

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: 68851

	nodeLabels	nodesWithThatLabels	nodesWithThatLabelsPercent
0	[Java, ByteCode, Parameter]	11184	16.243773
1	[Java, ByteCode, Method, Member]	10649	15.466733
2	[File, Git, Log]	7804	11.334621
3	[Git, Commit, Log]	7618	11.064473
4	[Java, ByteCode, Bound, ParameterizedType]	6537	9.494415
5	[Java, ByteCode, Bound]	6308	9.161813
6	[Java, ByteCode, Member, Field]	2849	4.137921
7	[Java, ByteCode, Bound, WildcardType]	2722	3.953465
8	[Java, Value, ByteCode, Annotation]	2225	3.231616
9	[Java, ByteCode, Constructor, Method, Member]	1649	2.395027
10	[Xml, Element]	1534	2.228000
11	[Xml, Text]	1016	1.475650
12	[Java, ByteCode, Bound, TypeVariable]	988	1.434983
13	[Java, ByteCode, Method, Member, Lambda]	767	1.114000
14	[Type, File, Java, ByteCode, Class]	699	1.015236
15	[Type, File, Java, ByteCode, JavaType]	596	0.865637
16	[Type, File, Java, ByteCode, ResolvedDuplicate...	542	0.787207
17	[Java, ByteCode, Method, Member, GenericDeclar...	525	0.762516
18	[Java, Value, ByteCode, Primitive]	467	0.678276
19	[Git, Author, Log]	260	0.377627
20	[Type, File, Java, ByteCode, Class, GenericDec...	215	0.312269
21	[Type, File, Java, ByteCode, ExternalType]	194	0.281768
22	[Type, File, Java, ByteCode, Interface]	166	0.241100
23	[Java, ByteCode, Bound, GenericArrayType]	144	0.209147
24	[Java, Value, ByteCode, Enum]	142	0.206242
25	[Maven, Dependency]	116	0.168480
26	[Value, Property]	109	0.158313
27	[Package, File, Directory, Java]	107	0.155408
28	[Value, Array]	104	0.151051
29	[Value, ManifestEntry]	91	0.132169

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>

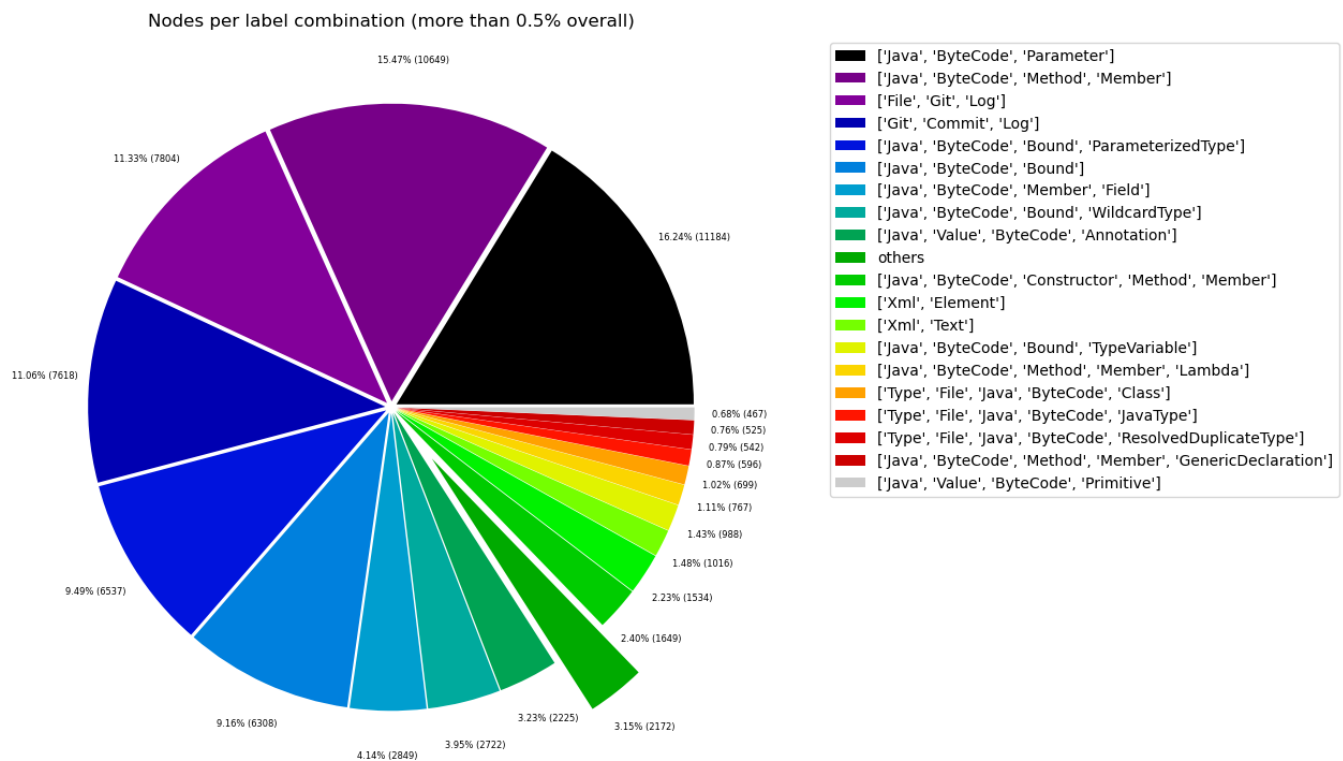


Table 1b - Lowest node count by label combination

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	0.001452
1	[Analyze, Task, jQAssistant]	1	0.001452
2	[Maven, Exclusion]	1	0.001452
3	[Java, ByteCode, Constructor, Method, Member, ...]	3	0.004357
4	[File, Maven, Xml, Pom, Document]	6	0.008714
5	[Type, File, Java, ByteCode, Void]	6	0.008714
6	[Java, ManifestSection]	6	0.008714
7	[File, Java, Manifest]	6	0.008714
8	[Artifact, File, Jar, Archive, Zip, Java]	6	0.008714
9	[File, Java, Properties]	8	0.011619
10	[File, Java, ServiceLoader]	9	0.013072
11	[Xml, Attribute]	12	0.017429
12	[Maven, ExecutionGoal]	14	0.020334
13	[Maven, PluginExecution]	14	0.020334
14	[Maven, Plugin]	16	0.023239
15	[Maven, Configuration]	16	0.023239
16	[jQAssistant, Rule, Concept]	19	0.027596
17	[Type, File, Java, ByteCode, PrimitiveType]	21	0.030501
18	[Xml, Namespace]	24	0.034858
19	[Type, File, Java, ByteCode, Enum]	25	0.036310
20	[Java, Value, ByteCode, Class]	28	0.040668
21	[File, Directory]	29	0.042120
22	[Type, File, Java, ByteCode, Annotation]	40	0.058096
23	[Type, File, Java, ByteCode, ExternalType, Ext...	65	0.094407
24	[Artifact, Maven]	69	0.100216
25	[Type, File, Java, ByteCode, GenericDeclaratio...	79	0.114741
26	[Value, ManifestEntry]	91	0.132169
27	[Value, Array]	104	0.151051
28	[Package, File, Directory, Java]	107	0.155408
29	[Value, Property]	109	0.158313

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)

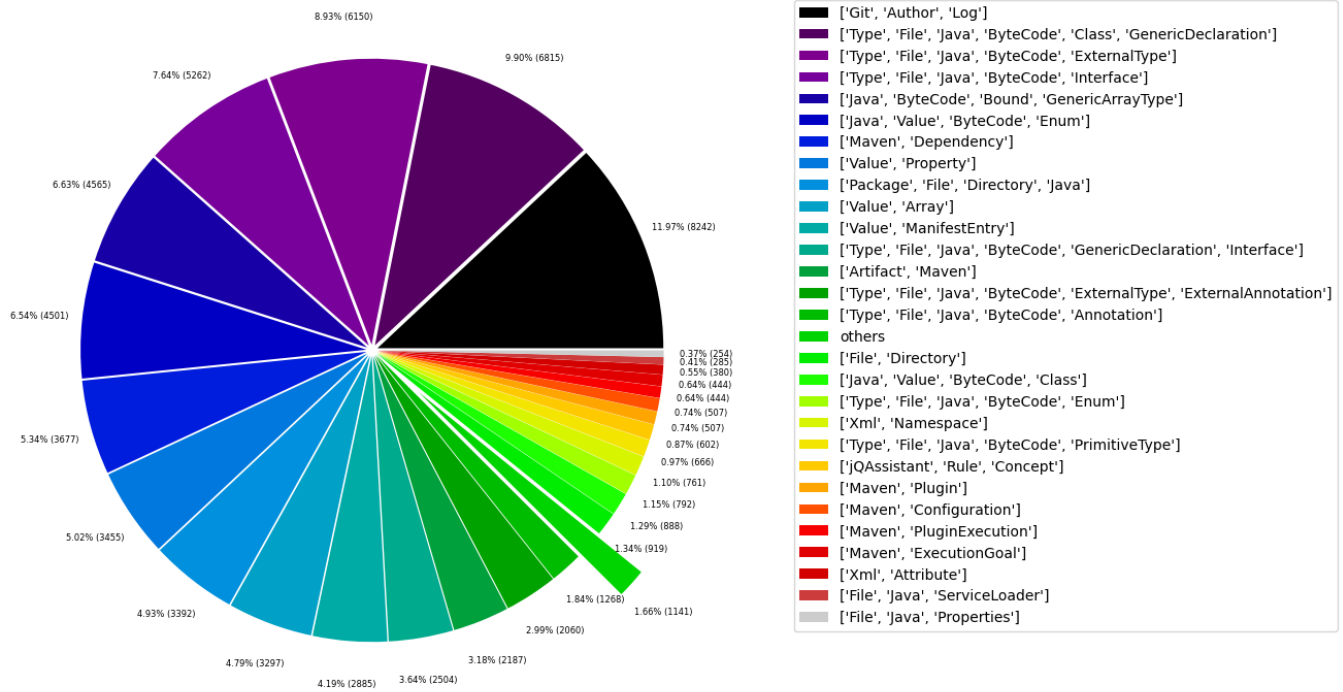


Table 1c - Highest node count by single label

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.

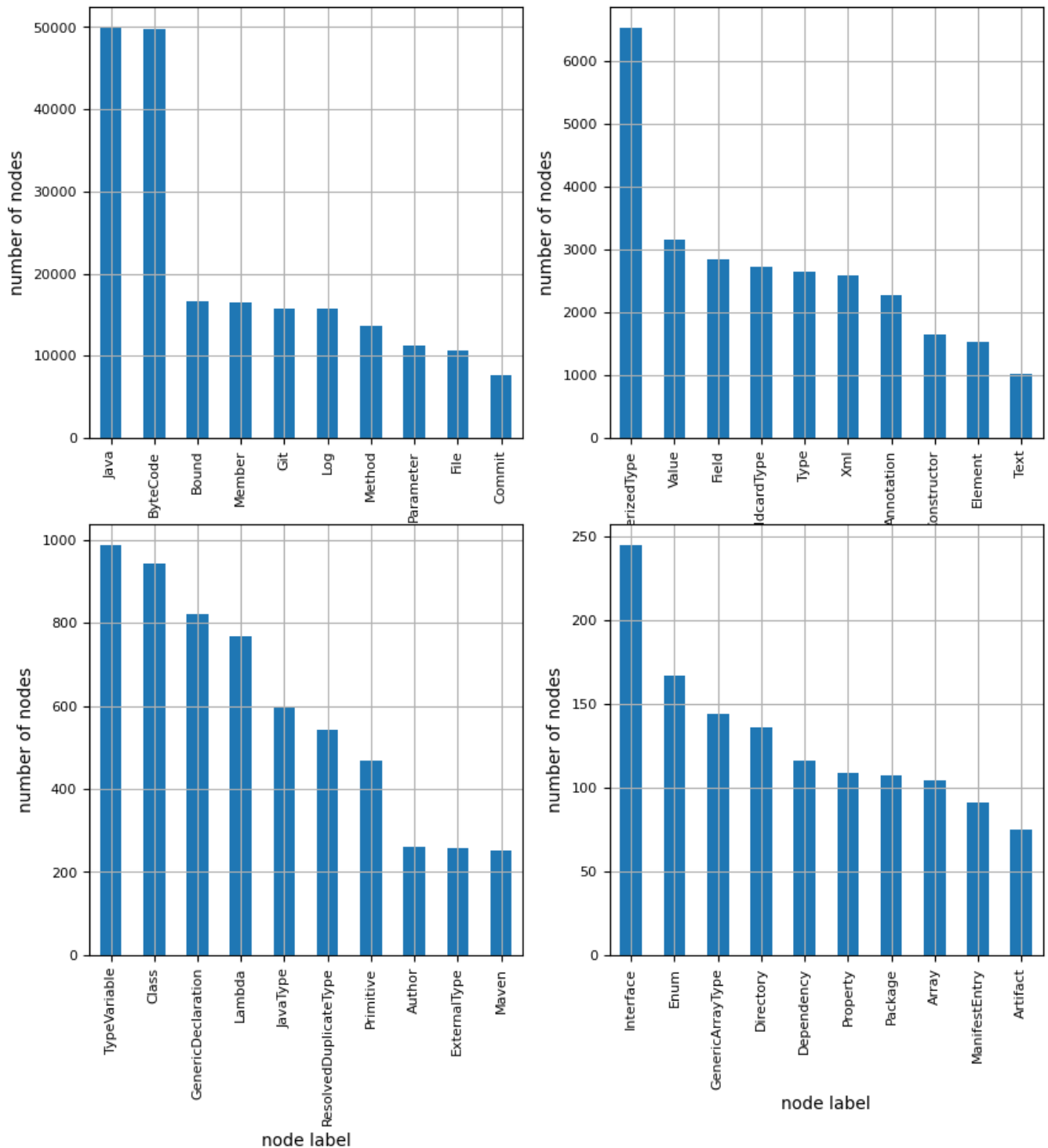
	nodeLabel	nodesWithThatLabel	nodesWithThatLabelPercent
0	Java	49977	72.587181
1	ByteCode	49835	72.380939
2	Bound	16699	24.253823
3	Member	16442	23.880554
4	Git	15683	22.778173
5	Log	15682	22.776721
6	Method	13593	19.742633
7	Parameter	11184	16.243773
8	File	10623	15.428970
9	Commit	7618	11.064473
10	ParameterizedType	6537	9.494415
11	Value	3166	4.598336
12	Field	2849	4.137921
13	WildcardType	2722	3.953465
14	Type	2648	3.845986
15	Xml	2592	3.764651
16	Annotation	2265	3.289713
17	Constructor	1652	2.399384
18	Element	1534	2.228000
19	Text	1016	1.475650
20	TypeVariable	988	1.434983
21	Class	942	1.368172
22	GenericDeclaration	822	1.193882
23	Lambda	767	1.114000
24	JavaType	596	0.865637
25	ResolvedDuplicateType	542	0.787207
26	Primitive	467	0.678276
27	Author	260	0.377627
28	ExternalType	259	0.376175
29	Maven	252	0.366008
30	Interface	245	0.355841
31	Enum	167	0.242553
32	GenericArrayType	144	0.209147
33	Directory	136	0.197528
34	Dependency	116	0.168480
35	Property	109	0.158313
36	Package	107	0.155408
37	Array	104	0.151051
38	ManifestEntry	91	0.132169
39	Artifact	75	0.108931

Chart 1c - Highest node count by label

Shows the 40 labels with the highest number of nodes.

<Figure size 640x480 with 0 Axes>

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: 247823

	relationshipType	nodesWithThatRelationshipType	nodesWithThatRelationshipTypePercent
0	CONTAINS_CHANGED	45786	18.475283
1	INVOKES	29650	11.964184
2	OF_TYPE	17618	7.109106
3	DEPENDS_ON	17426	7.031631
4	DECLARES	16804	6.780646
5	OF_RAW_TYPE	15183	6.126550
6	HAS	11884	4.795358
7	RETURNS	10623	4.286527
8	HAS_FILE	7804	3.149022
9	READS	7683	3.100197
10	AUTHORED	7618	3.073968
11	HAS_COMMIT	7618	3.073968
12	HAS_ACTUAL_TYPE_ARGUMENT	7495	3.024336
13	HAS_PARENT	6162	2.486452
14	OF_GENERIC_TYPE	5346	2.157185
15	SIMILAR	3416	1.378403
16	RETURNS_GENERIC	3250	1.311420
17	WRITES	3065	1.236770
18	CONTAINS	3027	1.221436
19	RESOLVES_TO	2912	1.175032
20	ANNOTATED_BY	2213	0.892976
21	HAS_FIRST_CHILD	1534	0.618990
22	HAS_LAST_CHILD	1534	0.618990
23	HAS_ELEMENT	1522	0.614148
24	REQUIRES	1424	0.574604
25	HAS_UPPER_BOUND	1405	0.566937
26	EXTENDS	1267	0.511252
27	HAS_TEXT	1016	0.409970
28	HAS_SIBLING	1004	0.405128
29	DECLARES_TYPE_PARAMETER	971	0.391812

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>

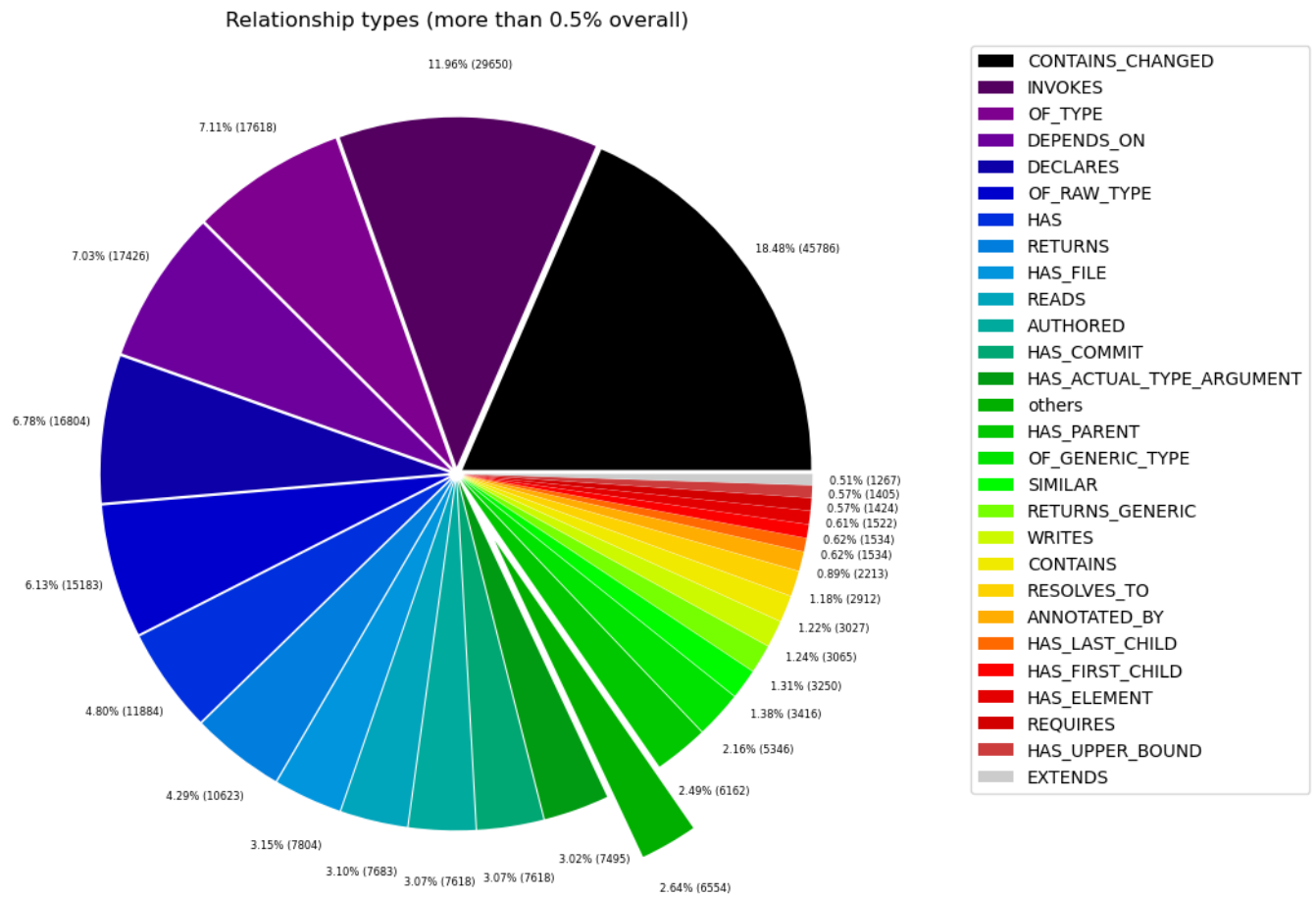


Table 2b - Lowest relationship count by type

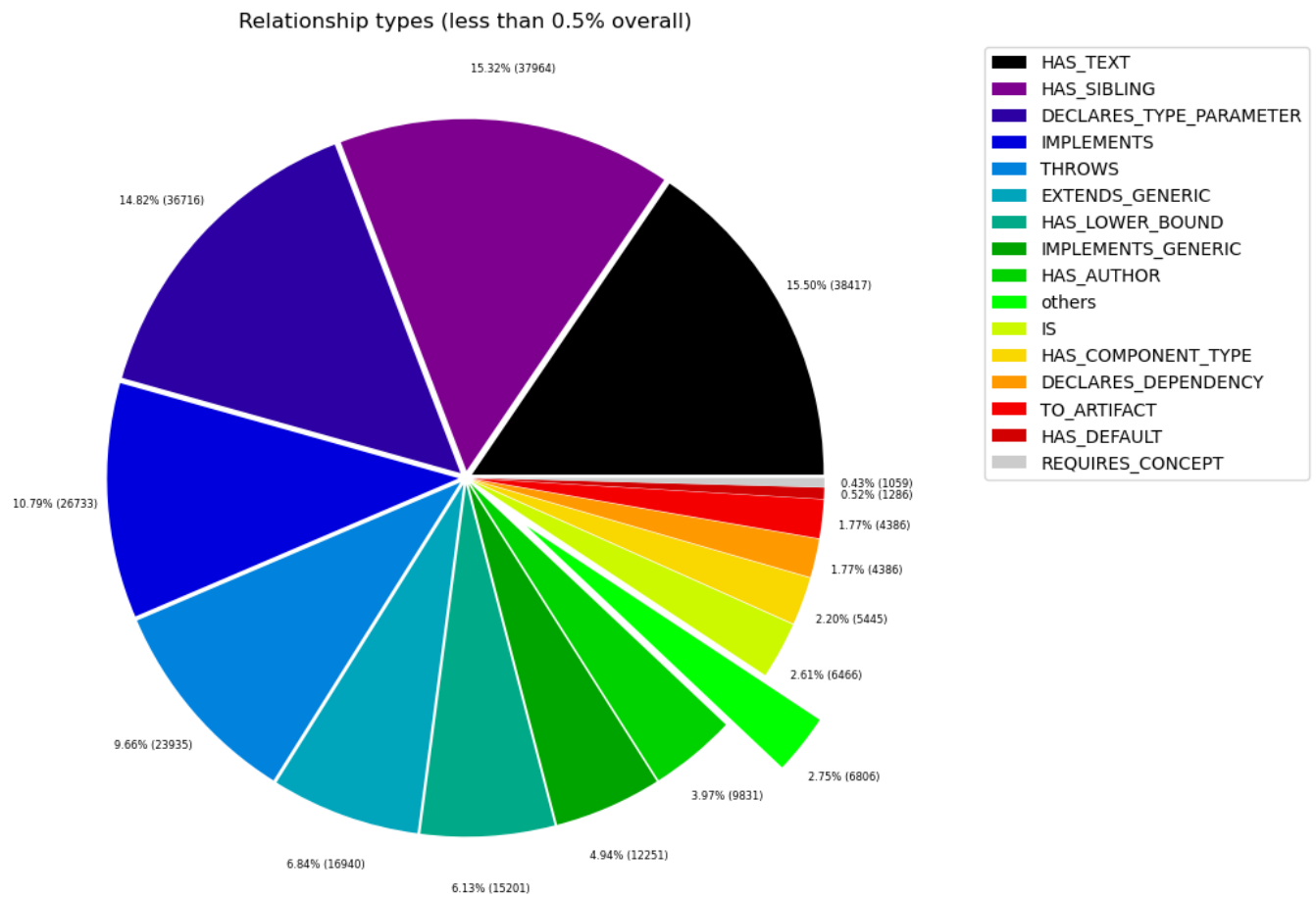
Lists the 30 relationships type with the lowest number of occurrences up to 0.5% of the total node count. This is essentially breaking down the "others" slice from the chart above.

	relationshipType	nodesWithThatRelationshipType	nodesWithThatRelationshipTypePercent
0	EXCLUDES	1	0.000404
1	THROWS_GENERIC	5	0.002018
2	DESCRIBES	6	0.002421
3	HAS_ROOT_ELEMENT	8	0.003228
4	OF_NAMESPACE	12	0.004842
5	HAS_ATTRIBUTE	12	0.004842
6	HAS_GOAL	14	0.005649
7	HAS_EXECUTION	14	0.005649
8	USES_PLUGIN	16	0.006456
9	IS_ARTIFACT	16	0.006456
10	HAS_CONFIGURATION	16	0.006456
11	REQUIRES_TYPE_PARAMETER	17	0.006860
12	INCLUDES_CONCEPT	19	0.007667
13	DECLARES_NAMESPACE	24	0.009684
14	REQUIRES_CONCEPT	28	0.011298
15	HAS_DEFAULT	34	0.013719
16	TO_ARTIFACT	116	0.046808
17	DECLARES_DEPENDENCY	116	0.046808
18	HAS_COMPONENT_TYPE	144	0.058106
19	IS	171	0.069001
20	HAS_AUTHOR	260	0.104914
21	IMPLEMENTS_GENERIC	324	0.130738
22	HAS_LOWER_BOUND	402	0.162213
23	EXTENDS_GENERIC	448	0.180774
24	THROWS	633	0.255424
25	IMPLEMENTS	707	0.285284
26	DECLARES_TYPE_PARAMETER	971	0.391812
27	HAS_SIBLING	1004	0.405128
28	HAS_TEXT	1016	0.409970

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]	45786		7618
1	[Java, ByteCode, Method, Member]	INVOKES	[Java, ByteCode, Method, Member]	18138		10561
2	[Repository, Git]	HAS_FILE	[File, Git, Log]	7804		1
3	[Repository, Git]	HAS_COMMIT	[Git, Commit, Log]	7618		1
4	[Git, Author, Log]	AUTHORED	[Git, Commit, Log]	7618		260
5	[Java, ByteCode, Method, Member]	HAS	[Java, ByteCode, Parameter]	7290		10561
6	[Java, ByteCode, Method, Member]	READS	[Java, ByteCode, Member, Field]	6906		10561
7	[Git, Commit, Log]	HAS_PARENT	[Git, Commit, Log]	6156		7618
8	[Java, ByteCode, Parameter]	OF_TYPE	[Type, File, Java, ByteCode, JavaType]	5720		11184
9	[Java, ByteCode, Bound]	OF_RAW_TYPE	[Type, File, Java, ByteCode, JavaType]	3213		6308
10	[Java, ByteCode, Bound, ParameterizedType]	OF_RAW_TYPE	[Type, File, Java, ByteCode, JavaType]	2777		6537
11	[Java, ByteCode, Bound, ParameterizedType]	HAS_ACTUAL_TYPE_ARGUMENT	[Java, ByteCode, Bound, WildcardType]	2722		6537
12	[Java, ByteCode, Parameter]	OF_GENERIC_TYPE	[Java, ByteCode, Bound, ParameterizedType]	2434		11184
13	[Java, ByteCode, Bound, ParameterizedType]	HAS_ACTUAL_TYPE_ARGUMENT	[Java, ByteCode, Bound, TypeVariable]	2228		6537
14	[Java, ByteCode, Constructor, Method, Member]	WRITES	[Java, ByteCode, Member, Field]	1971		1649
15	[Java, ByteCode, Method, Member]	RETURNS	[Type, File, Java, ByteCode, JavaType]	1890		10561
16	[Java, Value, ByteCode, Annotation]	OF_TYPE	[Type, File, Java, ByteCode, ExternalType, Ext...	1842		2225
17	[Java, ByteCode, Parameter]	OF_GENERIC_TYPE	[Java, ByteCode, Bound]	1818		11184
18	[Java, ByteCode, Constructor, Method, Member]	INVOKES	[Java, ByteCode, Constructor, Method, Member]	1740		1649
19	[Java, ByteCode, Constructor, Method, Member]	HAS	[Java, ByteCode, Parameter]	1710		1649
20	[Java, ByteCode, Method, Member]	INVOKES	[Java, ByteCode, Constructor, Method, Member]	1707		10561
21	[Java, ByteCode, Parameter]	ANNOTATED_BY	[Java, Value, ByteCode, Annotation]	1594		11184
22	[Java, ByteCode, Constructor, Method, Member]	INVOKES	[Java, ByteCode, Method, Member]	1535		1649
23	[Java, ByteCode, Method, Member, Lambda]	INVOKES	[Java, ByteCode, Method, Member]	1532		767
24	[Java, ByteCode, Bound, ParameterizedType]	HAS_ACTUAL_TYPE_ARGUMENT	[Java, ByteCode, Bound]	1527		6537
25	[Xml, Element]	HAS_ELEMENT	[Xml, Element]	1522		1534
26	[Java, ByteCode, Method, Member]	RETURNS	[Type, File, Java, ByteCode, Void]	1465		10561
27	[Java, ByteCode, Method, Member, GenericDeclar...	INVOKES	[Java, ByteCode, Method, Member]	1282		511
28	[Type, File, Java, ByteCode, JavaType]	DECLARES	[Java, ByteCode, Method, Member]	1277		596
29	[Java, ByteCode, Constructor, Method, Member]	RETURNS	[Type, File, Java, ByteCode, Void]	1221		1649

Graph Density

total_number_of_nodes (vertices): 68851

total_number_of_relationships (edges): 247823

-> total directed graph density: 5.2279017005631826e-05

-> total directed graph density in percent: 0.005227901700563182