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%).
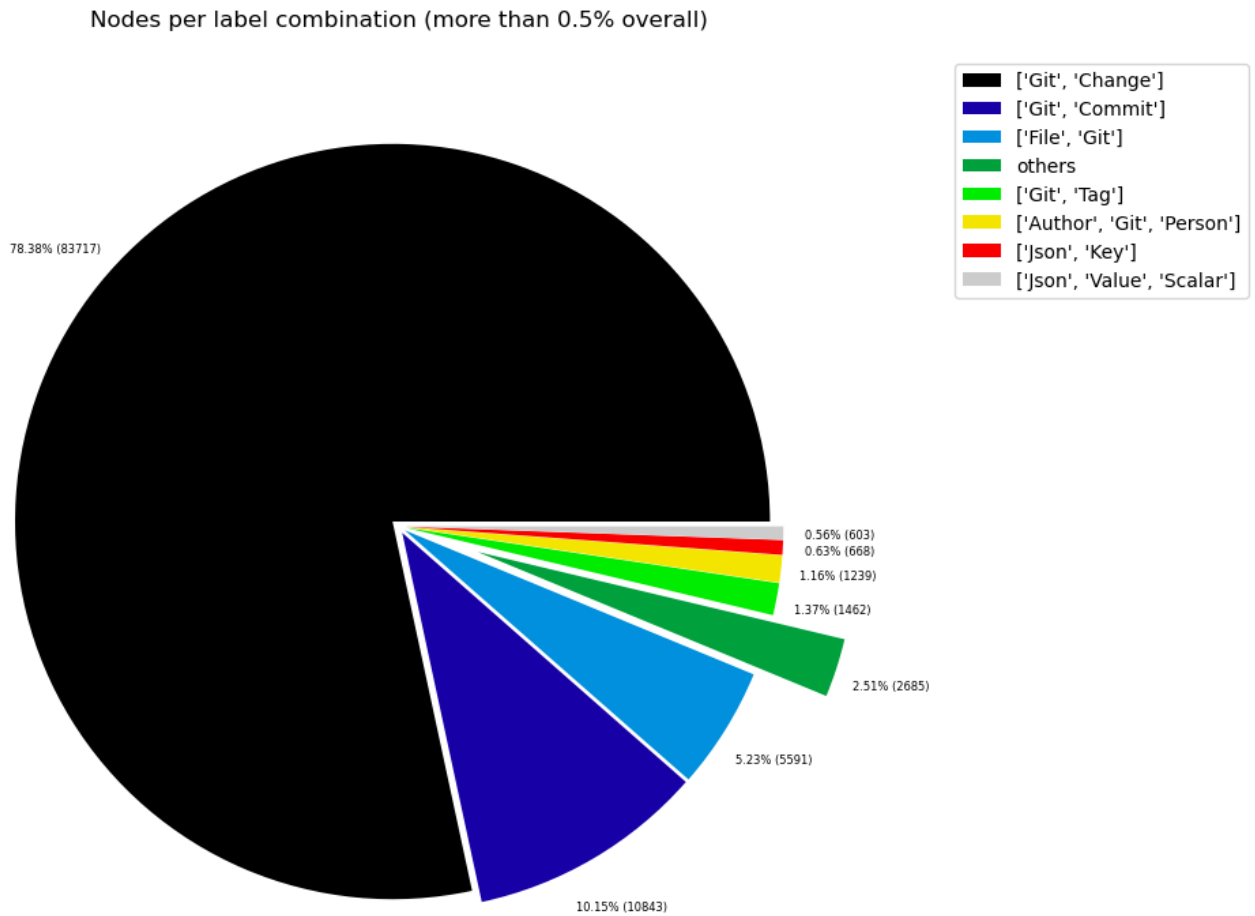
The whole table can be found in the CSV report `Node_label_combination_count`.

	nodeLabels	nodesWithThatLabels	nodesWithThatLabelsPercent
0	[Git, Change]	83717	78.380833
1	[Git, Commit]	10843	10.151861
2	[File, Git]	5591	5.234627
3	[Git, Tag]	1462	1.368811
4	[Author, Git, Person]	1239	1.160025
5	[Json, Key]	668	0.625421
6	[Json, Value, Scalar]	603	0.564564
7	[Committer, Git, Person]	370	0.346416
8	[NPM, Dependency]	338	0.316456
9	[Type, TS, Primitive]	291	0.272452
10	[Type, TS, Declared]	276	0.258408
11	[TS, ExternalDeclaration]	215	0.201296
12	[Type, TS, Literal]	136	0.127331
13	[Json, Value, Object]	133	0.124523
14	[Type, TS, Union]	119	0.111415
15	[Type, TS, ObjectMember]	101	0.094562
16	[NPM, Script]	91	0.085200
17	[TS, Property]	65	0.060857
18	[TS, Function]	47	0.044004
19	[Type, TS, FunctionParameter]	40	0.037450
20	[Git, Branch]	40	0.037450
21	[Type, Object, TS]	39	0.036514
22	[File, Directory]	34	0.031833
23	[Type, TS, Function]	34	0.031833
24	[TS, Parameter]	33	0.030897
25	[Package, File, Json, NPM]	29	0.027152
26	[TS, Variable]	24	0.022470
27	[Value, TS, Literal]	20	0.018725
28	[jQAssistant, Rule, Concept]	19	0.017789
29	[Type, TS, Intersection]	17	0.015916

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)

Legend:
- ['Git', 'Change']
- ['Git', 'Commit']
- ['File', 'Git']
- others
- ['Git', 'Tag']
- ['Author', 'Git', 'Person']
- ['Json', 'Key']
- ['Json', 'Value', 'Scalar']

78.38% (83717)
0.56% (603)
0.63% (668)
1.16% (1239)
1.37% (1462)
2.51% (2685)
5.23% (5591)
10.15% (10843)

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	0.000936
1	[File, TS, Scan]	1	0.000936
2	[TS, Method]	1	0.000936
3	[Repository, File, Git]	1	0.000936
4	[TS, Constructor]	1	0.000936
5	[Value, TS, ObjectMember]	1	0.000936
6	[TS, Class]	1	0.000936
7	[TS, Enum]	2	0.001873
8	[Value, Object, TS]	3	0.002809
9	[Type, TS, Tuple]	3	0.002809
10	[Value, TS, Function]	4	0.003745
11	[TS, TypeParameter]	4	0.003745
12	[Value, TS, Complex]	5	0.004681
13	[NPM, Engine]	6	0.005618
14	[Project, TS]	6	0.005618
15	[File, Local]	6	0.005618
16	[Value, TS, Call]	6	0.005618
17	[Value, TS, Member]	6	0.005618
18	[File, TS, Local, Module]	6	0.005618
19	[Type, TS, TypeParameterReference]	6	0.005618
20	[TS, EnumMember]	8	0.007490
21	[Type, TS, NotIdentified]	11	0.010299
22	[TS, ExternalModule]	11	0.010299
23	[Json, Value, Array]	12	0.011235
24	[Value, TS, Declared]	13	0.012171
25	[TS, TypeAlias]	16	0.014980
26	[File, Directory, Local]	16	0.014980
27	[Type, TS, Intersection]	17	0.015916
28	[TS, Interface]	17	0.015916
29	[jQAssistant, Rule, Concept]	19	0.017789

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)

Legend:
- ['Committer', 'Git', 'Person']
- ['NPM', 'Dependency']
- ['Type', 'TS', 'Primitive']
- ['Type', 'TS', 'Declared']
- ['TS', 'ExternalDeclaration']
- ['Type', 'TS', 'Literal']
- ['Json', 'Value', 'Object']
- ['Type', 'TS', 'Union']
- ['Type', 'TS', 'ObjectMember']
- ['NPM', 'Script']
- others
- ['TS', 'Property']
- ['TS', 'Function']
- ['Git', 'Branch']
- ['Type', 'TS', 'FunctionParameter']
- ['Type', 'Object', 'TS']
- ['Type', 'TS', 'Function']
- ['File', 'Directory']
- ['TS', 'Parameter']
- ['Package', 'File', 'Json', 'NPM']
- ['TS', 'Variable']
- ['Value', 'TS', 'Literal']
- ['jQAssistant', 'Rule', 'Concept']
- ['Type', 'TS', 'Intersection']
- ['TS', 'Interface']
- ['File', 'Directory', 'Local']
- ['TS', 'TypeAlias']
- ['Value', 'TS', 'Declared']
- ['Json', 'Value', 'Array']
- ['Type', 'TS', 'NotIdentified']
- ['TS', 'ExternalModule']

Pie chart values: 12.59% (338), 10.84% (291), 13.78% (370), 10.28% (276), 8.01% (215), 5.07% (136), 4.95% (133), 4.43% (119), 3.76% (101), 3.39% (91), 2.91% (78), 2.42% (65), 1.75% (47), 1.49% (40), 1.49% (40), 1.45% (39), 1.27% (34), 1.27% (34), 1.23% (33), 1.08% (29), 0.89% (24), 0.74% (20), 0.71% (19), 0.63% (17), 0.63% (17), 0.60% (16), 0.60% (16), 0.48% (13), 0.45% (12), 0.41% (11), 0.41% (11)
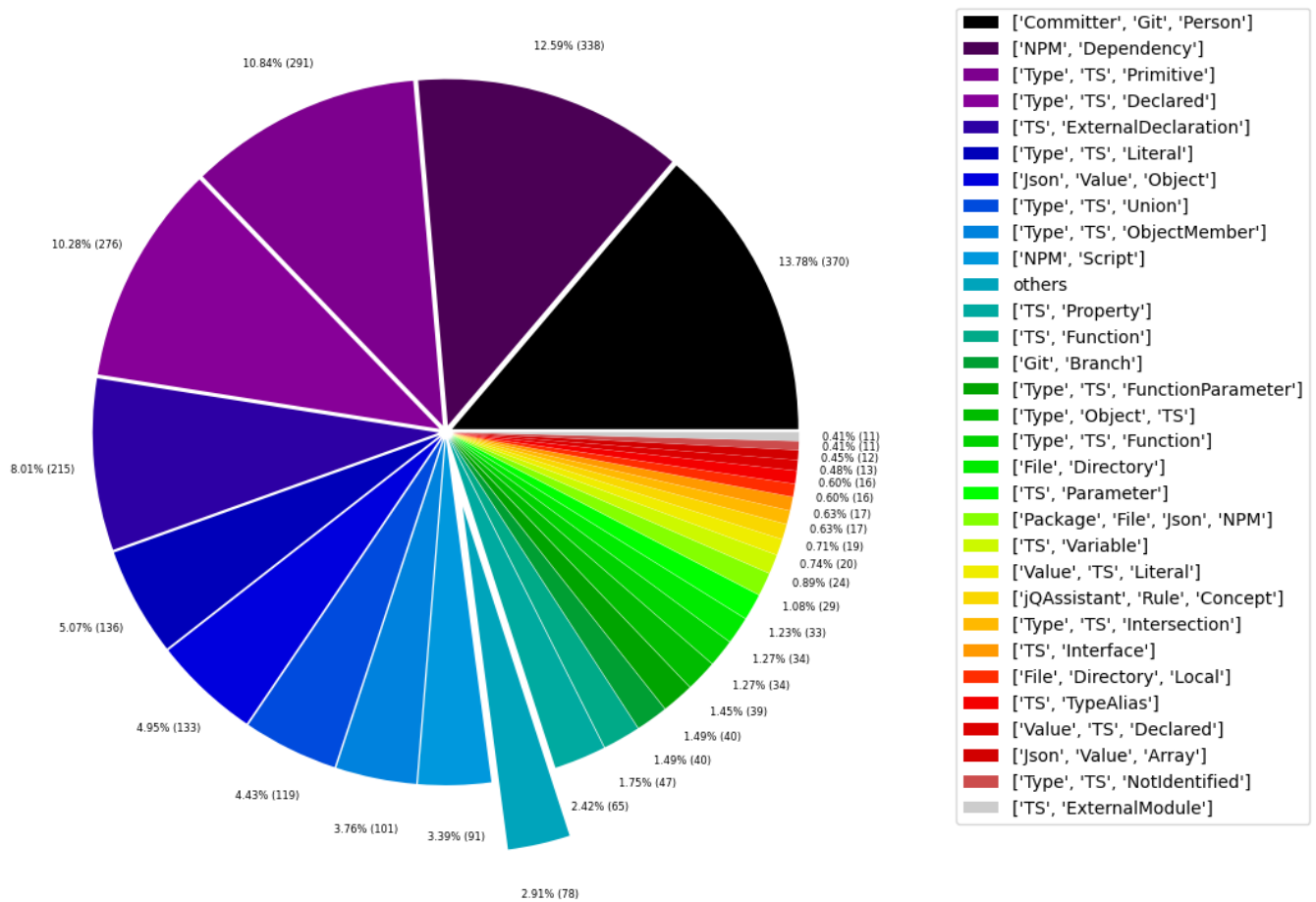
Table 1c - Highest node count by single label

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	103263	96.680960
1	Change	83717	78.380833
2	Commit	10843	10.151861
3	File	5684	5.321699
4	Person	1609	1.506441
5	TS	1589	1.487716
6	Tag	1462	1.368811
7	Json	1445	1.352895
8	Author	1239	1.160025
9	Type	1073	1.004606
10	Value	806	0.754625
11	Key	668	0.625421
12	Scalar	603	0.564564
13	NPM	464	0.434424
14	Committer	370	0.346416
15	Dependency	338	0.316456
16	Primitive	291	0.272452
17	Declared	289	0.270579
18	ExternalDeclaration	215	0.201296
19	Object	175	0.163845
20	Literal	156	0.146056
21	Union	119	0.111415
22	ObjectMember	102	0.095498
23	Script	91	0.085200
24	Function	85	0.079582
25	Property	65	0.060857
26	Directory	50	0.046813
27	Branch	40	0.037450
28	FunctionParameter	40	0.037450
29	Parameter	33	0.030897
30	Package	29	0.027152
31	Local	28	0.026215
32	Variable	24	0.022470
33	jQAssistant	20	0.018725
34	Concept	19	0.017789
35	Rule	19	0.017789
36	Interface	17	0.015916
37	Intersection	17	0.015916
38	TypeAlias	16	0.014980
39	Array	12	0.011235

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
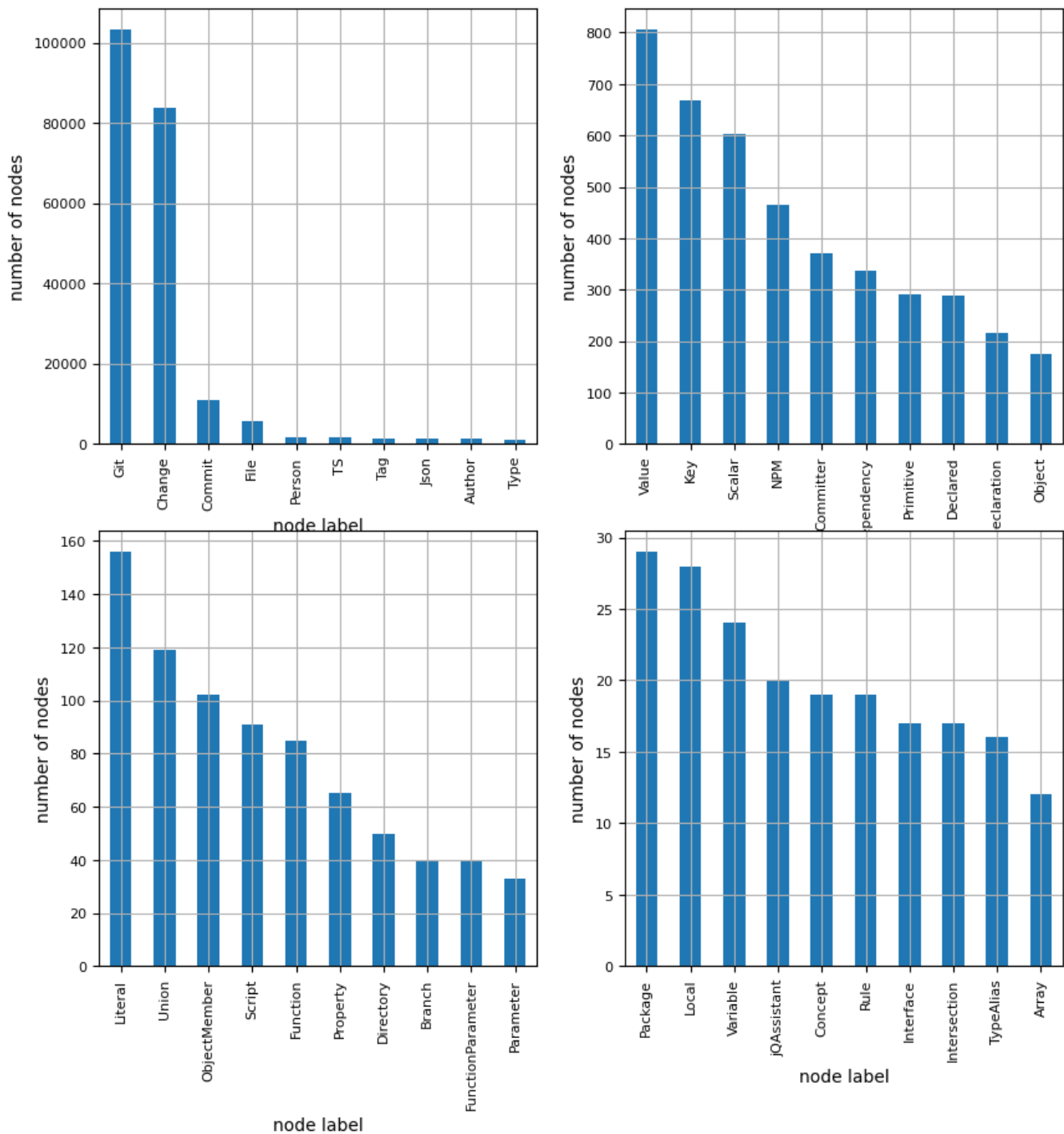
Relationship Types

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: 319108
```

	relationshipType	nodesWithThatRelationshipType	nodesWithThatRelationshipTypePercent
0	CONTAINS_CHANGE	83717	26.234692
1	MODIFIES	83717	26.234692
2	UPDATES	54974	17.227396
3	COMMITTED	21686	6.795818
4	CREATES	19972	6.258696
5	DELETES	12041	3.773331
6	HAS_PARENT	11900	3.729145
7	HAS_COMMIT	10843	3.397909
8	HAS_FILE	5591	1.752071
9	RENAMES	3270	1.024731
10	HAS_NEW_NAME	1751	0.548717
11	HAS_TAG	1462	0.458152
12	ON_COMMIT	1462	0.458152
13	HAS_AUTHOR	1239	0.388270
14	DEPENDS_ON	887	0.277962
15	HAS_KEY	668	0.209334
16	HAS_VALUE	668	0.209334
17	CONTAINS	594	0.186144
18	HAS_COMMITTER	370	0.115948
19	OF_TYPE	337	0.105607
20	EXPORTS	309	0.096832
21	REFERENCES	197	0.061735
22	DECLARES	186	0.058287
23	DECLARES_DEV_DEPENDENCY	169	0.052960
24	DECLARES_DEPENDENCY	161	0.050453
25	HAS_MEMBER	102	0.031964
26	HAS_TYPE_ARGUMENT	94	0.029457
27	DECLARES_SCRIPT	91	0.028517
28	RETURNS	82	0.025697
29	COPIES	79	0.024757

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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```
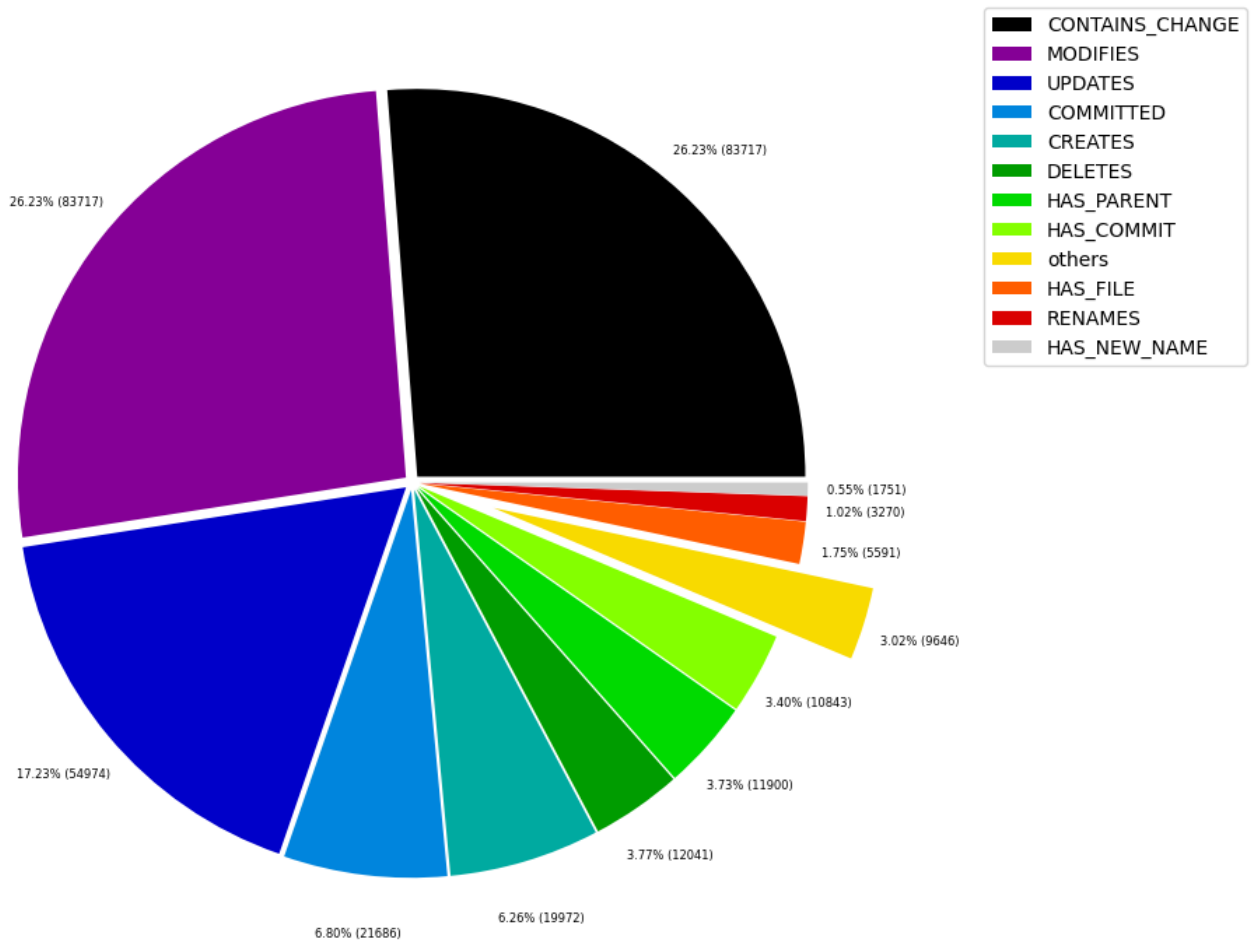
Relationship types (more than 0.5% overall)

Legend:
- CONTAINS_CHANGE
- MODIFIES
- UPDATES
- COMMITTED
- CREATES
- DELETES
- HAS_PARENT
- HAS_COMMIT
- others
- HAS_FILE
- RENAMES
- HAS_NEW_NAME

Pie chart values:
- 26.23% (83717) — CONTAINS_CHANGE
- 26.23% (83717) — MODIFIES
- 17.23% (54974) — UPDATES
- 6.80% (21686)
- 6.26% (19972)
- 3.77% (12041)
- 3.73% (11900)
- 3.40% (10843)
- 3.02% (9646)
- 1.75% (5591)
- 1.02% (3270)
- 0.55% (1751)

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.
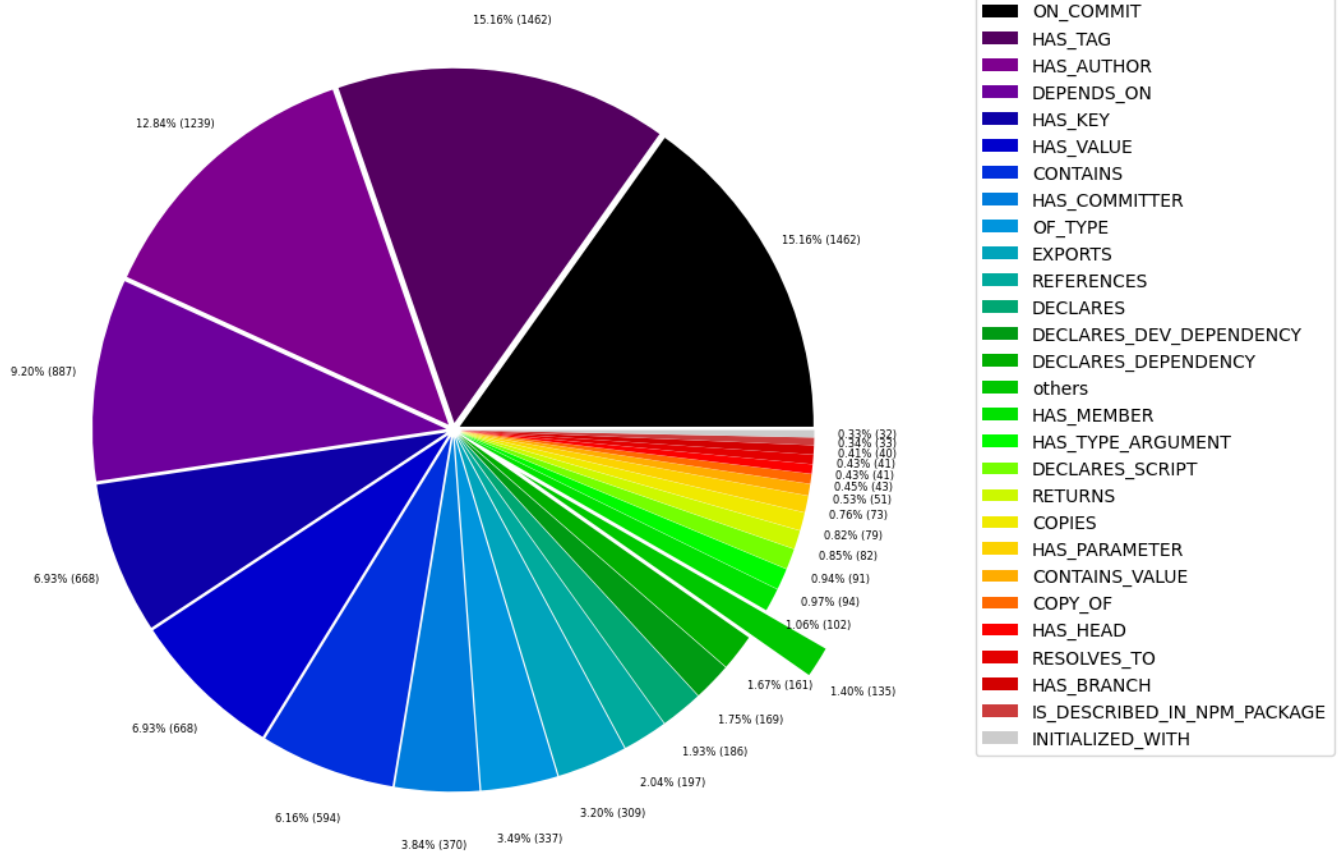
	relationshipType	nodesWithThatRelationshipType	nodesWithThatRelationshipTypePercent
0	CONSTRAINED_BY	4	0.001253
1	REFERENCED_PROJECTS	5	0.001567
2	MEMBER	6	0.001880
3	HAS_ROOT	6	0.001880
4	HAS_NPM_PACKAGE	6	0.001880
5	HAS_CONFIG	6	0.001880
6	HAS_ARGUMENT	6	0.001880
7	EXTENDS	6	0.001880
8	DECLARES_ENGINE	6	0.001880
9	CONTAINS_PROJECT	6	0.001880
10	CALLS	6	0.001880
11	PARENT	6	0.001880
12	DECLARES_PEER_DEPENDENCY	8	0.002507
13	USES	11	0.003447
14	INCLUDES_CONCEPT	19	0.005954
15	REQUIRES_CONCEPT	28	0.008774
16	INITIALIZED_WITH	32	0.010028
17	IS_DESCRIBED_IN_NPM_PACKAGE	33	0.010341
18	HAS_BRANCH	40	0.012535
19	RESOLVES_TO	41	0.012848
20	HAS_HEAD	41	0.012848
21	COPY_OF	43	0.013475
22	CONTAINS_VALUE	51	0.015982
23	HAS_PARAMETER	73	0.022876
24	COPIES	79	0.024757
25	RETURNS	82	0.025697
26	DECLARES_SCRIPT	91	0.028517
27	HAS_TYPE_ARGUMENT	94	0.029457
28	HAS_MEMBER	102	0.031964
29	DECLARES_DEPENDENCY	161	0.050453

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)

Legend:
- ON_COMMIT
- HAS_TAG
- HAS_AUTHOR
- DEPENDS_ON
- HAS_KEY
- HAS_VALUE
- CONTAINS
- HAS_COMMITTER
- OF_TYPE
- EXPORTS
- REFERENCES
- DECLARES
- DECLARES_DEV_DEPENDENCY
- DECLARES_DEPENDENCY
- others
- HAS_MEMBER
- HAS_TYPE_ARGUMENT
- DECLARES_SCRIPT
- RETURNS
- COPIES
- HAS_PARAMETER
- CONTAINS_VALUE
- COPY_OF
- HAS_HEAD
- RESOLVES_TO
- HAS_BRANCH
- IS_DESCRIBED_IN_NPM_PACKAGE
- INITIALIZED_WITH

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	numberOfNodesWithSame
0	[Git, Change]	MODIFIES	[File, Git]	83717	83717	
1	[Git, Commit]	CONTAINS_CHANGE	[Git, Change]	83717	10843	
2	[Git, Change]	UPDATES	[File, Git]	54974	83717	
3	[Git, Change]	CREATES	[File, Git]	19972	83717	
4	[Git, Change]	DELETES	[File, Git]	12041	83717	
5	[Git, Commit]	HAS_PARENT	[Git, Commit]	11900	10843	
6	[Repository, File, Git]	HAS_COMMIT	[Git, Commit]	10843	1	
7	[Author, Git, Person]	COMMITTED	[Git, Commit]	10843	1239	
8	[Committer, Git, Person]	COMMITTED	[Git, Commit]	10843	370	
9	[Repository, File, Git]	HAS_FILE	[File, Git]	5591	1	
10	[Git, Change]	RENAMES	[File, Git]	3270	83717	
11	[File, Git]	HAS_NEW_NAME	[File, Git]	1751	5591	
12	[Repository, File, Git]	HAS_TAG	[Git, Tag]	1462	1	
13	[Git, Tag]	ON_COMMIT	[Git, Commit]	1462	1462	
14	[Repository, File, Git]	HAS_AUTHOR	[Author, Git, Person]	1239	1	
15	[Json, Value, Object]	HAS_KEY	[Json, Key]	668	133	
16	[Json, Key]	HAS_VALUE	[Json, Value, Scalar]	552	668	
17	[Repository, File, Git]	HAS_COMMITTER	[Committer, Git, Person]	370	1	
18	[TS, Function]	DEPENDS_ON	[TS, ExternalDeclaration]	293	47	
19	[File, TS, Local, Module]	DEPENDS_ON	[TS, ExternalDeclaration]	236	6	
20	[TS, ExternalModule]	EXPORTS	[TS, ExternalDeclaration]	215	11	
21	[Package, File, Json, NPM]	DECLARES_DEV_DEPENDENCY	[NPM, Dependency]	169	29	
22	[Package, File, Json, NPM]	DECLARES_DEPENDENCY	[NPM, Dependency]	161	29	
23	[Type, TS, Union]	CONTAINS	[Type, TS, Primitive]	147	119	
24	[Type, TS, Declared]	REFERENCES	[TS, ExternalDeclaration]	143	276	
25	[Type, TS, Union]	CONTAINS	[Type, TS, Literal]	119	119	
26	[Json, Key]	HAS_VALUE	[Json, Value, Object]	104	668	
27	[Type, Object, TS]	HAS_MEMBER	[Type, TS, ObjectMember]	101	39	
28	[Package, File, Json, NPM]	DECLARES_SCRIPT	[NPM, Script]	91	29	
29	[Git, Change]	COPIES	[File, Git]	79	83717	

Graph Density

```
total_number_of_nodes (vertices): 106808
total_number_of_relationships (edges): 319108
-> total directed graph density: 2.7972687422698306e-05
-> total directed graph density in percent: 0.0027972687422698306
```