

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	[Java, ByteCode, Member, Method]	13214	20.242034
1	[Java, ByteCode, Parameter]	13029	19.958640
2	[Java, ByteCode, Bound, ParameterizedType]	7176	10.992647
3	[Java, ByteCode, Bound]	7118	10.903799
4	[Java, ByteCode, Member, Field]	3505	5.369179
5	[Java, ByteCode, Bound, WildcardType]	2908	4.454657
6	[Java, Value, ByteCode, Annotation]	2822	4.322917
7	[Xml, Element]	2144	3.284314
8	[Java, ByteCode, Member, Method, Constructor]	2052	3.143382
9	[Xml, Text]	1436	2.199755
10	[Java, ByteCode, Bound, TypeVariable]	1096	1.678922
11	[Java, ByteCode, Member, Method, Lambda]	942	1.443015
12	[Type, File, Java, ByteCode, ResolvedDuplicate...	899	1.377145
13	[Type, File, Java, ByteCode, Class]	864	1.323529
14	[Type, File, Java, ByteCode, JavaType]	748	1.145833
15	[Java, Value, ByteCode, Primitive]	652	0.998775
16	[Java, ByteCode, GenericDeclaration, Member, M...	569	0.871630
17	[Json, Key]	568	0.870098
18	[Value, Json, Scalar]	551	0.844056
19	[Type, File, Java, ByteCode, ExternalType]	396	0.606618
20	[Value, Array]	267	0.409007
21	[Type, File, Java, ByteCode, Class, GenericDec...	236	0.361520
22	[Value, Property]	202	0.309436
23	[Type, File, Java, ByteCode, Interface]	188	0.287990
24	[Java, Value, ByteCode, Class]	172	0.263480
25	[Maven, Dependency]	163	0.249694
26	[Java, ByteCode, Bound, GenericArrayType]	158	0.242034
27	[Java, Value, ByteCode, Enum]	150	0.229779
28	[Package, File, Directory, Java]	139	0.212929
29	[Value, Json, Object]	135	0.206801

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)

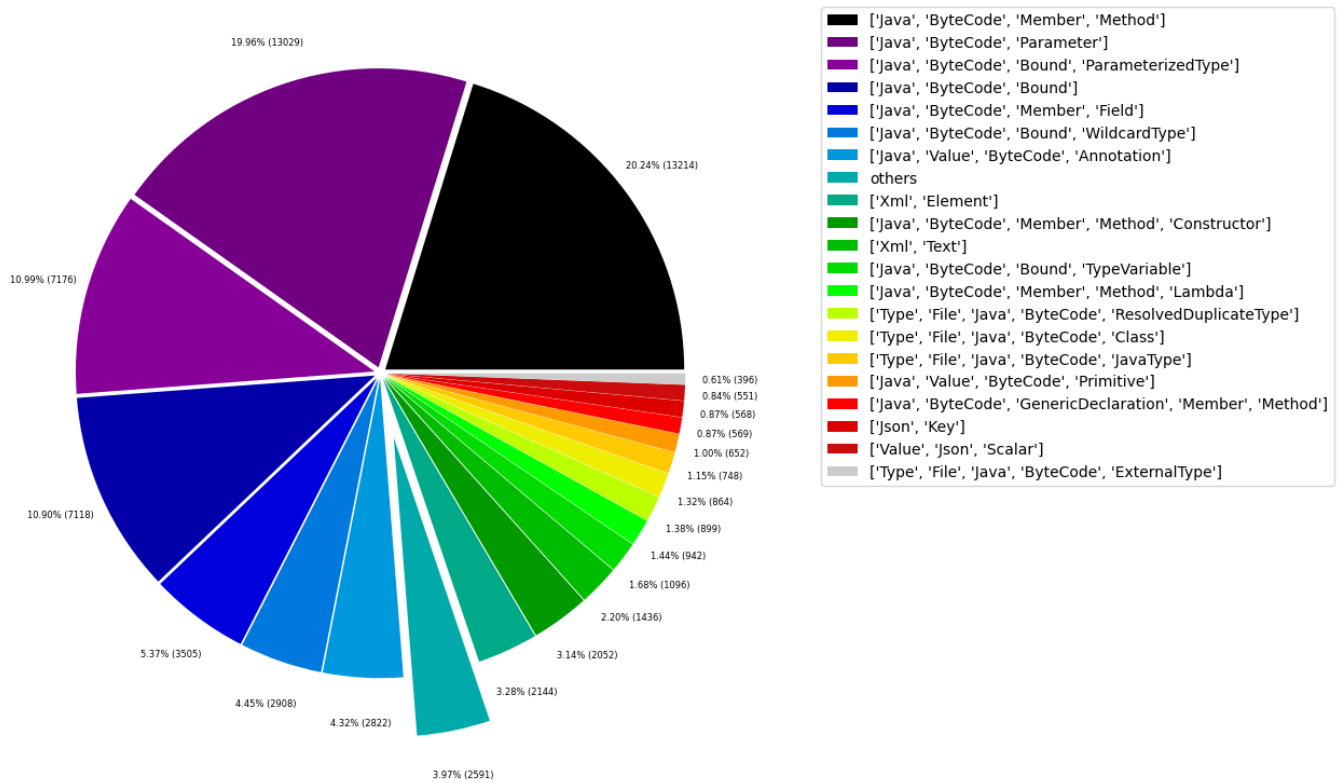


Table 1b - Lowest node count by label combination

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	0.001532
1	[File, TS, Scan]	1	0.001532
2	[Package, File, Json, NPM]	1	0.001532
3	[File, Json]	2	0.003064
4	[File]	3	0.004596
5	[Java, ByteCode, GenericDeclaration, Member, M...	4	0.006127
6	[Maven, Exclusion]	5	0.007659
7	[Value, Array, Json]	6	0.009191
8	[Dependency, NPM]	7	0.010723
9	[Type, File, Java, ByteCode, Void]	9	0.013787
10	[File, Maven, Xml, Pom, Document]	9	0.013787
11	[Java, ManifestSection]	9	0.013787
12	[File, Java, Manifest]	9	0.013787
13	[Artifact, File, Jar, Archive, Zip, Java]	9	0.013787
14	[File, Java, ServiceLoader]	10	0.015319
15	[File, Java, Properties]	12	0.018382
16	[Maven, PluginExecution]	16	0.024510
17	[Maven, ExecutionGoal]	16	0.024510
18	[Xml, Attribute]	18	0.027574
19	[jQAssistant, Rule, Concept]	19	0.029105
20	[Maven, Configuration]	21	0.032169
21	[Maven, Plugin]	21	0.032169
22	[Type, File, Java, ByteCode, Enum]	28	0.042892
23	[Type, File, Java, ByteCode, PrimitiveType]	29	0.044424
24	[Xml, Namespace]	36	0.055147
25	[Type, File, Java, ByteCode, Annotation]	43	0.065870
26	[File, Directory]	47	0.071998
27	[Type, File, Java, ByteCode, GenericDeclaratio...	85	0.130208
28	[Artifact, Maven]	92	0.140931
29	[Type, File, Java, ByteCode, ExternalAnnotatio...	93	0.142463

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)

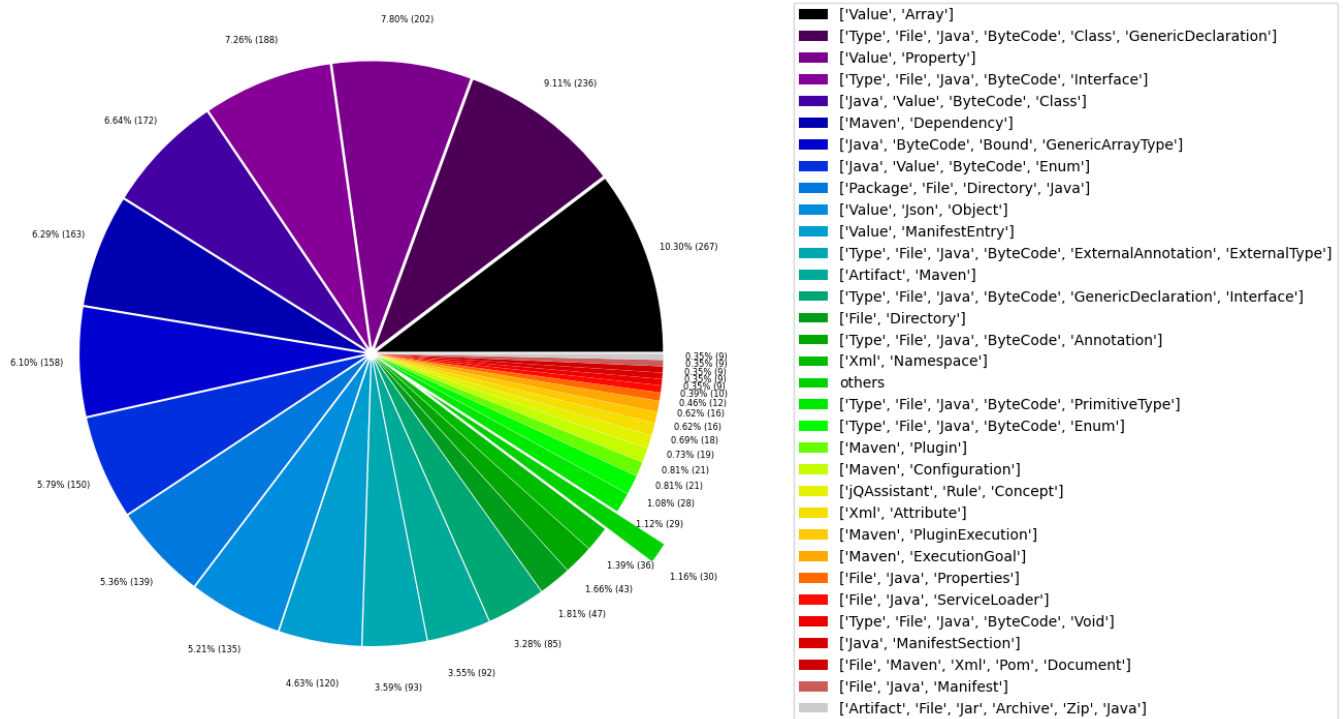


Table 1c - Highest node count by single label

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.

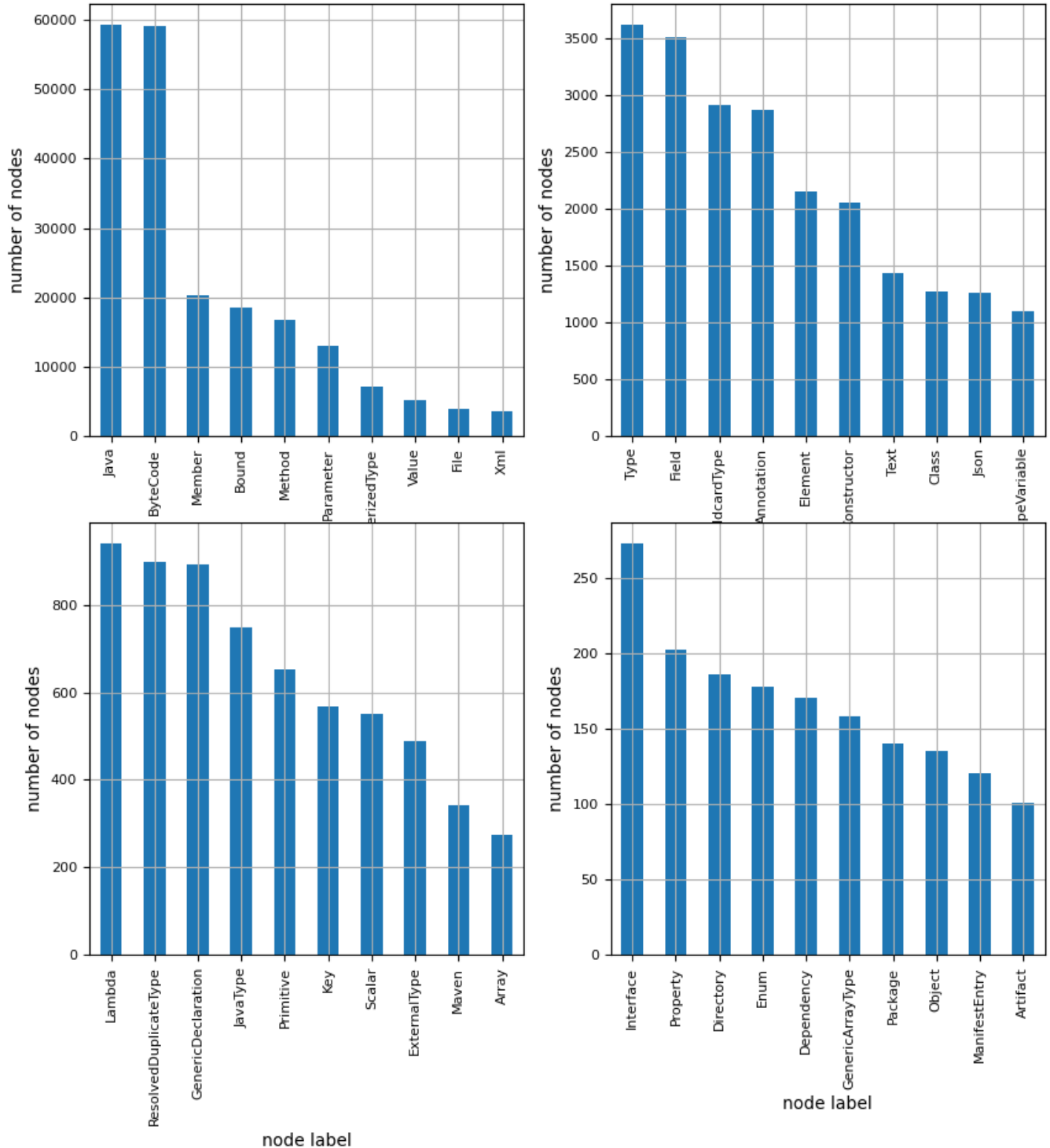
	nodeLabel	nodesWithThatLabel	nodesWithThatLabelPercent
0	Java	59373	90.951287
1	ByteCode	59185	90.663297
2	Member	20286	31.075368
3	Bound	18456	28.272059
4	Method	16781	25.706189
5	Parameter	13029	19.958640
6	ParameterizedType	7176	10.992647
7	Value	5077	7.777267
8	File	3860	5.912990
9	Xml	3643	5.580576
10	Type	3618	5.542279
11	Field	3505	5.369179
12	WildcardType	2908	4.454657
13	Annotation	2865	4.388787
14	Element	2144	3.284314
15	Constructor	2056	3.149510
16	Text	1436	2.199755
17	Class	1272	1.948529
18	Json	1263	1.934743
19	TypeVariable	1096	1.678922
20	Lambda	942	1.443015
21	ResolvedDuplicateType	899	1.377145
22	GenericDeclaration	894	1.369485
23	JavaType	748	1.145833
24	Primitive	652	0.998775
25	Key	568	0.870098
26	Scalar	551	0.844056
27	ExternalType	489	0.749081
28	Maven	343	0.525429
29	Array	273	0.418199
30	Interface	273	0.418199
31	Property	202	0.309436
32	Directory	186	0.284926
33	Enum	178	0.272672
34	Dependency	170	0.260417
35	GenericArrayType	158	0.242034
36	Package	140	0.214461
37	Object	135	0.206801
38	ManifestEntry	120	0.183824
39	Artifact	101	0.154718

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: 208957

	relationshipType	nodesWithThatRelationshipType	nodesWithThatRelationshipTypePercent
0	INVOKES	35712	17.090598
1	DEPENDS_ON	21931	10.495461
2	OF_TYPE	21394	10.238470
3	DECLARES	20731	9.921180
4	OF_RAW_TYPE	17093	8.180152
5	HAS	14125	6.759764
6	RETURNS	12578	6.019420
7	READS	9164	4.385591
8	HAS_ACTUAL_TYPE_ARGUMENT	8288	3.966366
9	OF_GENERIC_TYPE	5906	2.826419
10	SIMILAR	3977	1.903262
11	CONTAINS	3823	1.829563
12	WRITES	3818	1.827170
13	RETURNS_GENERIC	3545	1.696521
14	ANNOTATED_BY	2810	1.344774
15	RESOLVES_TO	2571	1.230397
16	REQUIRES	2174	1.040405
17	HAS_FIRST_CHILD	2144	1.026048
18	HAS_LAST_CHILD	2144	1.026048
19	HAS_ELEMENT	2126	1.017434
20	HAS_UPPER_BOUND	1523	0.728858
21	EXTENDS	1498	0.716894
22	HAS_TEXT	1436	0.687223
23	HAS_SIBLING	1418	0.678609
24	THROWS	1357	0.649416
25	DECLARES_TYPE_PARAMETER	1075	0.514460
26	IMPLEMENTS	843	0.403432
27	HAS_KEY	568	0.271826
28	HAS_VALUE	568	0.271826
29	EXTENDS_GENERIC	508	0.243112

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)

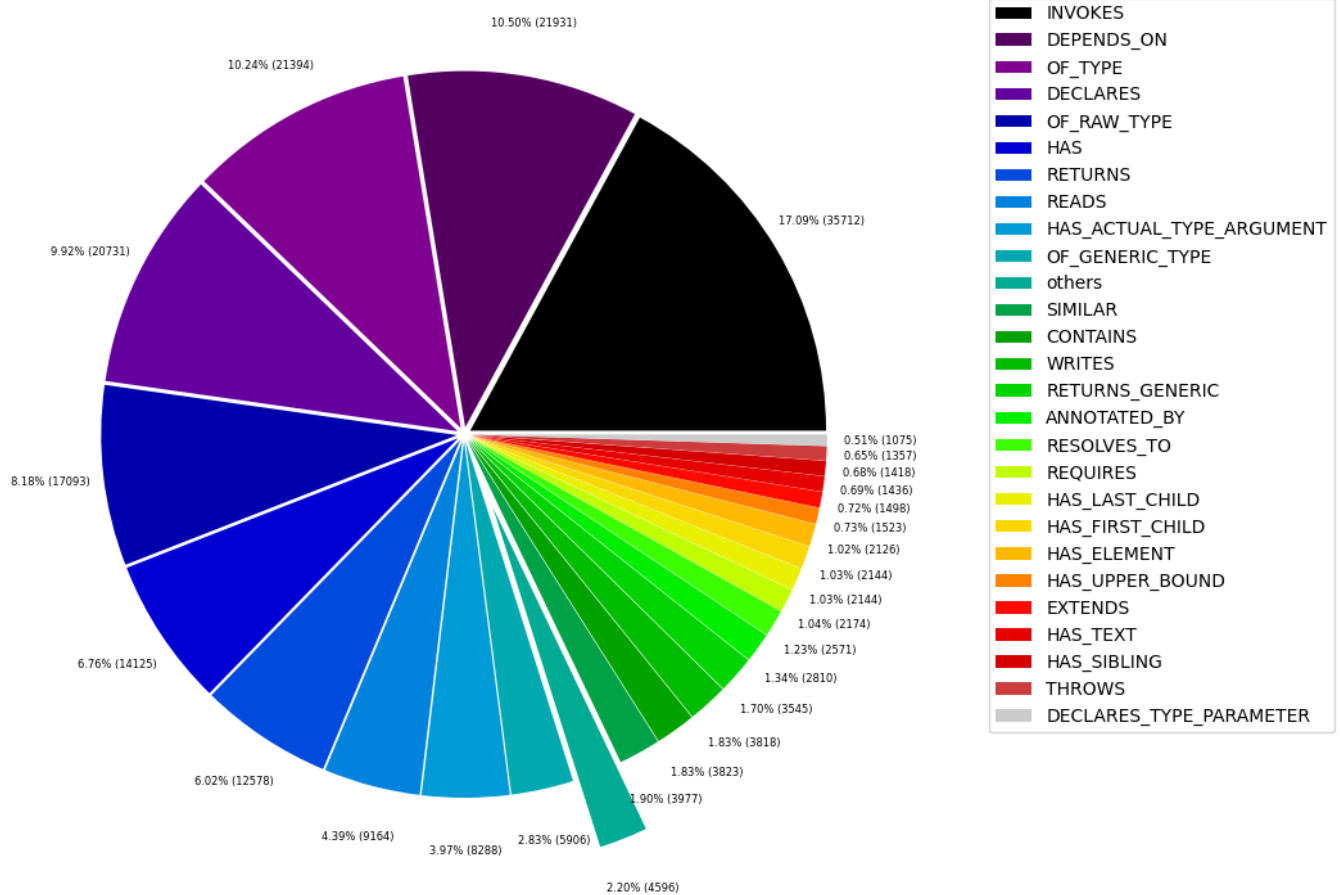


Table 2b - Lowest relationship count by type

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.

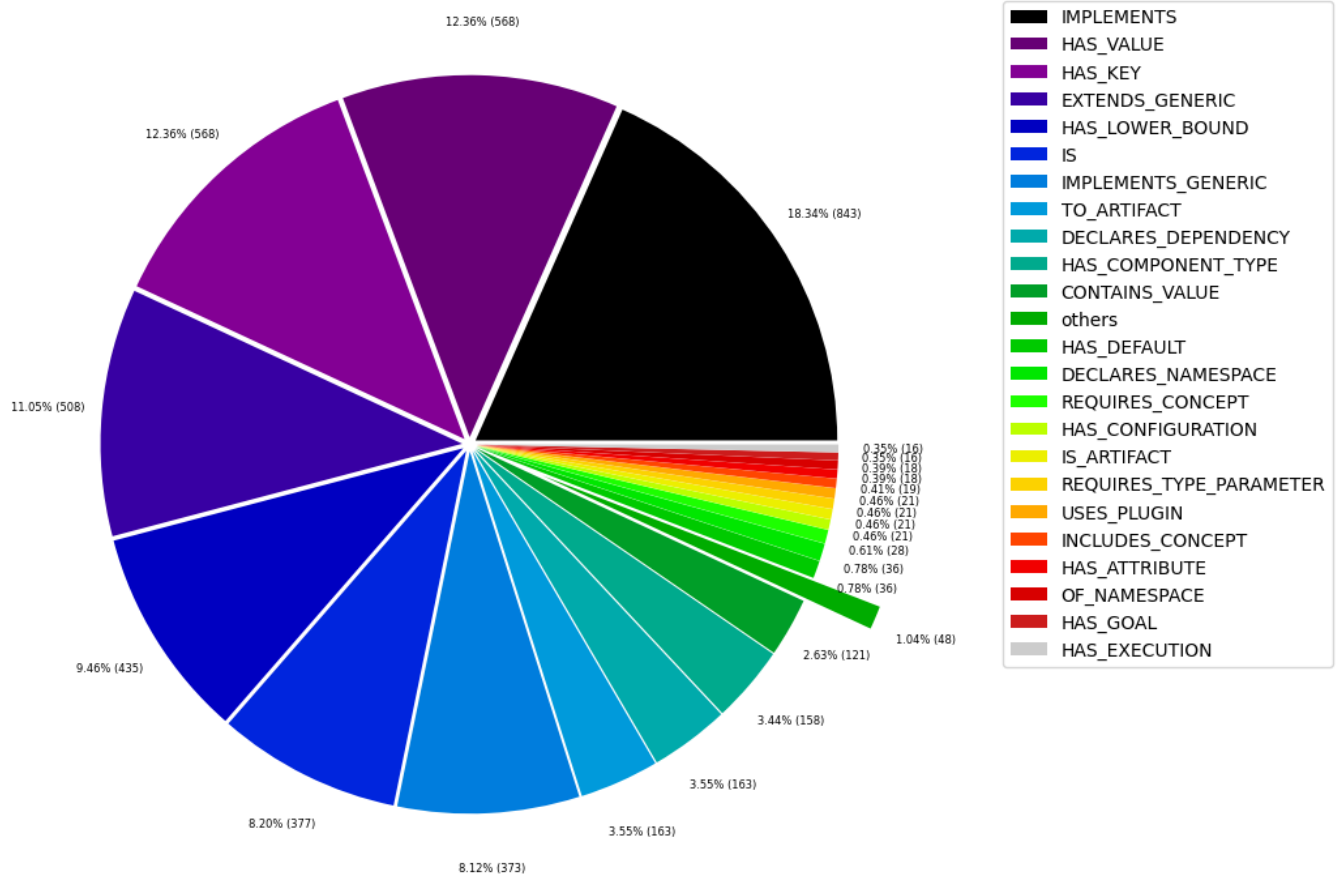
	relationshipType	nodesWithThatRelationshipType	nodesWithThatRelationshipTypePercent
0	HAS_PROPERTY	1	0.000479
1	THROWS_GENERIC	5	0.002393
2	EXCLUDES	5	0.002393
3	DECLARES_DEV_DEPENDENCY	7	0.003350
4	HAS_PARENT	9	0.004307
5	DESCRIBES	9	0.004307
6	HAS_ROOT_ELEMENT	12	0.005743
7	HAS_GOAL	16	0.007657
8	HAS_EXECUTION	16	0.007657
9	OF_NAMESPACE	18	0.008614
10	HAS_ATTRIBUTE	18	0.008614
11	INCLUDES_CONCEPT	19	0.009093
12	HAS_CONFIGURATION	21	0.010050
13	USES_PLUGIN	21	0.010050
14	REQUIRES_TYPE_PARAMETER	21	0.010050
15	IS_ARTIFACT	21	0.010050
16	REQUIRES_CONCEPT	28	0.013400
17	HAS_DEFAULT	36	0.017228
18	DECLARES_NAMESPACE	36	0.017228
19	CONTAINS_VALUE	121	0.057907
20	HAS_COMPONENT_TYPE	158	0.075614
21	TO_ARTIFACT	163	0.078006
22	DECLARES_DEPENDENCY	163	0.078006
23	IMPLEMENTS_GENERIC	373	0.178506
24	IS	377	0.180420
25	HAS_LOWER_BOUND	435	0.208177
26	EXTENDS_GENERIC	508	0.243112
27	HAS_VALUE	568	0.271826
28	HAS_KEY	568	0.271826
29	IMPLEMENTS	843	0.403432

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	[Java, ByteCode, Member, Method]	INVOKES	[Java, ByteCode, Member, Method]	21826	13120	
1	[Java, ByteCode, Member, Method]	HAS	[Java, ByteCode, Parameter]	8360	13120	
2	[Java, ByteCode, Member, Method]	READS	[Java, ByteCode, Member, Field]	8218	13120	
3	[Java, ByteCode, Parameter]	OF_TYPE	[Type, File, Java, ByteCode, JavaType]	6371	13029	
4	[Type, File, Java, ByteCode, Class]	DECLARES	[Java, ByteCode, Member, Method]	5122	814	
5	[Type, File, Java, ByteCode, Class]	DEPENDS_ON	[Type, File, Java, ByteCode, JavaType]	4481	814	
6	[Java, ByteCode, Bound]	OF_RAW_TYPE	[Type, File, Java, ByteCode, JavaType]	3570	7118	
7	[Java, ByteCode, Bound, ParameterizedType]	OF_RAW_TYPE	[Type, File, Java, ByteCode, JavaType]	3053	7176	
8	[Java, ByteCode, Bound, ParameterizedType]	HAS_ACTUAL_TYPE_ARGUMENT	[Java, ByteCode, Bound, WildcardType]	2908	7176	
9	[Java, ByteCode, Parameter]	OF_GENERIC_TYPE	[Java, ByteCode, Bound, ParameterizedType]	2657	13029	
10	[Java, ByteCode, Bound, ParameterizedType]	HAS_ACTUAL_TYPE_ARGUMENT	[Java, ByteCode, Bound, TypeVariable]	2454	7176	
11	[Java, ByteCode, Member, Method, Constructor]	WRITES	[Java, ByteCode, Member, Field]	2438	2052	
12	[Java, Value, ByteCode, Annotation]	OF_TYPE	[Type, File, Java, ByteCode, ExternalAnnotatio...	2341	2822	
13	[Type, File, Java, ByteCode, Class]	DECLARES	[Java, ByteCode, Member, Field]	2204	814	
14	[Xml, Element]	HAS_ELEMENT	[Xml, Element]	2126	2144	
15	[Java, ByteCode, Member, Method, Constructor]	INVOKES	[Java, ByteCode, Member, Method, Constructor]	2117	2052	
16	[Type, File, Java, ByteCode, Class, GenericDec...	DECLARES	[Java, ByteCode, Member, Method]	2114	231	
17	[Java, ByteCode, Member, Method]	RETURNS	[Type, File, Java, ByteCode, JavaType]	2091	13120	
18	[Java, ByteCode, Member, Method, Constructor]	HAS	[Java, ByteCode, Parameter]	2027	2052	
19	[Java, ByteCode, Parameter]	OF_GENERIC_TYPE	[Java, ByteCode, Bound]	2022	13029	
20	[Java, ByteCode, Member, Method]	INVOKES	[Java, ByteCode, Member, Method, Constructor]	2020	13120	
21	[Java, ByteCode, Member, Method, Lambda]	INVOKES	[Java, ByteCode, Member, Method]	1882	942	
22	[Java, ByteCode, Member, Method, Constructor]	INVOKES	[Java, ByteCode, Member, Method]	1810	2052	
23	[Java, ByteCode, Bound, ParameterizedType]	HAS_ACTUAL_TYPE_ARGUMENT	[Java, ByteCode, Bound]	1807	7176	
24	[Java, ByteCode, Member, Method]	RETURNS	[Type, File, Java, ByteCode, Void]	1787	13120	
25	[Java, ByteCode, Parameter]	ANNOTATED_BY	[Java, Value, ByteCode, Annotation]	1731	13029	
26	[Java, ByteCode, GenericDeclaration, Member, M...	INVOKES	[Java, ByteCode, Member, Method]	1725	555	
27	[Type, File, Java, ByteCode, Class]	SIMILAR	[Type, File, Java, ByteCode, Class]	1574	814	
28	[Type, File, Java, ByteCode, Class, GenericDec...	DEPENDS_ON	[Type, File, Java, ByteCode, JavaType]	1555	231	

	sourceLabels	relationType	targetLabels	numberOfRelationships	numberOfNodesWithSameLabelsAsSource	numberOfNodesWithS
29	[Type, File, Java, ByteCode, JavaType]	DECLARES	[Java, ByteCode, Member, Method]	1541		748

Graph Density

```

total_number_of_nodes (vertices): 65280
total_number_of_relationships (edges): 208957
-> total directed graph density: 4.903467326819513e-05
-> total directed graph density in percent: 0.004903467326819512

```