905		233505
4	[Git, Change]	DELETES	[File, Git]	35670		233505
5	[Java, ByteCode, Member, Method]	INVOKES	[Java, ByteCode, Member, Method]	21653		13107
6	[Git, Commit]	HAS_PARENT	[Git, Commit]	14252		11733
7	[Author, Git, Person]	COMMITTED	[Git, Commit]	11733		289
8	[Committer, Git, Person]	COMMITTED	[Git, Commit]	11733		243
9	[Git, Change]	RENAMES	[File, Git]	9915		233505
10	[Java, ByteCode, Member, Method]	HAS	[Java, ByteCode, Parameter]	8294		13107
11	[Java, ByteCode, Member, Method]	READS	[Java, ByteCode, Member, Field]	8122		13107
12	[Java, ByteCode, Parameter]	OF_TYPE	[Type, File, Java, ByteCode, JavaType]	6335		12968
13	[File, Git]	HAS_NEW_NAME	[File, Git]	6164		10590
14	[Java, ByteCode, Bound]	OF_RAW_TYPE	[Type, File, Java, ByteCode, JavaType]	3554		7094
15	[Java, ByteCode, ParameterizedType, Bound]	OF_RAW_TYPE	[Type, File, Java, ByteCode, JavaType]	3034		7154
16	[Java, ByteCode, ParameterizedType, Bound]	HAS_ACTUAL_TYPE_ARGUMENT	[Java, ByteCode, Bound, WildcardType]	2902		7154
17	[Java, ByteCode, Parameter]	OF_GENERIC_TYPE	[Java, ByteCode, ParameterizedType, Bound]	2650		12968
18	[Java, ByteCode, ParameterizedType, Bound]	HAS_ACTUAL_TYPE_ARGUMENT	[Java, ByteCode, Bound, TypeVariable]	2453		7154
19	[Java, ByteCode, Member, Constructor, Method]	WRITES	[Java, ByteCode, Member, Field]	2423		2045
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]	2107		2045
23	[Java, ByteCode, Member, Method]	RETURNS	[Type, File, Java, ByteCode, JavaType]	2084		13107
24	[Java, ByteCode, Member, Method]	INVOKES	[Java, ByteCode, Member, Constructor, Method]	2037		13107
25	[Java, ByteCode, Member, Constructor, Method]	HAS	[Java, ByteCode, Parameter]	2021		2045
26	[Java, ByteCode, Parameter]	OF_GENERIC_TYPE	[Java, ByteCode, Bound]	2020		12968
27	[Java, ByteCode, Member, Method, Lambda]	INVOKES	[Java, ByteCode, Member, Method]	1881		931
28	[Java, ByteCode, Member, Constructor, Method]	INVOKES	[Java, ByteCode, Member, Method]	1800		2045
29	[Java, ByteCode, ParameterizedType, Bound]	HAS_ACTUAL_TYPE_ARGUMENT	[Java, ByteCode, Bound]	1792		7154

Graph Density

```
total_number_of_nodes (vertices): 321623
total_number_of_relationships (edges): 975003
-> total directed graph density: 9.425688978340832e-06
-> total directed graph density in percent: 0.0009425688978340832
```