

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]	13207	20.233171
1	[Java, ByteCode, Parameter]	13029	19.960474
2	[Java, ByteCode, Bound, ParameterizedType]	7176	10.993658
3	[Java, ByteCode, Bound]	7118	10.904801
4	[Java, ByteCode, Member, Field]	3505	5.369672
5	[Java, ByteCode, Bound, WildcardType]	2908	4.455066
6	[Java, Value, ByteCode, Annotation]	2822	4.323314
7	[Xml, Element]	2144	3.284616
8	[Java, ByteCode, Member, Method, Constructor]	2053	3.145203
9	[Xml, Text]	1436	2.199957
10	[Java, ByteCode, Bound, TypeVariable]	1096	1.679076
11	[Java, ByteCode, Member, Method, Lambda]	942	1.443147
12	[Type, File, Java, ByteCode, ResolvedDuplicate...	899	1.377271
13	[Type, File, Java, ByteCode, Class]	864	1.323651
14	[Type, File, Java, ByteCode, JavaType]	748	1.145939
15	[Java, Value, ByteCode, Primitive]	652	0.998866
16	[Java, ByteCode, GenericDeclaration, Member, M...	569	0.871710
17	[Json, Key]	568	0.870178
18	[Value, Json, Scalar]	551	0.844134
19	[Type, File, Java, ByteCode, ExternalType]	396	0.606673
20	[Value, Array]	267	0.409045
21	[Type, File, Java, ByteCode, Class, GenericDec...	236	0.361553
22	[Value, Property]	202	0.309465
23	[Type, File, Java, ByteCode, Interface]	188	0.288017
24	[Java, Value, ByteCode, Class]	172	0.263505
25	[Maven, Dependency]	163	0.249717
26	[Java, ByteCode, Bound, GenericArrayType]	158	0.242057
27	[Java, Value, ByteCode, Enum]	150	0.229801
28	[Package, File, Directory, Java]	139	0.212948
29	[Value, Json, Object]	135	0.206820

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)

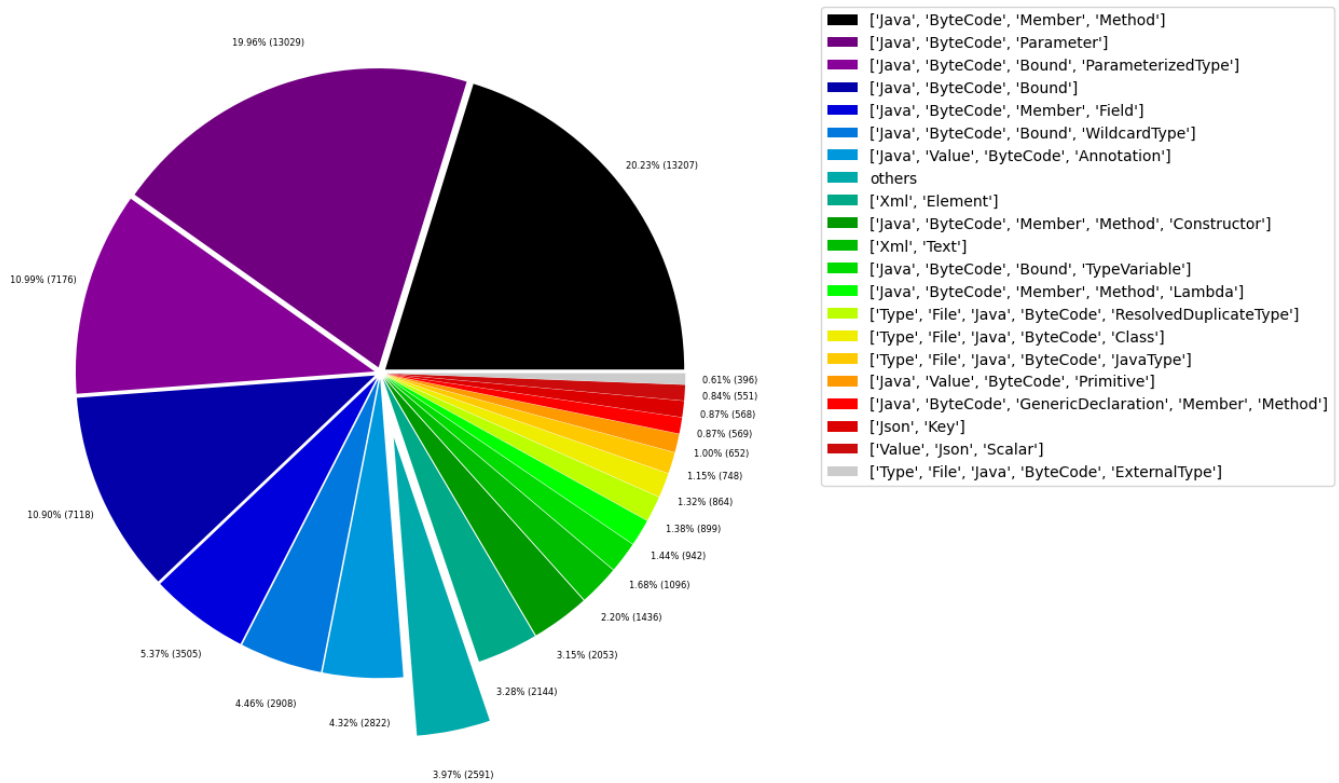


Table 1b - Lowest node count by label combination

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	0.006128
6	[Maven, Exclusion]	5	0.007660
7	[Value, Array, Json]	6	0.009192
8	[Dependency, NPM]	7	0.010724
9	[Type, File, Java, ByteCode, Void]	9	0.013788
10	[File, Maven, Xml, Pom, Document]	9	0.013788
11	[Java, ManifestSection]	9	0.013788
12	[File, Java, Manifest]	9	0.013788
13	[Artifact, File, Jar, Archive, Zip, Java]	9	0.013788
14	[File, Java, ServiceLoader]	10	0.015320
15	[File, Java, Properties]	12	0.018384
16	[Maven, PluginExecution]	16	0.024512
17	[Maven, ExecutionGoal]	16	0.024512
18	[Xml, Attribute]	18	0.027576
19	[jQAssistant, Rule, Concept]	19	0.029108
20	[Maven, Configuration]	21	0.032172
21	[Maven, Plugin]	21	0.032172
22	[Type, File, Java, ByteCode, Enum]	28	0.042896
23	[Type, File, Java, ByteCode, PrimitiveType]	29	0.044428
24	[Xml, Namespace]	36	0.055152
25	[Type, File, Java, ByteCode, Annotation]	43	0.065876
26	[File, Directory]	47	0.072004
27	[Type, File, Java, ByteCode, GenericDeclaratio...	85	0.130220
28	[Artifact, Maven]	92	0.140944
29	[Type, File, Java, ByteCode, ExternalAnnotatio...	93	0.142476

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)

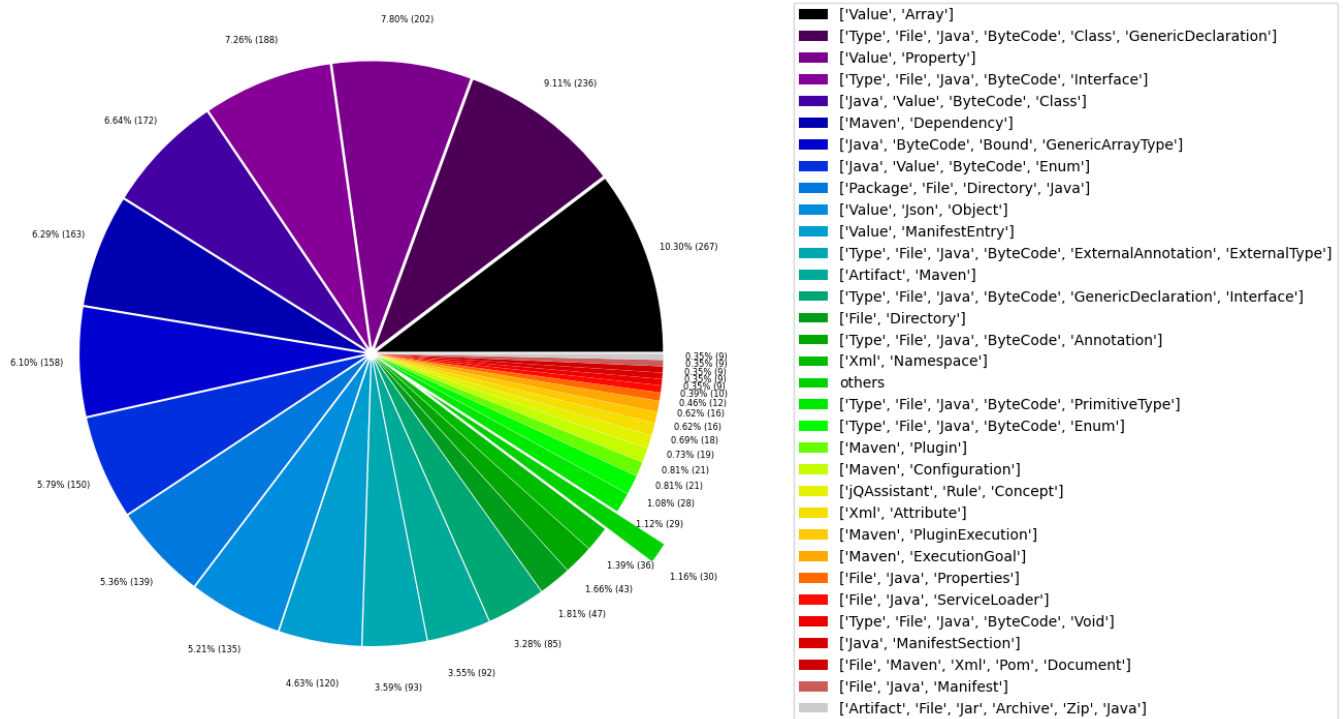


Table 1c - Highest node count by single label

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.

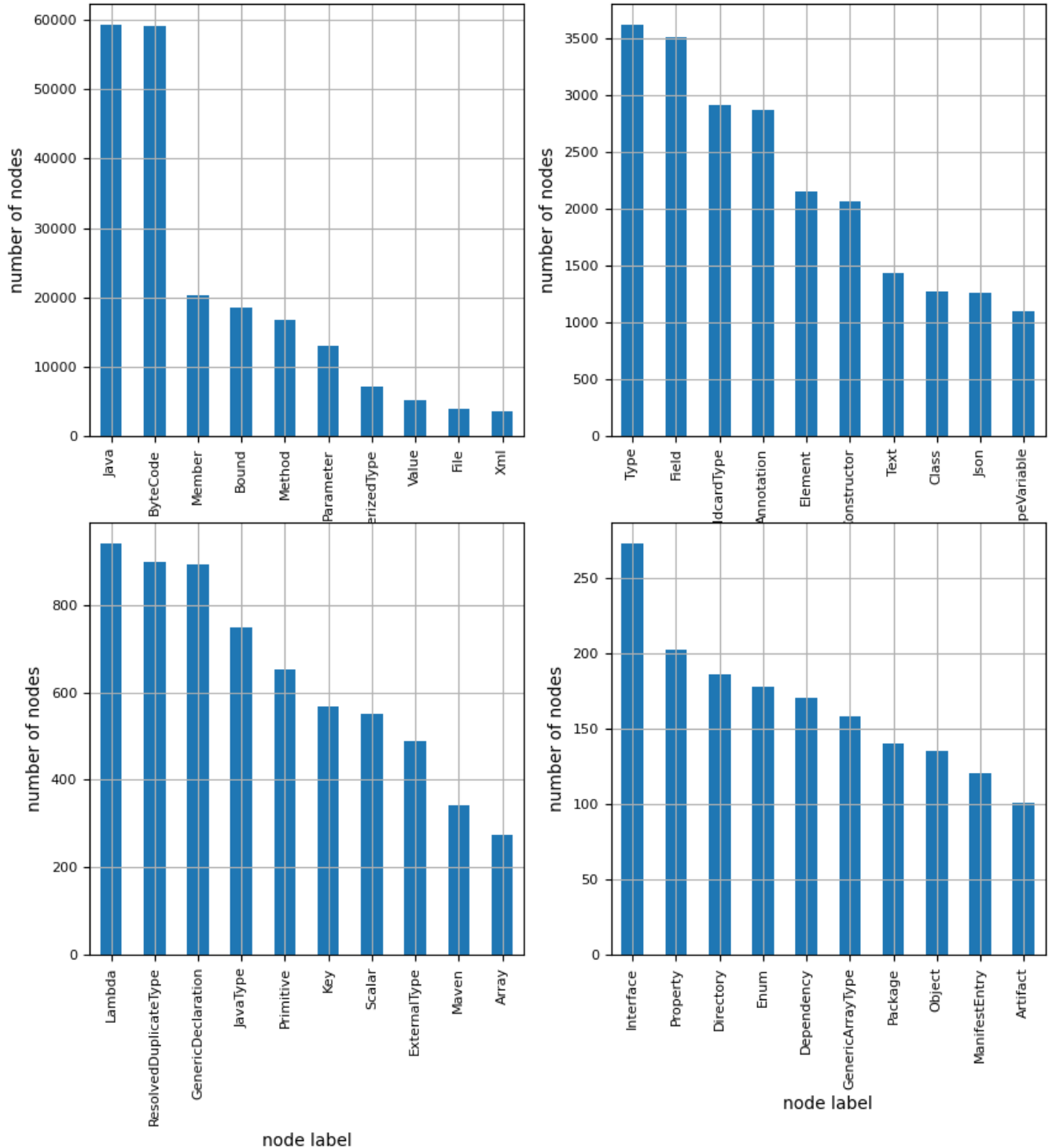
	nodeLabel	nodesWithThatLabel	nodesWithThatLabelPercent
0	Java	59367	90.950455
1	ByteCode	59179	90.662438
2	Member	20280	31.069032
3	Bound	18456	28.274658
4	Method	16775	25.699360
5	Parameter	13029	19.960474
6	ParameterizedType	7176	10.993658
7	Value	5077	7.777982
8	File	3860	5.913534
9	Xml	3643	5.581089
10	Type	3618	5.542789
11	Field	3505	5.369672
12	WildcardType	2908	4.455066
13	Annotation	2865	4.389190
14	Element	2144	3.284616
15	Constructor	2057	3.151331
16	Text	1436	2.199957
17	Class	1272	1.948709
18	Json	1263	1.934920
19	TypeVariable	1096	1.679076
20	Lambda	942	1.443147
21	ResolvedDuplicateType	899	1.377271
22	GenericDeclaration	894	1.369611
23	JavaType	748	1.145939
24	Primitive	652	0.998866
25	Key	568	0.870178
26	Scalar	551	0.844134
27	ExternalType	489	0.749150
28	Maven	343	0.525477
29	Array	273	0.418237
30	Interface	273	0.418237
31	Property	202	0.309465
32	Directory	186	0.284953
33	Enum	178	0.272697
34	Dependency	170	0.260441
35	GenericArrayType	158	0.242057
36	Package	140	0.214480
37	Object	135	0.206820
38	ManifestEntry	120	0.183840
39	Artifact	101	0.154732

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: 209029

	relationshipType	nodesWithThatRelationshipType	nodesWithThatRelationshipTypePercent
0	INVOKES	35779	17.116764
1	DEPENDS_ON	21931	10.491846
2	OF_TYPE	21394	10.234943
3	DECLARES	20725	9.914892
4	OF_RAW_TYPE	17093	8.177334
5	HAS	14125	6.757436
6	RETURNS	12578	6.017347
7	READS	9164	4.384081
8	HAS_ACTUAL_TYPE_ARGUMENT	8288	3.965000
9	OF_GENERIC_TYPE	5906	2.825445
10	SIMILAR	3977	1.902607
11	CONTAINS	3823	1.828933
12	WRITES	3818	1.826541
13	RETURNS_GENERIC	3545	1.695937
14	ANNOTATED_BY	2810	1.344311
15	RESOLVES_TO	2582	1.235235
16	REQUIRES	2174	1.040047
17	HAS_FIRST_CHILD	2144	1.025695
18	HAS_LAST_CHILD	2144	1.025695
19	HAS_ELEMENT	2126	1.017084
20	HAS_UPPER_BOUND	1523	0.728607
21	EXTENDS	1498	0.716647
22	HAS_TEXT	1436	0.686986
23	HAS_SIBLING	1418	0.678375
24	THROWS	1357	0.649192
25	DECLARES_TYPE_PARAMETER	1075	0.514283
26	IMPLEMENTS	843	0.403293
27	HAS_KEY	568	0.271733
28	HAS_VALUE	568	0.271733
29	EXTENDS_GENERIC	508	0.243028

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)

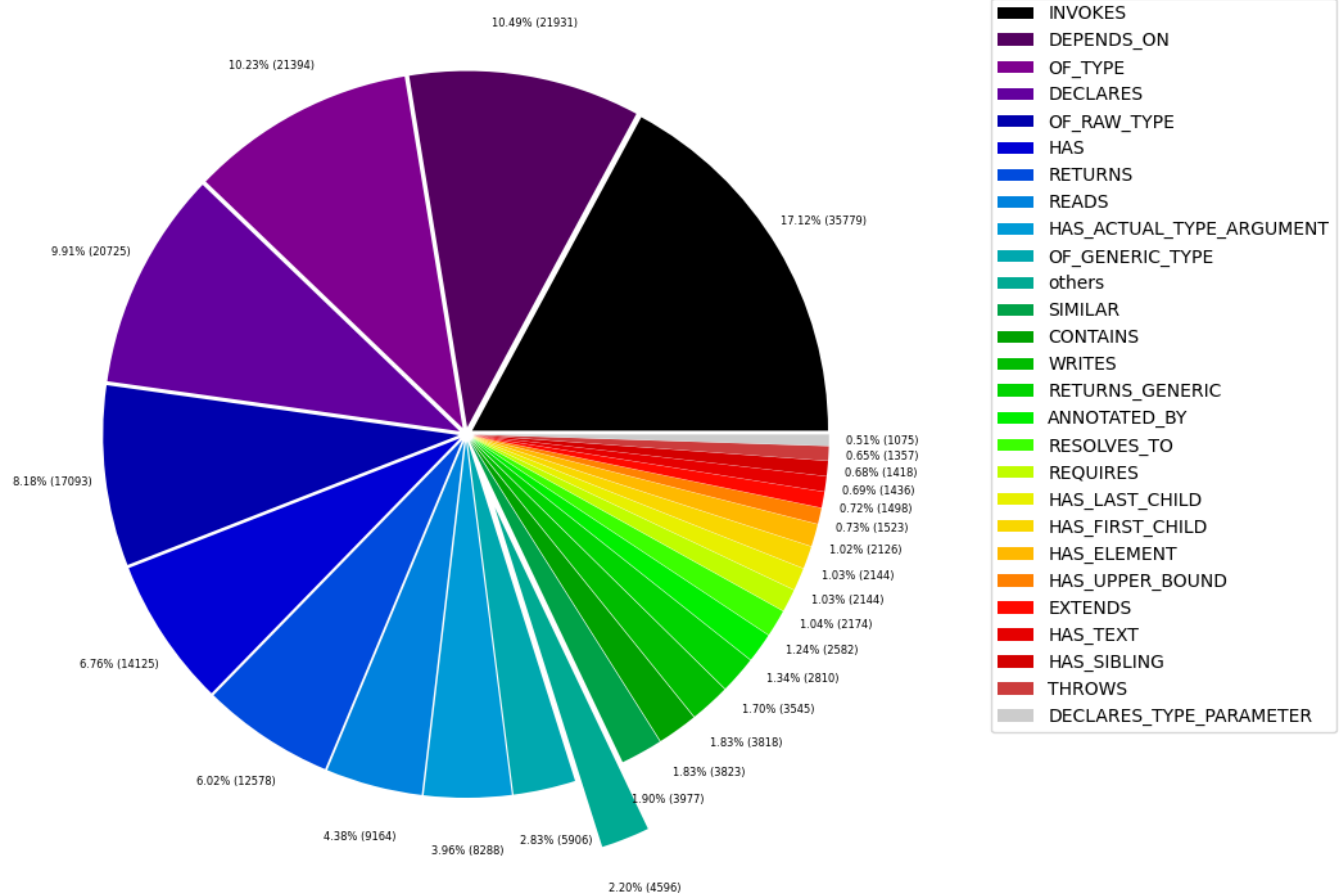


Table 2b - Lowest relationship count by type

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.

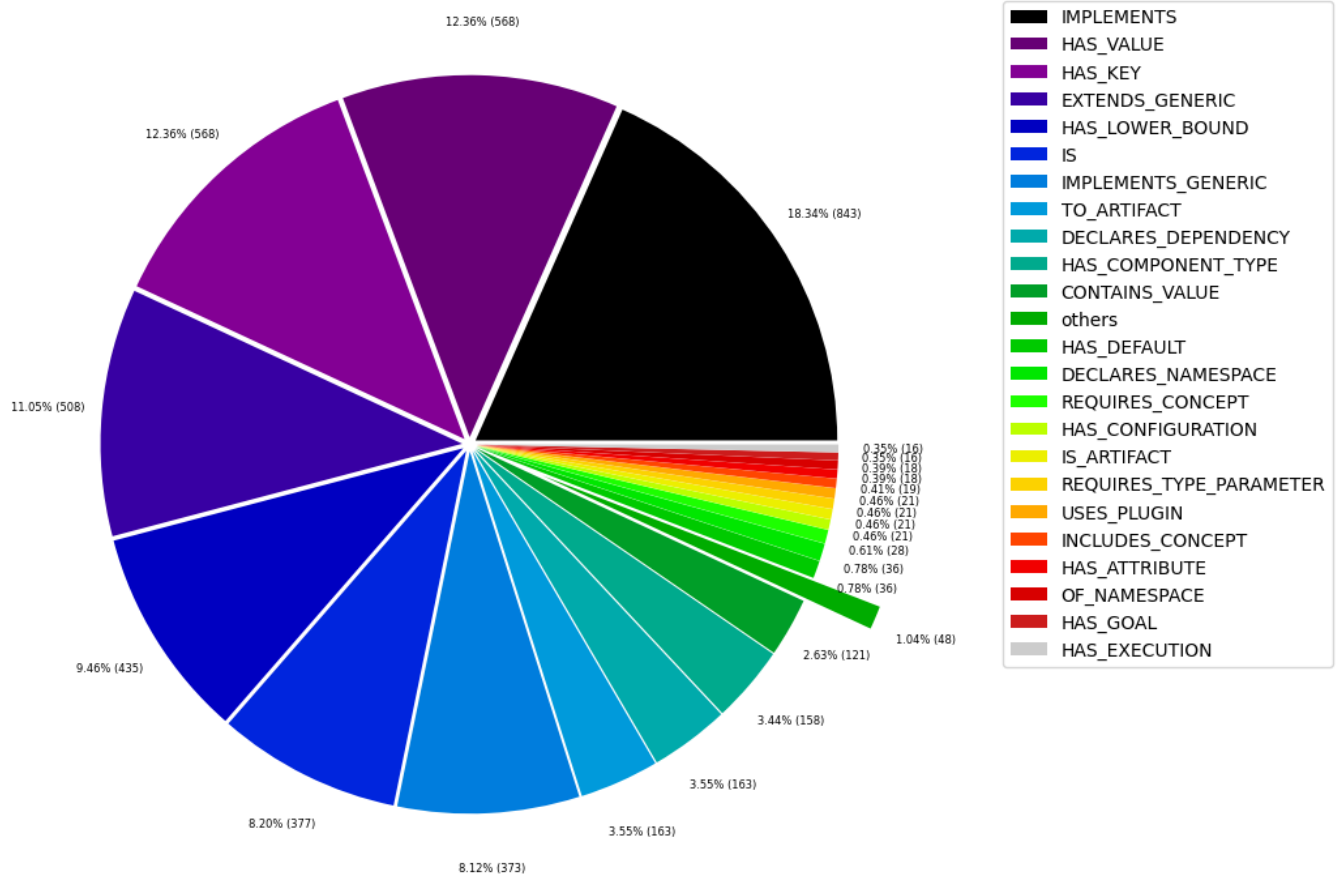
	relationshipType	nodesWithThatRelationshipType	nodesWithThatRelationshipTypePercent
0	HAS_PROPERTY	1	0.000478
1	THROWS_GENERIC	5	0.002392
2	EXCLUDES	5	0.002392
3	DECLARES_DEV_DEPENDENCY	7	0.003349
4	HAS_PARENT	9	0.004306
5	DESCRIBES	9	0.004306
6	HAS_ROOT_ELEMENT	12	0.005741
7	HAS_GOAL	16	0.007654
8	HAS_EXECUTION	16	0.007654
9	OF_NAMESPACE	18	0.008611
10	HAS_ATTRIBUTE	18	0.008611
11	INCLUDES_CONCEPT	19	0.009090
12	HAS_CONFIGURATION	21	0.010046
13	USES_PLUGIN	21	0.010046
14	REQUIRES_TYPE_PARAMETER	21	0.010046
15	IS_ARTIFACT	21	0.010046
16	REQUIRES_CONCEPT	28	0.013395
17	HAS_DEFAULT	36	0.017222
18	DECLARES_NAMESPACE	36	0.017222
19	CONTAINS_VALUE	121	0.057887
20	HAS_COMPONENT_TYPE	158	0.075588
21	TO_ARTIFACT	163	0.077980
22	DECLARES_DEPENDENCY	163	0.077980
23	IMPLEMENTS_GENERIC	373	0.178444
24	IS	377	0.180358
25	HAS_LOWER_BOUND	435	0.208105
26	EXTENDS_GENERIC	508	0.243028
27	HAS_VALUE	568	0.271733
28	HAS_KEY	568	0.271733
29	IMPLEMENTS	843	0.403293

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]	21880		13113
1	[Java, ByteCode, Member, Method]	HAS	[Java, ByteCode, Parameter]	8363		13113
2	[Java, ByteCode, Member, Method]	READS	[Java, ByteCode, Member, Field]	8218		13113
3	[Java, ByteCode, Parameter]	OF_TYPE	[Type, File, Java, ByteCode, JavaType]	6371		13029
4	[Type, File, Java, ByteCode, Class]	DECLARES	[Java, ByteCode, Member, Method]	5109		814
5	[Type, File, Java, ByteCode, Class]	DEPENDS_ON	[Type, File, Java, ByteCode, JavaType]	4480		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		2053
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]	2203		814
14	[Xml, Element]	HAS_ELEMENT	[Xml, Element]	2126		2144
15	[Java, ByteCode, Member, Method, Constructor]	INVOKES	[Java, ByteCode, Member, Method, Constructor]	2120		2053
16	[Java, ByteCode, Member, Method]	RETURNS	[Type, File, Java, ByteCode, JavaType]	2092		13113
17	[Type, File, Java, ByteCode, Class, GenericDec...	DECLARES	[Java, ByteCode, Member, Method]	2062		230
18	[Java, ByteCode, Member, Method]	INVOKES	[Java, ByteCode, Member, Method, Constructor]	2032		13113
19	[Java, ByteCode, Member, Method, Constructor]	HAS	[Java, ByteCode, Parameter]	2027		2053
20	[Java, ByteCode, Parameter]	OF_GENERIC_TYPE	[Java, ByteCode, Bound]	2022		13029
21	[Java, ByteCode, Member, Method, Lambda]	INVOKES	[Java, ByteCode, Member, Method]	1877		942
22	[Java, ByteCode, Bound, ParameterizedType]	HAS_ACTUAL_TYPE_ARGUMENT	[Java, ByteCode, Bound]	1807		7176
23	[Java, ByteCode, Member, Method, Constructor]	INVOKES	[Java, ByteCode, Member, Method]	1806		2053
24	[Java, ByteCode, Member, Method]	RETURNS	[Type, File, Java, ByteCode, Void]	1787		13113
25	[Java, ByteCode, Parameter]	ANNOTATED_BY	[Java, Value, ByteCode, Annotation]	1731		13029
26	[Java, ByteCode, GenericDeclaration, Member, M...	INVOKES	[Java, ByteCode, Member, Method]	1723		555
27	[Type, File, Java, ByteCode, Class]	SIMILAR	[Type, File, Java, ByteCode, Class]	1578		814
28	[Type, File, Java, ByteCode, Class, GenericDec...	DEPENDS_ON	[Type, File, Java, ByteCode, JavaType]	1542		230

	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): 65274
total_number_of_relationships (edges): 209029
-> total directed graph density: 4.9060587216913056e-05
-> total directed graph density in percent: 0.004906058721691305

```