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]	81564	78.292922
1	[Git, Commit]	10618	10.192171
2	[File, Git]	5497	5.276546
3	[Git, Tag]	1315	1.262263
4	[Author, Git, Person]	1221	1.172032
5	[Json, Key]	668	0.641210
6	[Json, Value, Scalar]	603	0.578817
7	[Committer, Git, Person]	371	0.356121
8	[NPM, Dependency]	338	0.324445
9	[Type, TS, Primitive]	291	0.279330
10	[Type, TS, Declared]	276	0.264931
11	[TS, ExternalDeclaration]	214	0.205418
12	[Type, TS, Literal]	136	0.130546
13	[Json, Value, Object]	133	0.127666
14	[Type, TS, Union]	119	0.114228
15	[Type, TS, ObjectMember]	101	0.096949
16	[NPM, Script]	91	0.087350
17	[TS, Property]	65	0.062393
18	[TS, Function]	47	0.045115
19	[Type, TS, FunctionParameter]	40	0.038396
20	[Type, Object, TS]	39	0.037436
21	[Git, Branch]	35	0.033596
22	[File, Directory]	34	0.032636
23	[Type, TS, Function]	34	0.032636
24	[TS, Parameter]	33	0.031677
25	[Package, File, Json, NPM]	29	0.027837
26	[TS, Variable]	24	0.023037
27	[TS, ExternalModule]	23	0.022078
28	[Value, TS, Literal]	20	0.019198
29	[jQAssistant, Rule, Concept]	19	0.018238

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']

78.29% (81564)
0.58% (603)
0.64% (668)
1.17% (1221)
1.26% (1315)
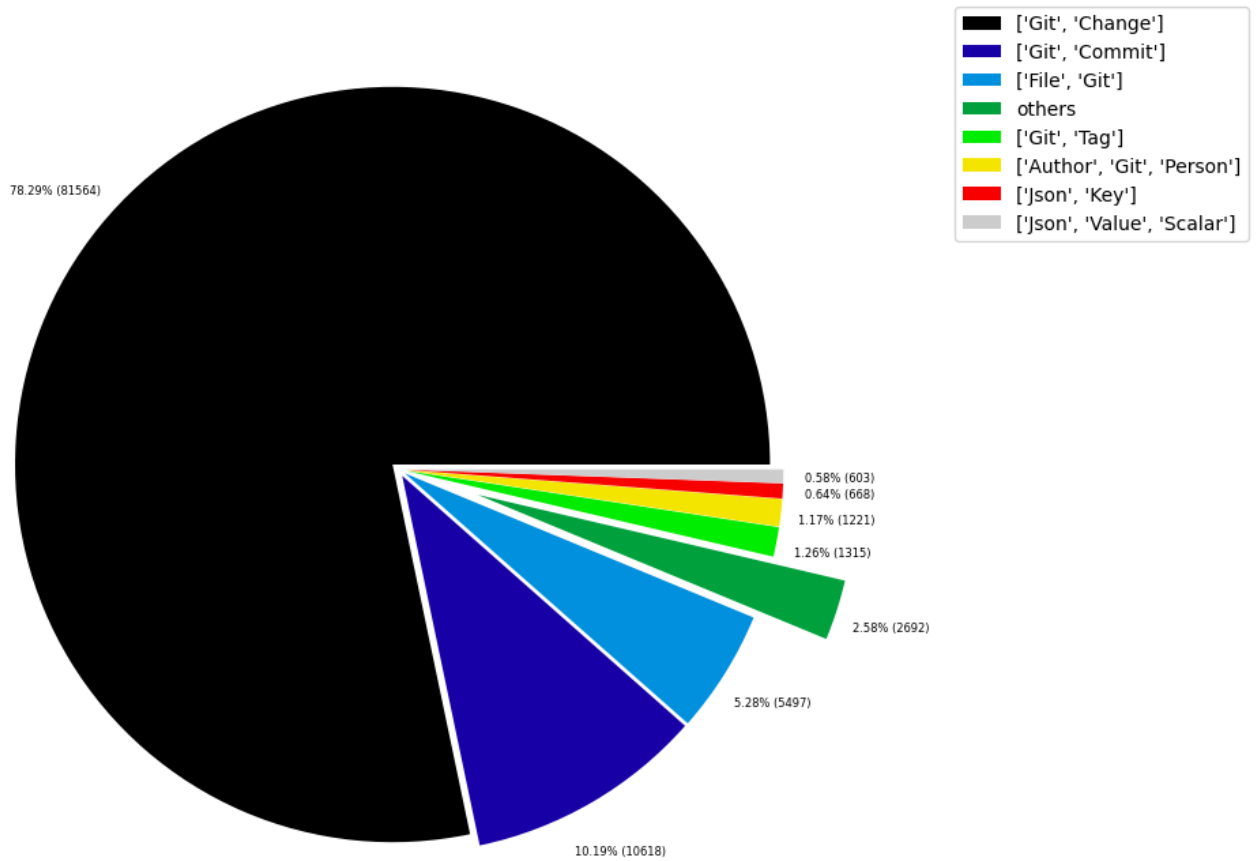2.58% (2692)
5.28% (5497)
10.19% (10618)

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	0.000960
1	[File, TS, Scan]	1	0.000960
2	[TS, Method]	1	0.000960
3	[Repository, File, Git]	1	0.000960
4	[TS, Constructor]	1	0.000960
5	[Value, TS, ObjectMember]	1	0.000960
6	[TS, Class]	1	0.000960
7	[TS, Enum]	2	0.001920
8	[Value, Object, TS]	3	0.002880
9	[Type, TS, Tuple]	3	0.002880
10	[Value, TS, Function]	4	0.003840
11	[TS, TypeParameter]	4	0.003840
12	[Value, TS, Complex]	5	0.004799
13	[NPM, Engine]	6	0.005759
14	[Project, TS]	6	0.005759
15	[File, Local]	6	0.005759
16	[Value, TS, Call]	6	0.005759
17	[Value, TS, Member]	6	0.005759
18	[File, TS, Local, Module]	6	0.005759
19	[Type, TS, TypeParameterReference]	6	0.005759
20	[TS, EnumMember]	8	0.007679
21	[Type, TS, NotIdentified]	11	0.010559
22	[Json, Value, Array]	12	0.011519
23	[Value, TS, Declared]	13	0.012479
24	[TS, TypeAlias]	16	0.015358
25	[File, Directory, Local]	16	0.015358
26	[TS, Interface]	17	0.016318
27	[Type, TS, Intersection]	17	0.016318
28	[jQAssistant, Rule, Concept]	19	0.018238
29	[Value, TS, Literal]	20	0.019198

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']
- ['Type', 'TS', 'FunctionParameter']
- ['Type', 'Object', 'TS']
- ['Git', 'Branch']
- ['Type', 'TS', 'Function']
- ['File', 'Directory']
- ['TS', 'Parameter']
- ['Package', 'File', 'Json', 'NPM']
- ['TS', 'Variable']
- ['TS', 'ExternalModule']
- ['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']

Pie slice labels: 13.78% (371), 12.56% (338), 10.81% (291), 10.25% (276), 7.95% (214), 5.05% (136), 4.94% (133), 4.42% (119), 3.75% (101), 3.38% (91), 2.90% (78), 2.41% (65), 1.75% (47), 1.49% (40), 1.45% (39), 1.30% (35), 1.26% (34), 1.26% (34), 1.23% (33), 1.08% (29), 0.89% (24), 0.85% (23), 0.74% (20), 0.71% (19), 0.63% (17), 0.63% (17), 0.59% (16), 0.59% (16), 0.48% (13), 0.45% (12), 0.41% (11)
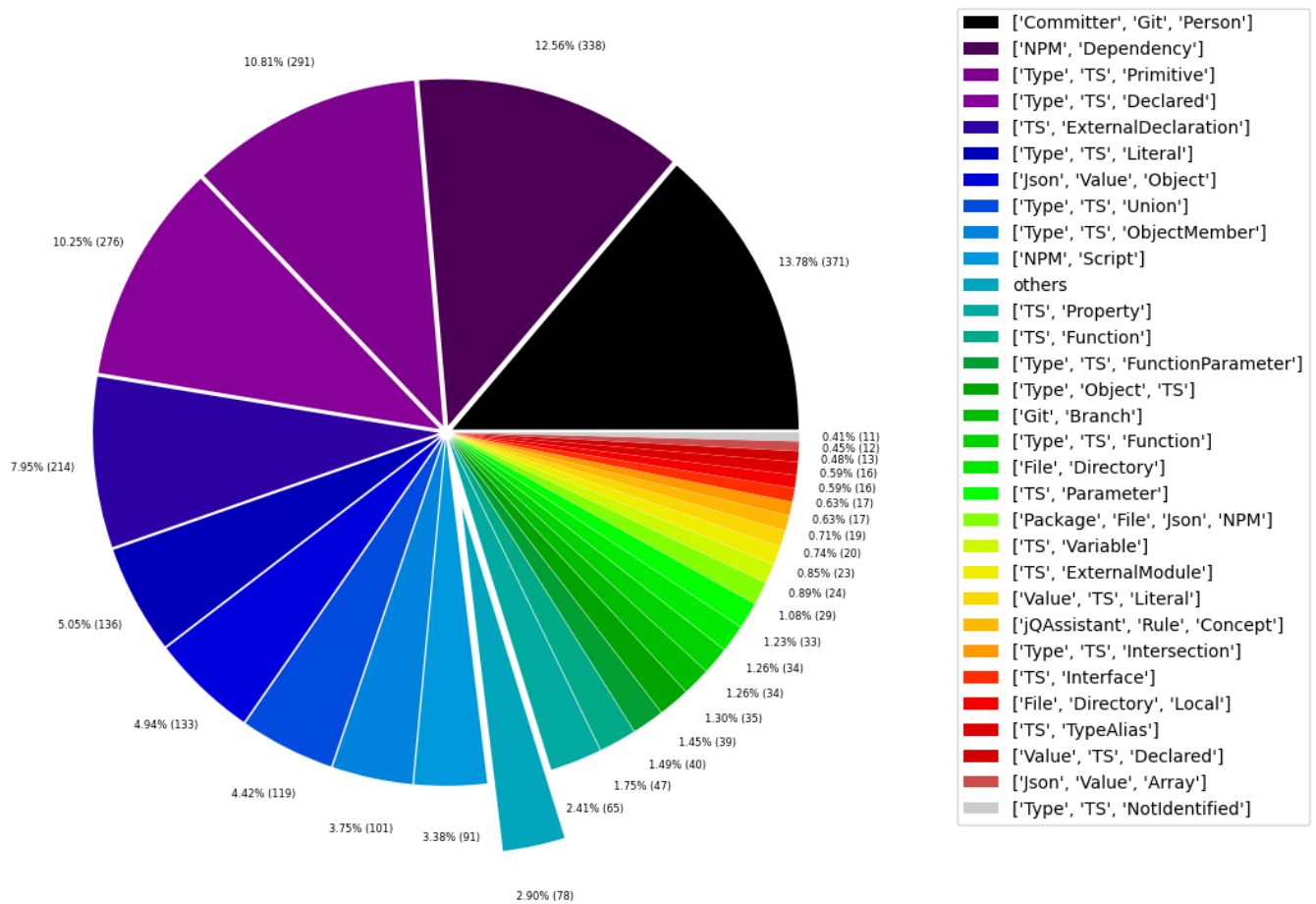
Table 1c - Highest node count by single label

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	100622	96.586611
1	Change	81564	78.292922
2	Commit	10618	10.192171
3	File	5590	5.365816
4	TS	1600	1.535833
5	Person	1592	1.528154
6	Json	1445	1.387049
7	Tag	1315	1.262263
8	Author	1221	1.172032
9	Type	1073	1.029968
10	Value	806	0.773676
11	Key	668	0.641210
12	Scalar	603	0.578817
13	NPM	464	0.445392
14	Committer	371	0.356121
15	Dependency	338	0.324445
16	Primitive	291	0.279330
17	Declared	289	0.277410
18	ExternalDeclaration	214	0.205418
19	Object	175	0.167982
20	Literal	156	0.149744
21	Union	119	0.114228
22	ObjectMember	102	0.097909
23	Script	91	0.087350
24	Function	85	0.081591
25	Property	65	0.062393
26	Directory	50	0.047995
27	FunctionParameter	40	0.038396
28	Branch	35	0.033596
29	Parameter	33	0.031677
30	Package	29	0.027837
31	Local	28	0.026877
32	Variable	24	0.023037
33	ExternalModule	23	0.022078
34	jQAssistant	20	0.019198
35	Concept	19	0.018238
36	Rule	19	0.018238
37	Interface	17	0.016318
38	Intersection	17	0.016318
39	TypeAlias	16	0.015358

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
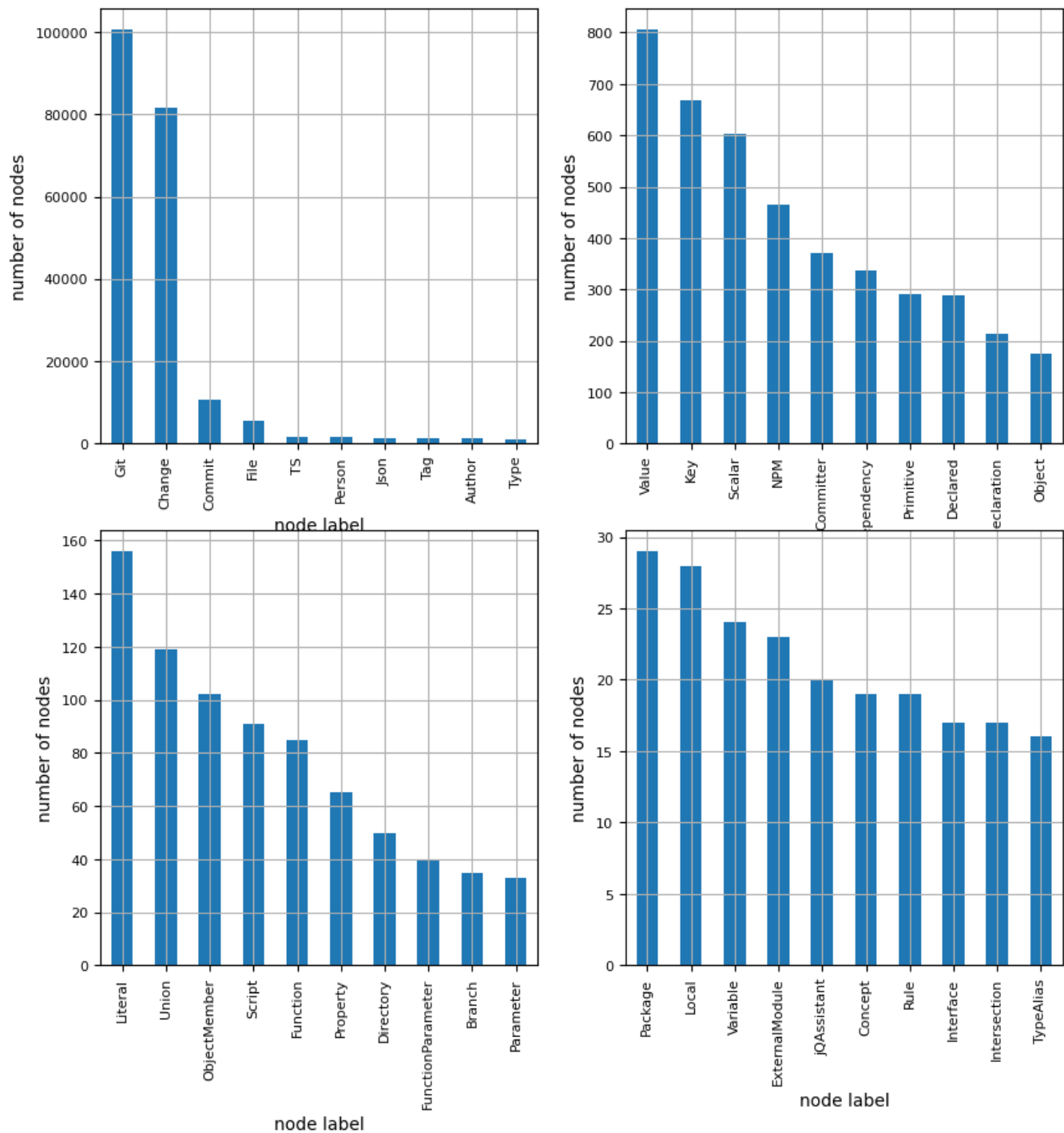
Relationship Types

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: 311202
```

	relationshipType	nodesWithThatRelationshipType	nodesWithThatRelationshipTypePercent
0	CONTAINS_CHANGE	81564	26.209343
1	MODIFIES	81564	26.209343
2	UPDATES	53374	17.150918
3	COMMITTED	21236	6.823864
4	CREATES	19664	6.318725
5	DELETES	11723	3.767007
6	HAS_PARENT	11664	3.748048
7	HAS_COMMIT	10618	3.411932
8	HAS_FILE	5497	1.766377
9	RENAMES	3197	1.027307
10	HAS_NEW_NAME	1726	0.554624
11	HAS_TAG	1315	0.422555
12	ON_COMMIT	1315	0.422555
13	HAS_AUTHOR	1221	0.392350
14	DEPENDS_ON	961	0.308803
15	HAS_KEY	668	0.214652
16	HAS_VALUE	668	0.214652
17	CONTAINS	594	0.190873
18	HAS_COMMITTER	371	0.119215
19	OF_TYPE	337	0.108290
20	EXPORTS	283	0.090938
21	REFERENCES	197	0.063303
22	DECLARES	186	0.059768
23	DECLARES_DEV_DEPENDENCY	169	0.054306
24	DECLARES_DEPENDENCY	161	0.051735
25	HAS_MEMBER	102	0.032776
26	HAS_TYPE_ARGUMENT	94	0.030205
27	DECLARES_SCRIPT	91	0.029241
28	RETURNS	82	0.026349
29	HAS_PARAMETER	73	0.023457

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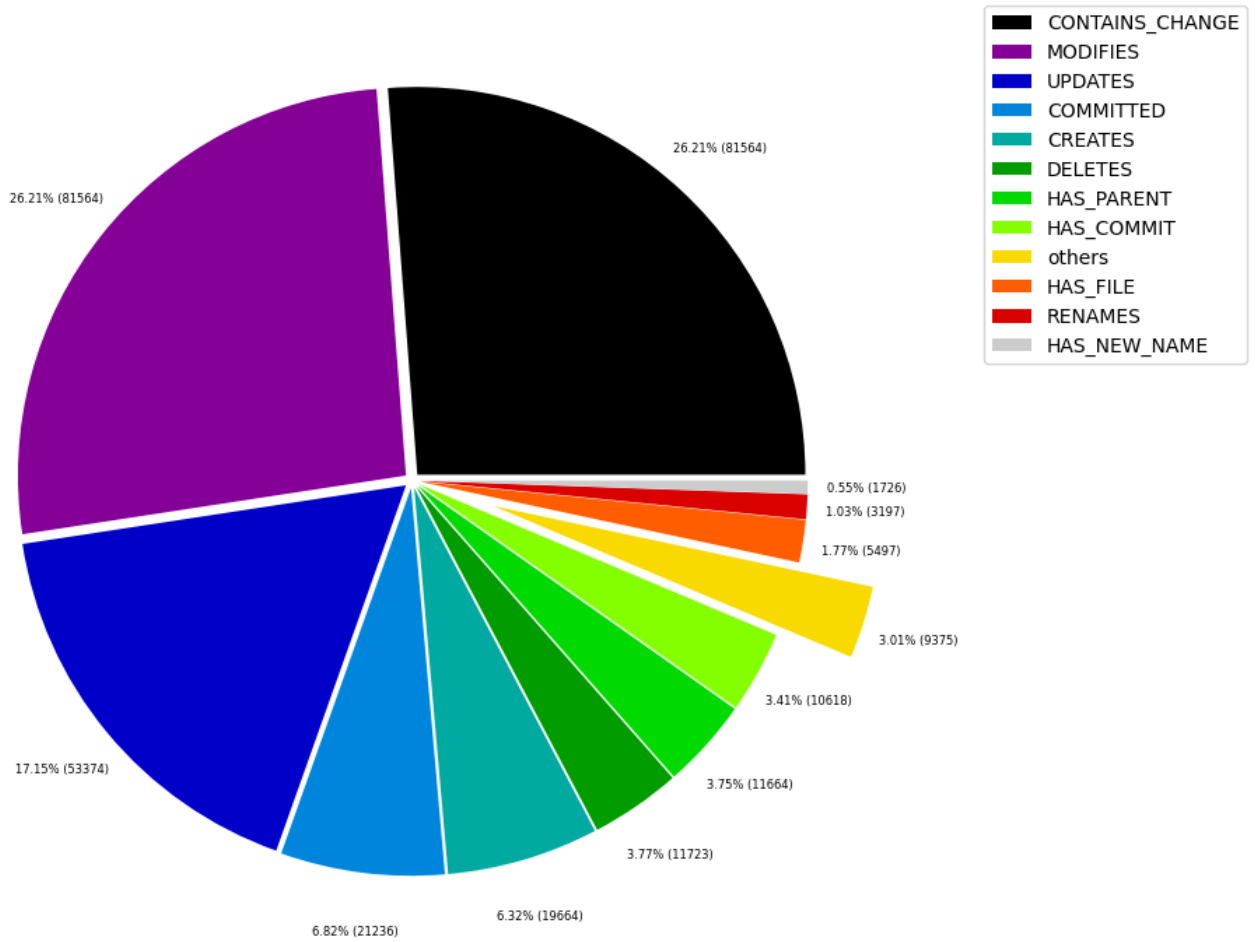
Relationship types (more than 0.5% overall)

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

Slice labels:
- 26.21% (81564) — CONTAINS_CHANGE
- 26.21% (81564) — MODIFIES
- 17.15% (53374) — UPDATES
- 6.82% (21236) — COMMITTED
- 6.32% (19664) — CREATES
- 3.77% (11723) — DELETES
- 3.75% (11664) — HAS_PARENT
- 3.41% (10618) — HAS_COMMIT
- 3.01% (9375) — others
- 1.77% (5497) — HAS_FILE
- 1.03% (3197) — RENAMES
- 0.55% (1726) — HAS_NEW_NAME

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.
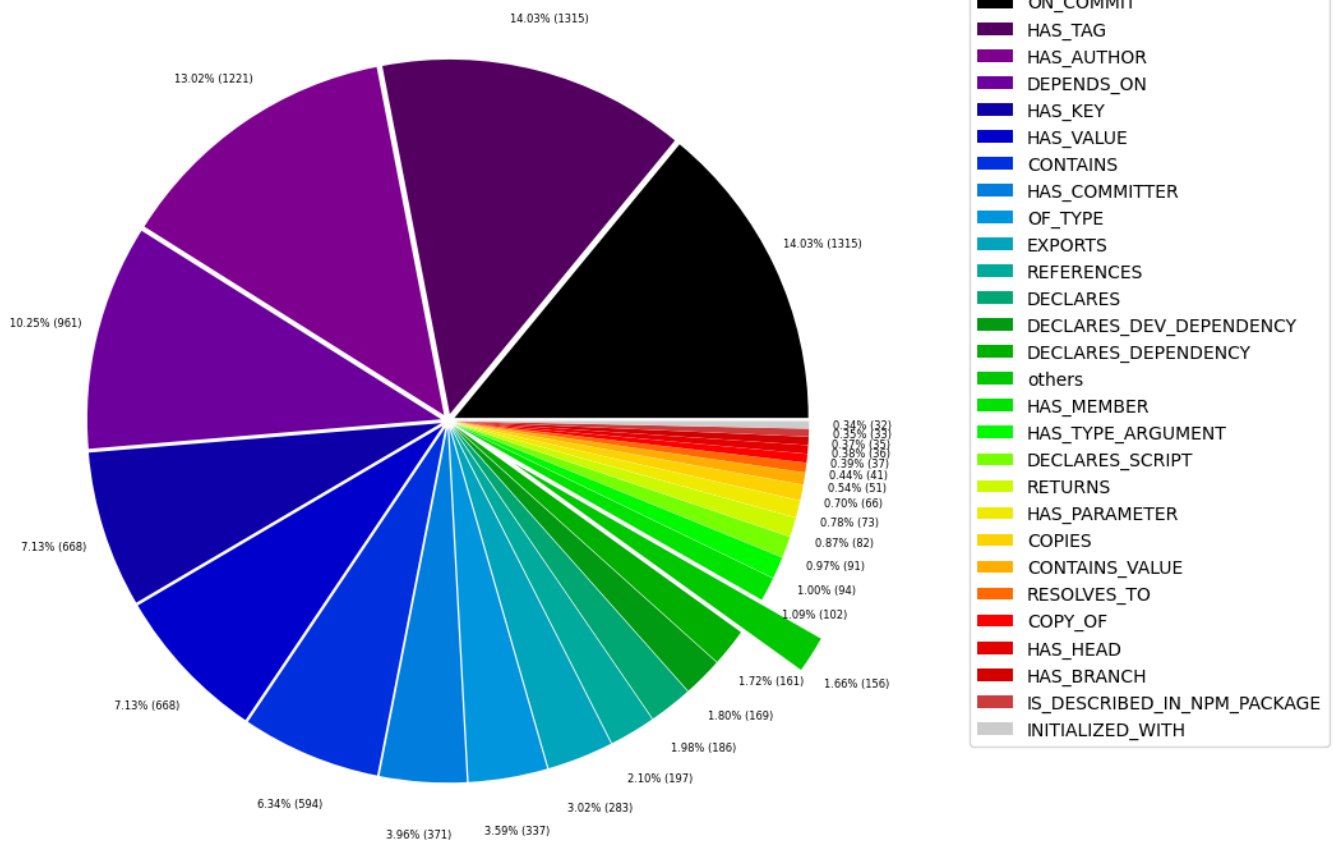
	relationshipType	nodesWithThatRelationshipType	nodesWithThatRelationshipTypePercent
0	PROVIDED_BY_NPM_DEPENDENCY	1	0.000321
1	IS_IMPLEMENTED_IN	2	0.000643
2	CONSTRAINED_BY	4	0.001285
3	REFERENCED_PROJECTS	5	0.001607
4	CONTAINS_PROJECT	6	0.001928
5	DECLARES_ENGINE	6	0.001928
6	EXTENDS	6	0.001928
7	HAS_ARGUMENT	6	0.001928
8	CALLS	6	0.001928
9	HAS_NPM_PACKAGE	6	0.001928
10	HAS_ROOT	6	0.001928
11	MEMBER	6	0.001928
12	PARENT	6	0.001928
13	HAS_CONFIG	6	0.001928
14	SIMILAR	6	0.001928
15	DECLARES_PEER_DEPENDENCY	8	0.002571
16	INCLUDES_CONCEPT	19	0.006105
17	USES	23	0.007391
18	REQUIRES_CONCEPT	28	0.008997
19	INITIALIZED_WITH	32	0.010283
20	IS_DESCRIBED_IN_NPM_PACKAGE	33	0.010604
21	HAS_BRANCH	35	0.011247
22	HAS_HEAD	36	0.011568
23	COPY_OF	37	0.011889
24	RESOLVES_TO	41	0.013175
25	CONTAINS_VALUE	51	0.016388
26	COPIES	66	0.021208
27	HAS_PARAMETER	73	0.023457
28	RETURNS	82	0.026349
29	DECLARES_SCRIPT	91	0.029241

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>

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
HAS_PARAMETER
COPIES
CONTAINS_VALUE
RESOLVES_TO
COPY_OF
HAS_HEAD
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	numberOfNodes
0	[Git, Change]	MODIFIES	[File, Git]	81564	81564	
1	[Git, Commit]	CONTAINS_CHANGE	[Git, Change]	81564	10618	
2	[Git, Change]	UPDATES	[File, Git]	53374	81564	
3	[Git, Change]	CREATES	[File, Git]	19664	81564	
4	[Git, Change]	DELETES	[File, Git]	11723	81564	
5	[Git, Commit]	HAS_PARENT	[Git, Commit]	11664	10618	
6	[Repository, File, Git]	HAS_COMMIT	[Git, Commit]	10618	1	
7	[Author, Git, Person]	COMMITTED	[Git, Commit]	10618	1221	
8	[Committer, Git, Person]	COMMITTED	[Git, Commit]	10618	371	
9	[Repository, File, Git]	HAS_FILE	[File, Git]	5497	1	
10	[Git, Change]	RENAMES	[File, Git]	3197	81564	
11	[File, Git]	HAS_NEW_NAME	[File, Git]	1726	5497	
12	[Repository, File, Git]	HAS_TAG	[Git, Tag]	1315	1	
13	[Git, Tag]	ON_COMMIT	[Git, Commit]	1315	1315	
14	[Repository, File, Git]	HAS_AUTHOR	[Author, Git, Person]	1221	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]	371	1	
18	[TS, Function]	DEPENDS_ON	[TS, ExternalDeclaration]	289	47	
19	[File, TS, Local, Module, Mark4ModuleWeaklyCon...]	DEPENDS_ON	[TS, ExternalDeclaration]	232	4	
20	[TS, ExternalModule]	EXPORTS	[TS, ExternalDeclaration]	214	23	
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]	142	276	
25	[TS, Function]	DEPENDS_ON	[TS, ExternalModule]	132	47	
26	[Type, TS, Union]	CONTAINS	[Type, TS, Literal]	119	119	
27	[Json, Key]	HAS_VALUE	[Json, Value, Object]	104	668	
28	[Type, Object, TS]	HAS_MEMBER	[Type, TS, ObjectMember]	101	39	
29	[Package, File, Json, NPM]	DECLARES_SCRIPT	[NPM, Script]	91	29	

Graph Density

```
total_number_of_nodes (vertices): 104178
total_number_of_relationships (edges): 311202
-> total directed graph density: 2.8674411732877783e-05
-> total directed graph density in percent: 0.0028674411732877783
```