

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: 69405

	nodeLabels	nodesWithThatLabels	nodesWithThatLabelsPercent
0	[Java, ByteCode, Parameter]	11202	16.140048
1	[Java, ByteCode, Member, Method]	10658	15.356242
2	[File, Git, Log]	8142	11.731143
3	[Git, Commit, Log]	7776	11.203804
4	[Java, ByteCode, Bound, ParameterizedType]	6542	9.425834
5	[Java, ByteCode, Bound]	6316	9.100209
6	[Java, ByteCode, Member, Field]	2845	4.099128
7	[Java, ByteCode, Bound, WildcardType]	2723	3.923348
8	[Java, Value, ByteCode, Annotation]	2225	3.205821
9	[Java, ByteCode, Member, Constructor, Method]	1654	2.383114
10	[Xml, Element]	1534	2.210215
11	[Xml, Text]	1016	1.463871
12	[Java, ByteCode, Bound, TypeVariable]	989	1.424969
13	[Java, ByteCode, Member, Method, Lambda]	769	1.107989
14	[Type, File, Java, Class, ByteCode]	699	1.007132
15	[Type, File, Java, ByteCode, JavaType]	597	0.860169
16	[Type, File, Java, ByteCode, ResolvedDuplicate...	542	0.780924
17	[Java, ByteCode, Member, Method, GenericDeclar...	525	0.756430
18	[Java, Value, ByteCode, Primitive]	467	0.672862
19	[Git, Author, Log]	269	0.387580
20	[Type, File, Java, Class, ByteCode, GenericDec...	215	0.309776
21	[Type, File, Java, ByteCode, ExternalType]	194	0.279519
22	[Type, File, Java, ByteCode, Interface]	167	0.240617
23	[Java, ByteCode, Bound, GenericArrayType]	145	0.208919
24	[Java, Value, ByteCode, Enum]	142	0.204596
25	[Maven, Dependency]	116	0.167135
26	[Value, Property]	109	0.157049
27	[Package, File, Directory, Java]	107	0.154168
28	[Value, Array]	104	0.149845
29	[Value, ManifestEntry]	91	0.131114

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>

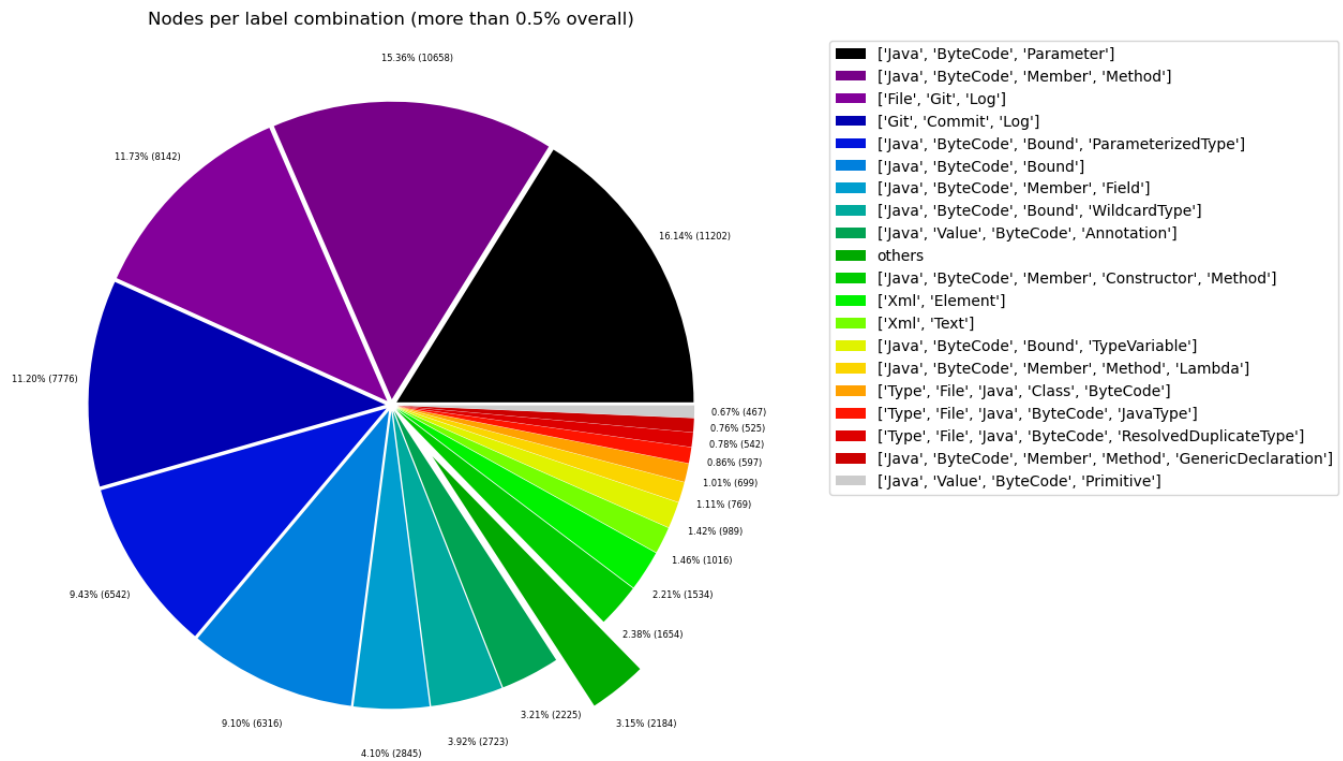


Table 1b - Lowest node count by label combination

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	[Repository, Git]	1	0.001441
1	[Analyze, Task, jQAssistant]	1	0.001441
2	[Maven, Exclusion]	1	0.001441
3	[Java, ByteCode, Member, Constructor, Method, ...]	3	0.004322
4	[Type, File, Java, ByteCode, Void]	6	0.008645
5	[File, Maven, Xml, Pom, Document]	6	0.008645
6	[Java, ManifestSection]	6	0.008645
7	[File, Java, Manifest]	6	0.008645
8	[Artifact, File, Jar, Archive, Zip, Java]	6	0.008645
9	[File, Java, Properties]	8	0.011527
10	[File, Java, ServiceLoader]	9	0.012967
11	[Xml, Attribute]	12	0.017290
12	[Maven, ExecutionGoal]	14	0.020171
13	[Maven, PluginExecution]	14	0.020171
14	[Maven, Plugin]	16	0.023053
15	[Maven, Configuration]	16	0.023053
16	[jQAssistant, Rule, Concept]	19	0.027376
17	[Type, File, Java, ByteCode, PrimitiveType]	21	0.030257
18	[Xml, Namespace]	24	0.034580
19	[Type, File, Java, ByteCode, Enum]	25	0.036020
20	[Java, Value, Class, ByteCode]	28	0.040343
21	[File, Directory]	29	0.041784
22	[Type, File, Java, ByteCode, Annotation]	40	0.057633
23	[Type, File, Java, ByteCode, ExternalAnnotatio...	65	0.093653
24	[Artifact, Maven]	69	0.099416
25	[Type, File, Java, ByteCode, GenericDeclaratio...	80	0.115265
26	[Value, ManifestEntry]	91	0.131114
27	[Value, Array]	104	0.149845
28	[Package, File, Directory, Java]	107	0.154168
29	[Value, Property]	109	0.157049

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>

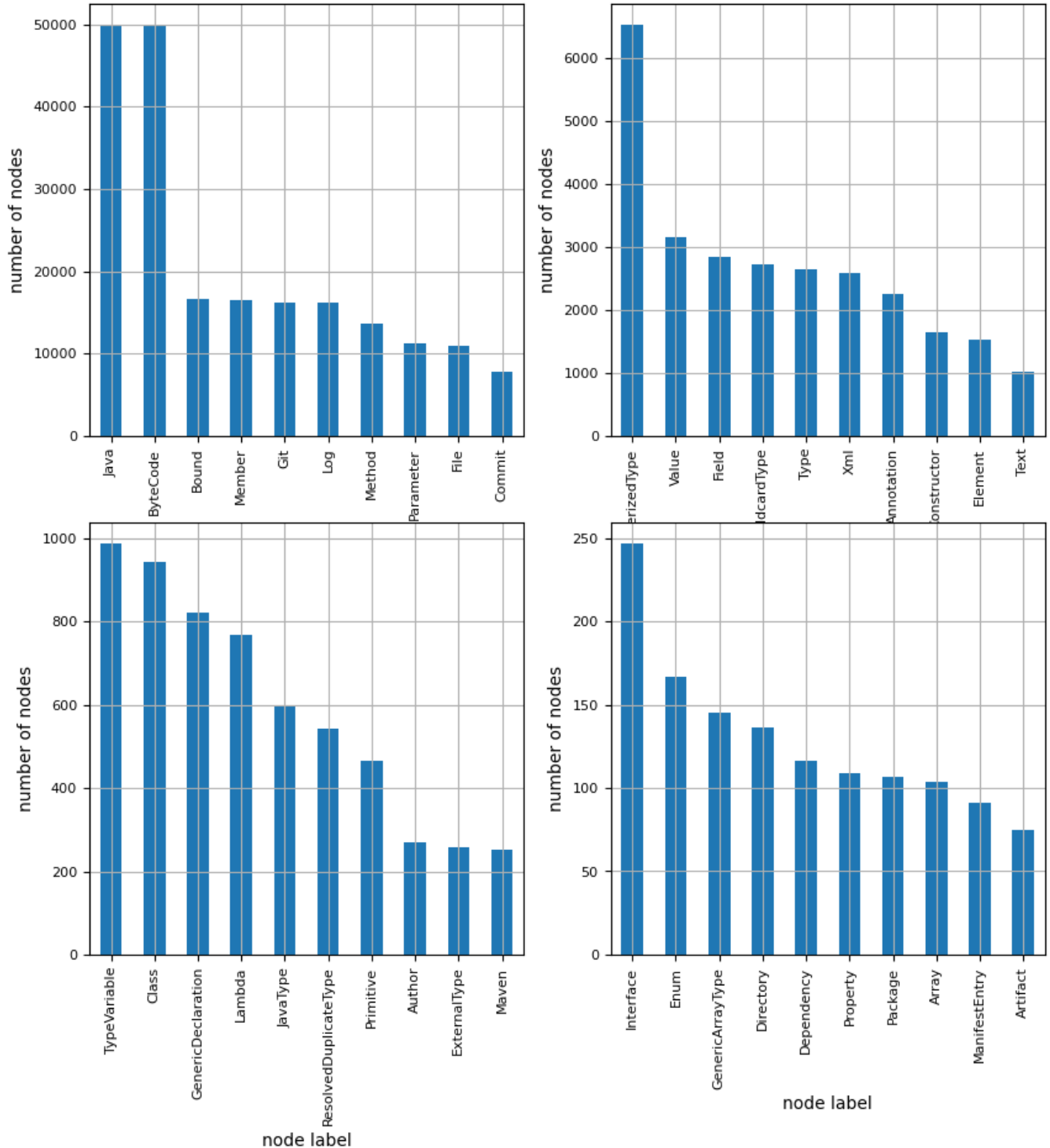
	nodeLabel	nodesWithThatLabel	nodesWithThatLabelPercent
0	Java	50026	72.078381
1	ByteCode	49884	71.873784
2	Bound	16715	24.083279
3	Member	16454	23.707226
4	Git	16188	23.323968
5	Log	16187	23.322527
6	Method	13609	19.608097
7	Parameter	11202	16.140048
8	File	10964	15.797133
9	Commit	7776	11.203804
10	ParameterizedType	6542	9.425834
11	Value	3166	4.561631
12	Field	2845	4.099128
13	WildcardType	2723	3.923348
14	Type	2651	3.819610
15	Xml	2592	3.734601
16	Annotation	2265	3.263454
17	Constructor	1657	2.387436
18	Element	1534	2.210215
19	Text	1016	1.463871
20	TypeVariable	989	1.424969
21	Class	942	1.357251
22	GenericDeclaration	823	1.185794
23	Lambda	769	1.107989
24	JavaType	597	0.860169
25	ResolvedDuplicateType	542	0.780924
26	Primitive	467	0.672862
27	Author	269	0.387580
28	ExternalType	259	0.373172
29	Maven	252	0.363086
30	Interface	247	0.355882
31	Enum	167	0.240617
32	GenericArrayType	145	0.208919
33	Directory	136	0.195951
34	Dependency	116	0.167135
35	Property	109	0.157049
36	Package	107	0.154168
37	Array	104	0.149845
38	ManifestEntry	91	0.131114
39	Artifact	75	0.108061

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: 249579

	relationshipType	nodesWithThatRelationshipType	nodesWithThatRelationshipTypePercent
0	CONTAINS_CHANGED	46599	18.671042
1	INVOKES	29663	11.885215
2	OF_TYPE	17636	7.066300
3	DEPENDS_ON	17445	6.989771
4	DECLARES	16816	6.737746
5	OF_RAW_TYPE	15200	6.090256
6	HAS	11902	4.768831
7	RETURNS	10643	4.264381
8	HAS_FILE	8142	3.262294
9	AUTHORED	7776	3.115647
10	HAS_COMMIT	7776	3.115647
11	READS	7697	3.083993
12	HAS_ACTUAL_TYPE_ARGUMENT	7501	3.005461
13	HAS_PARENT	6288	2.519443
14	OF_GENERIC_TYPE	5349	2.143209
15	SIMILAR	3419	1.369907
16	RETURNS_GENERIC	3253	1.303395
17	WRITES	3066	1.228469
18	CONTAINS	3031	1.214445
19	RESOLVES_TO	2906	1.164361
20	ANNOTATED_BY	2213	0.886693
21	HAS_FIRST_CHILD	1534	0.614635
22	HAS_LAST_CHILD	1534	0.614635
23	HAS_ELEMENT	1522	0.609827
24	REQUIRES	1425	0.570961
25	HAS_UPPER_BOUND	1406	0.563349
26	EXTENDS	1269	0.508456
27	HAS_TEXT	1016	0.407086
28	HAS_SIBLING	1004	0.402277
29	DECLARES_TYPE_PARAMETER	972	0.389456

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>

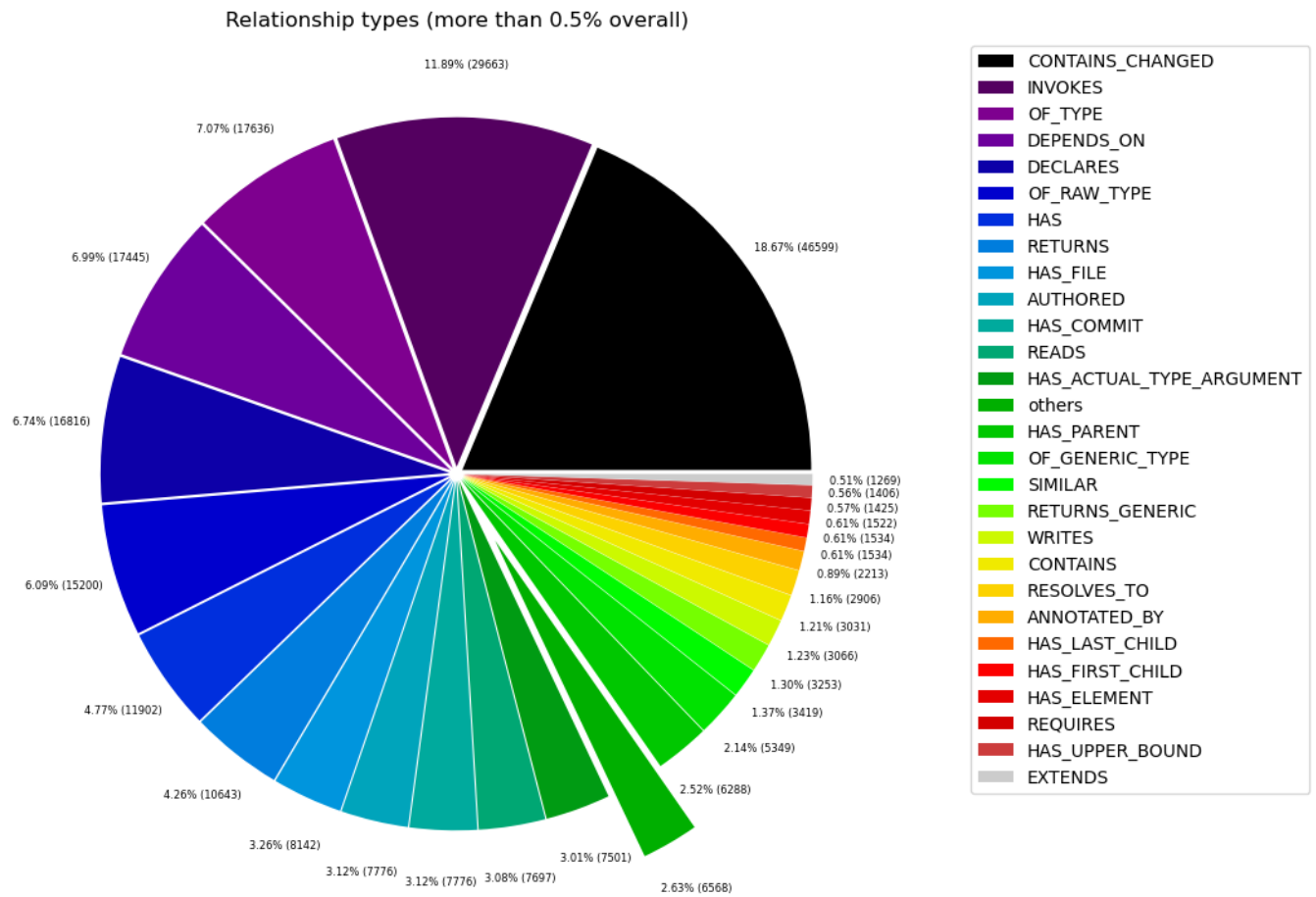


Table 2b - Lowest relationship count by type

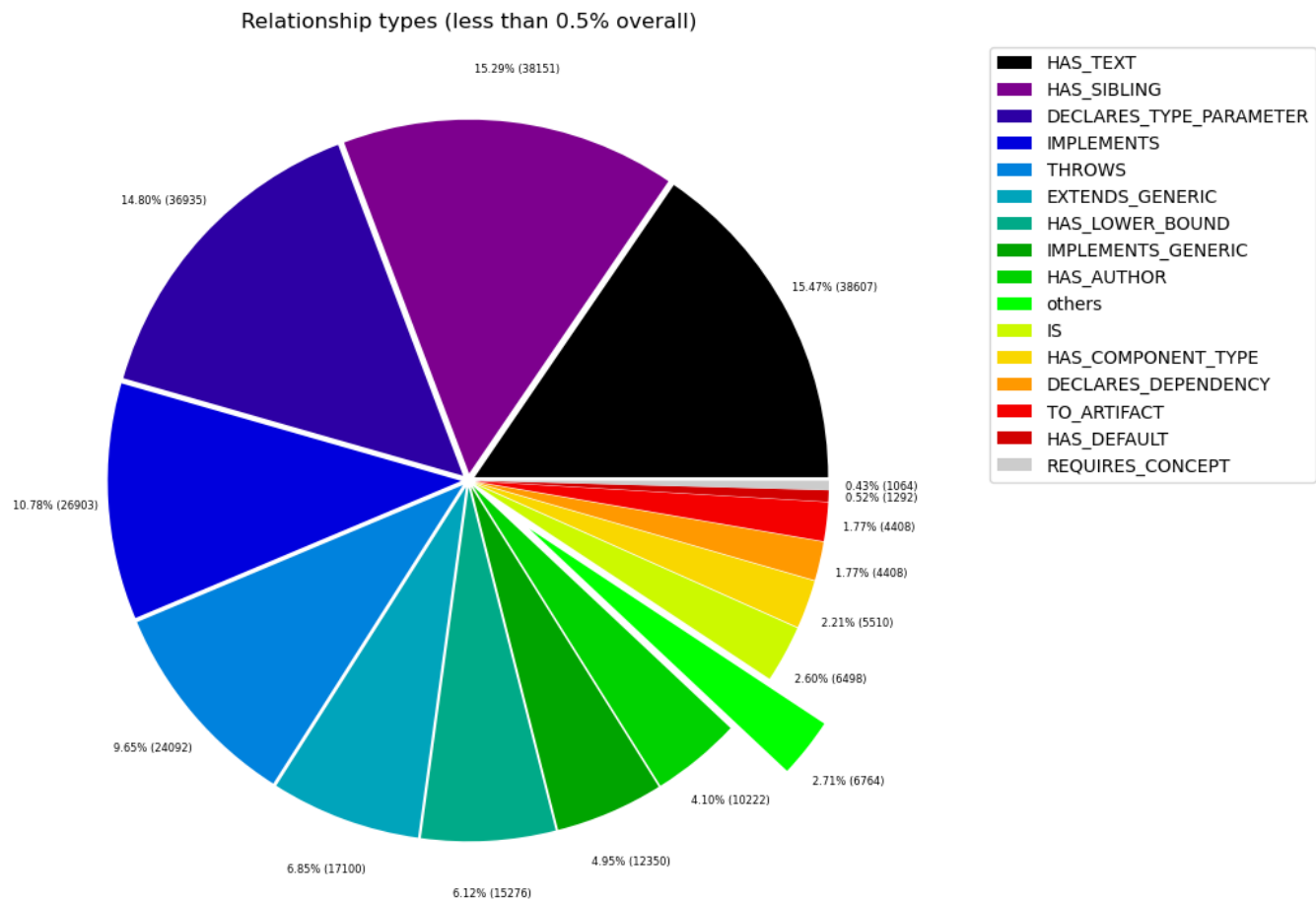
Lists the 30 relationships type with the lowest number of occurrences up to 0.5% of the total node count. This is essentially breaking down the "others" slice from the chart above.

	relationshipType	nodesWithThatRelationshipType	nodesWithThatRelationshipTypePercent
0	EXCLUDES	1	0.000401
1	THROWS_GENERIC	5	0.002003
2	DESCRIBES	6	0.002404
3	HAS_ROOT_ELEMENT	6	0.002404
4	OF_NAMESPACE	12	0.004808
5	HAS_ATTRIBUTE	12	0.004808
6	HAS_GOAL	14	0.005609
7	HAS_EXECUTION	14	0.005609
8	USES_PLUGIN	16	0.006411
9	IS_ARTIFACT	16	0.006411
10	HAS_CONFIGURATION	16	0.006411
11	REQUIRES_TYPE_PARAMETER	17	0.006811
12	INCLUDES_CONCEPT	19	0.007613
13	DECLARES_NAMESPACE	24	0.009616
14	REQUIRES_CONCEPT	28	0.011219
15	HAS_DEFAULT	34	0.013623
16	TO_ARTIFACT	116	0.046478
17	DECLARES_DEPENDENCY	116	0.046478
18	HAS_COMPONENT_TYPE	145	0.058098
19	IS	171	0.068515
20	HAS_AUTHOR	269	0.107782
21	IMPLEMENTS_GENERIC	325	0.130219
22	HAS_LOWER_BOUND	402	0.161071
23	EXTENDS_GENERIC	450	0.180304
24	THROWS	634	0.254028
25	IMPLEMENTS	708	0.283678
26	DECLARES_TYPE_PARAMETER	972	0.389456
27	HAS_SIBLING	1004	0.402277
28	HAS_TEXT	1016	0.407086

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, Log]	CONTAINS_CHANGED	[File, Git, Log]	46599	7776	
1	[Java, ByteCode, Member, Method]	INVOKES	[Java, ByteCode, Member, Method]	18169	10566	
2	[Repository, Git]	HAS_FILE	[File, Git, Log]	8142	1	
3	[Repository, Git]	HAS_COMMIT	[Git, Commit, Log]	7776	1	
4	[Git, Author, Log]	AUTHORED	[Git, Commit, Log]	7776	269	
5	[Java, ByteCode, Member, Method]	HAS	[Java, ByteCode, Parameter]	7299	10566	
6	[Java, ByteCode, Member, Method]	READS	[Java, ByteCode, Member, Field]	6929	10566	
7	[Git, Commit, Log]	HAS_PARENT	[Git, Commit, Log]	6282	7776	
8	[Java, ByteCode, Parameter]	OF_TYPE	[Type, File, Java, ByteCode, JavaType]	5730	11202	
9	[Java, ByteCode, Bound]	OF_RAW_TYPE	[Type, File, Java, ByteCode, JavaType]	3218	6316	
10	[Java, ByteCode, Bound, ParameterizedType]	OF_RAW_TYPE	[Type, File, Java, ByteCode, JavaType]	2779	6542	
11	[Java, ByteCode, Bound, ParameterizedType]	HAS_ACTUAL_TYPE_ARGUMENT	[Java, ByteCode, Bound, WildcardType]	2723	6542	
12	[Java, ByteCode, Parameter]	OF_GENERIC_TYPE	[Java, ByteCode, Bound, ParameterizedType]	2435	11202	
13	[Java, ByteCode, Bound, ParameterizedType]	HAS_ACTUAL_TYPE_ARGUMENT	[Java, ByteCode, Bound, TypeVariable]	2230	6542	
14	[Java, ByteCode, Member, Constructor, Method]	WRITES	[Java, ByteCode, Member, Field]	1971	1654	
15	[Java, ByteCode, Member, Method]	RETURNS	[Type, File, Java, ByteCode, JavaType]	1892	10566	
16	[Java, Value, ByteCode, Annotation]	OF_TYPE	[Type, File, Java, ByteCode, ExternalAnnotatio...	1842	2225	
17	[Java, ByteCode, Parameter]	OF_GENERIC_TYPE	[Java, ByteCode, Bound]	1819	11202	
18	[Java, ByteCode, Member, Constructor, Method]	INVOKES	[Java, ByteCode, Member, Constructor, Method]	1744	1654	
19	[Java, ByteCode, Member, Constructor, Method]	HAS	[Java, ByteCode, Parameter]	1710	1654	
20	[Java, ByteCode, Member, Method]	INVOKES	[Java, ByteCode, Member, Constructor, Method]	1707	10566	
21	[Java, ByteCode, Parameter]	ANNOTATED_BY	[Java, Value, ByteCode, Annotation]	1594	11202	
22	[Java, ByteCode, Member, Constructor, Method]	INVOKES	[Java, ByteCode, Member, Method]	1537	1654	
23	[Java, ByteCode, Member, Method, Lambda]	INVOKES	[Java, ByteCode, Member, Method]	1535	769	
24	[Java, ByteCode, Bound, ParameterizedType]	HAS_ACTUAL_TYPE_ARGUMENT	[Java, ByteCode, Bound]	1530	6542	
25	[Xml, Element]	HAS_ELEMENT	[Xml, Element]	1522	1534	
26	[Java, ByteCode, Member, Method]	RETURNS	[Type, File, Java, ByteCode, Void]	1461	10566	
27	[Type, File, Java, ByteCode, JavaType]	DECLARES	[Java, ByteCode, Member, Method]	1279	597	
28	[Java, ByteCode, Member, Method, GenericDeclar...	INVOKES	[Java, ByteCode, Member, Method]	1278	510	

	sourceLabels	relationType	targetLabels	numberOfRelationships	numberOfNodesWithSameLabelsAsSource	numberOfNodesWithS
29	[Java, ByteCode, Member, Constructor, Method]	RETURNS	[Type, File, Java, ByteCode, Void]	1221		1654

Graph Density

total_number_of_nodes (vertices): 69405

total_number_of_relationships (edges): 249579

-> total directed graph density: 5.181228915777605e-05

-> total directed graph density in percent: 0.005181228915777605