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]	80769	78.265293
1	[Git, Commit]	10523	10.196804
2	[File, Git]	5450	5.281059
3	[Git, Tag]	1285	1.245167
4	[Author, Git, Person]	1209	1.171523
5	[Json, Key]	668	0.647293
6	[Json, Value, Scalar]	603	0.584308
7	[Committer, Git, Person]	371	0.359500
8	[NPM, Dependency]	338	0.327523
9	[Type, TS, Primitive]	291	0.281979
10	[Type, TS, Declared]	276	0.267444
11	[TS, ExternalDeclaration]	215	0.208335
12	[Type, TS, Literal]	136	0.131784
13	[Json, Value, Object]	133	0.128877
14	[Type, TS, Union]	119	0.115311
15	[Type, TS, ObjectMember]	101	0.097869
16	[NPM, Script]	91	0.088179
17	[TS, Property]	65	0.062985
18	[TS, Function]	47	0.045543
19	[Type, TS, FunctionParameter]	40	0.038760
20	[Type, Object, TS]	39	0.037791
21	[File, Directory]	34	0.032946
22	[Type, TS, Function]	34	0.032946
23	[TS, Parameter]	33	0.031977
24	[Git, Branch]	32	0.031008
25	[Package, File, Json, NPM]	29	0.028101
26	[TS, ExternalModule]	25	0.024225
27	[TS, Variable]	24	0.023256
28	[Value, TS, Literal]	20	0.019380
29	[jQAssistant, Rule, Concept]	19	0.018411

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)

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

78.27% (80769)

0.58% (603)
0.65% (668)
1.17% (1209)
1.25% (1285)
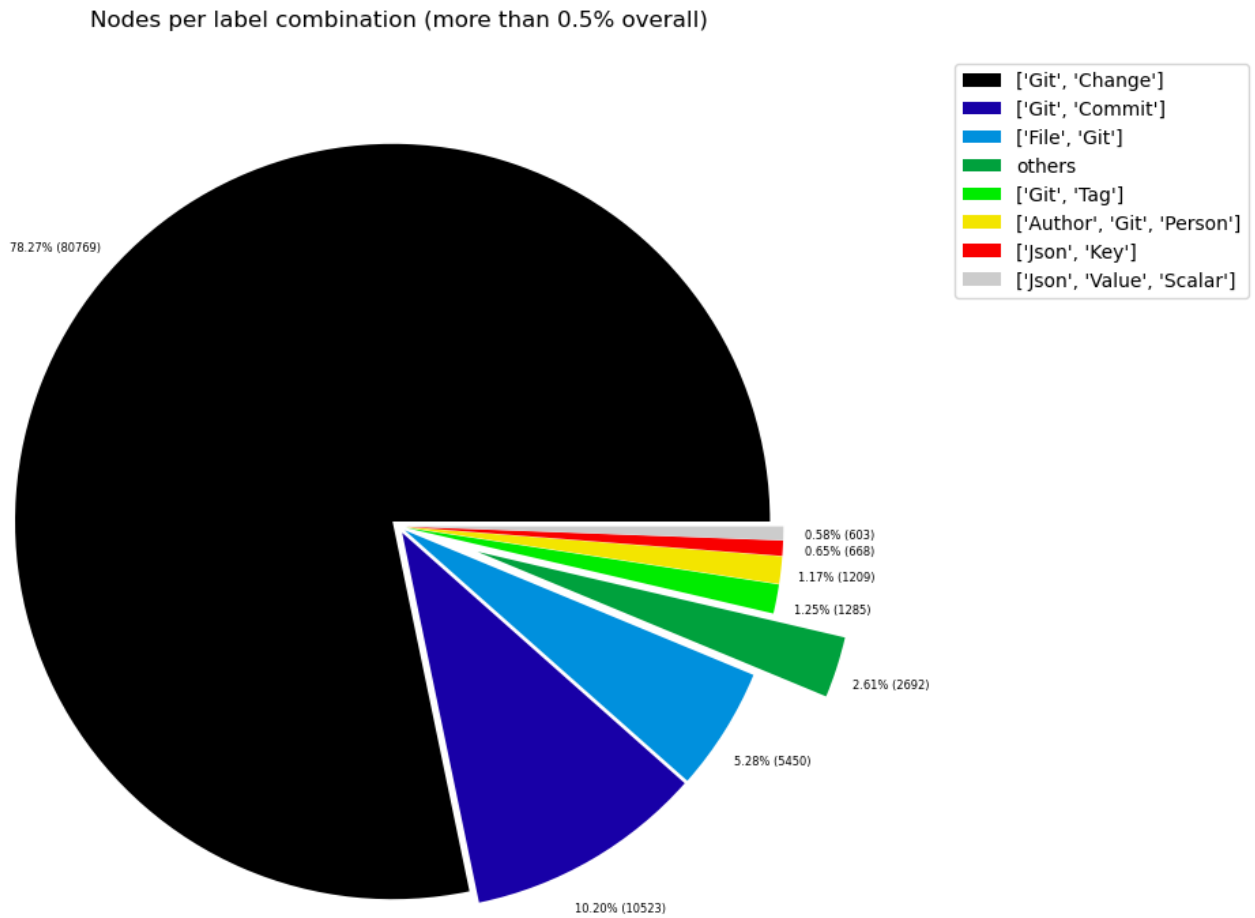2.61% (2692)
5.28% (5450)
10.20% (10523)

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	0.000969
1	[File, TS, Scan]	1	0.000969
2	[TS, Method]	1	0.000969
3	[Repository, File, Git]	1	0.000969
4	[TS, Constructor]	1	0.000969
5	[Value, TS, ObjectMember]	1	0.000969
6	[TS, Class]	1	0.000969
7	[TS, Enum]	2	0.001938
8	[Value, Object, TS]	3	0.002907
9	[Type, TS, Tuple]	3	0.002907
10	[Value, TS, Function]	4	0.003876
11	[TS, TypeParameter]	4	0.003876
12	[Value, TS, Complex]	5	0.004845
13	[NPM, Engine]	6	0.005814
14	[Project, TS]	6	0.005814
15	[File, Local]	6	0.005814
16	[Value, TS, Call]	6	0.005814
17	[Value, TS, Member]	6	0.005814
18	[File, TS, Local, Module]	6	0.005814
19	[Type, TS, TypeParameterReference]	6	0.005814
20	[TS, EnumMember]	8	0.007752
21	[Type, TS, NotIdentified]	11	0.010659
22	[Json, Value, Array]	12	0.011628
23	[Value, TS, Declared]	13	0.012597
24	[TS, TypeAlias]	16	0.015504
25	[File, Directory, Local]	16	0.015504
26	[TS, Interface]	17	0.016473
27	[Type, TS, Intersection]	17	0.016473
28	[jQAssistant, Rule, Concept]	19	0.018411
29	[Value, TS, Literal]	20	0.019380

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

Pie chart values:
- 13.78% (371)
- 12.56% (338)
- 10.81% (291)
- 10.25% (276)
- 7.99% (215)
- 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)
- 1.26% (34)
- 1.26% (34)
- 1.23% (33)
- 1.19% (32)
- 1.08% (29)
- 0.93% (25)
- 0.89% (24)
- 0.74% (20)
- 0.71% (19)
- 0.63% (17)
- 0.63% (17)
- 0.59% (16)
- 0.59% (16)
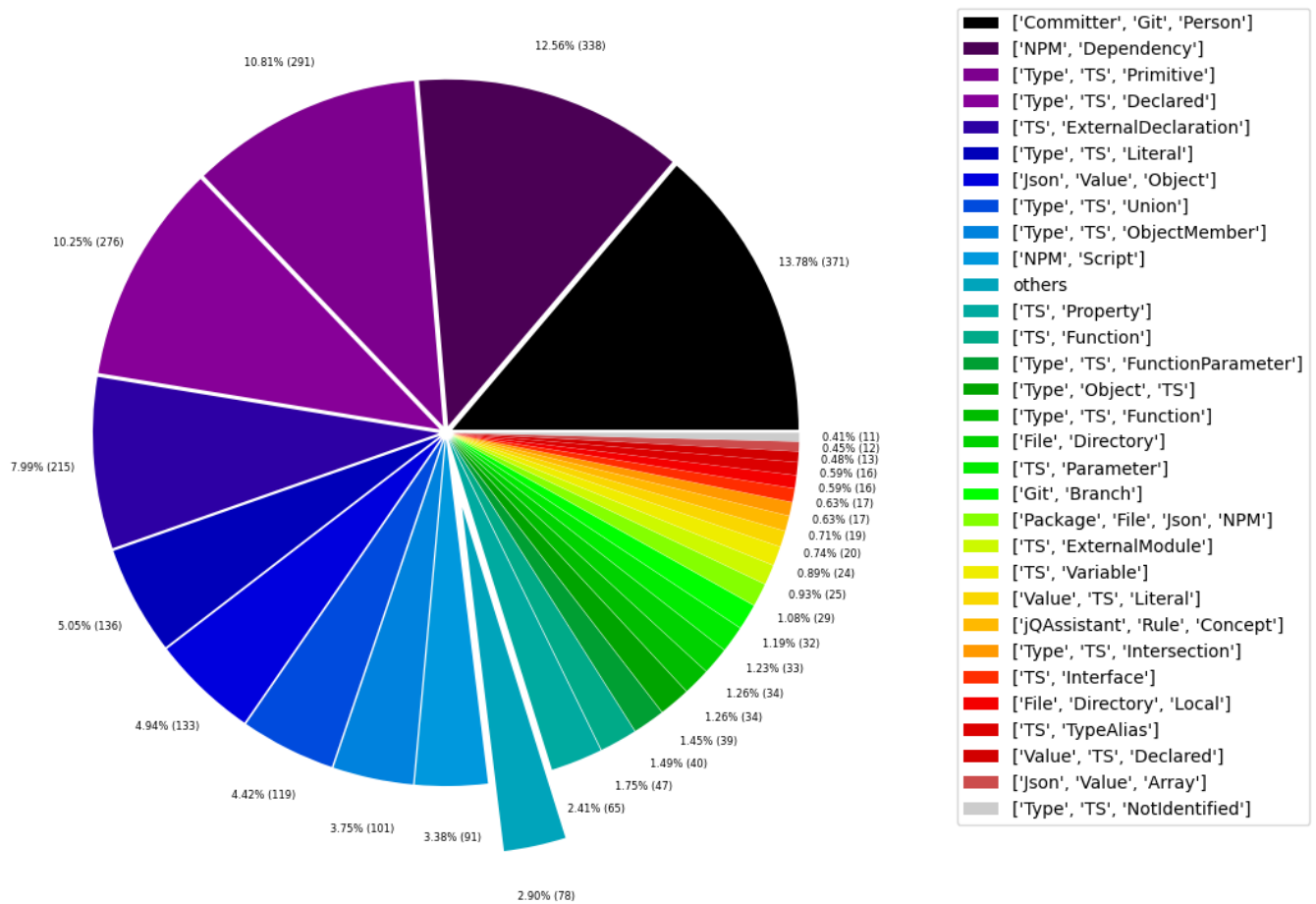- 0.48% (13)
- 0.45% (12)
- 0.41% (11)

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	99640	96.551323
1	Change	80769	78.265293
2	Commit	10523	10.196804
3	File	5543	5.371176
4	TS	1603	1.553310
5	Person	1580	1.531023
6	Json	1445	1.400207
7	Tag	1285	1.245167
8	Author	1209	1.171523
9	Type	1073	1.039739
10	Value	806	0.781015
11	Key	668	0.647293
12	Scalar	603	0.584308
13	NPM	464	0.449617
14	Committer	371	0.359500
15	Dependency	338	0.327523
16	Primitive	291	0.281979
17	Declared	289	0.280041
18	ExternalDeclaration	215	0.208335
19	Object	175	0.169575
20	Literal	156	0.151164
21	Union	119	0.115311
22	ObjectMember	102	0.098838
23	Script	91	0.088179
24	Function	85	0.082365
25	Property	65	0.062985
26	Directory	50	0.048450
27	FunctionParameter	40	0.038760
28	Parameter	33	0.031977
29	Branch	32	0.031008
30	Package	29	0.028101
31	Local	28	0.027132
32	ExternalModule	25	0.024225
33	Variable	24	0.023256
34	jQAssistant	20	0.019380
35	Concept	19	0.018411
36	Rule	19	0.018411
37	Interface	17	0.016473
38	Intersection	17	0.016473
39	TypeAlias	16	0.015504

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
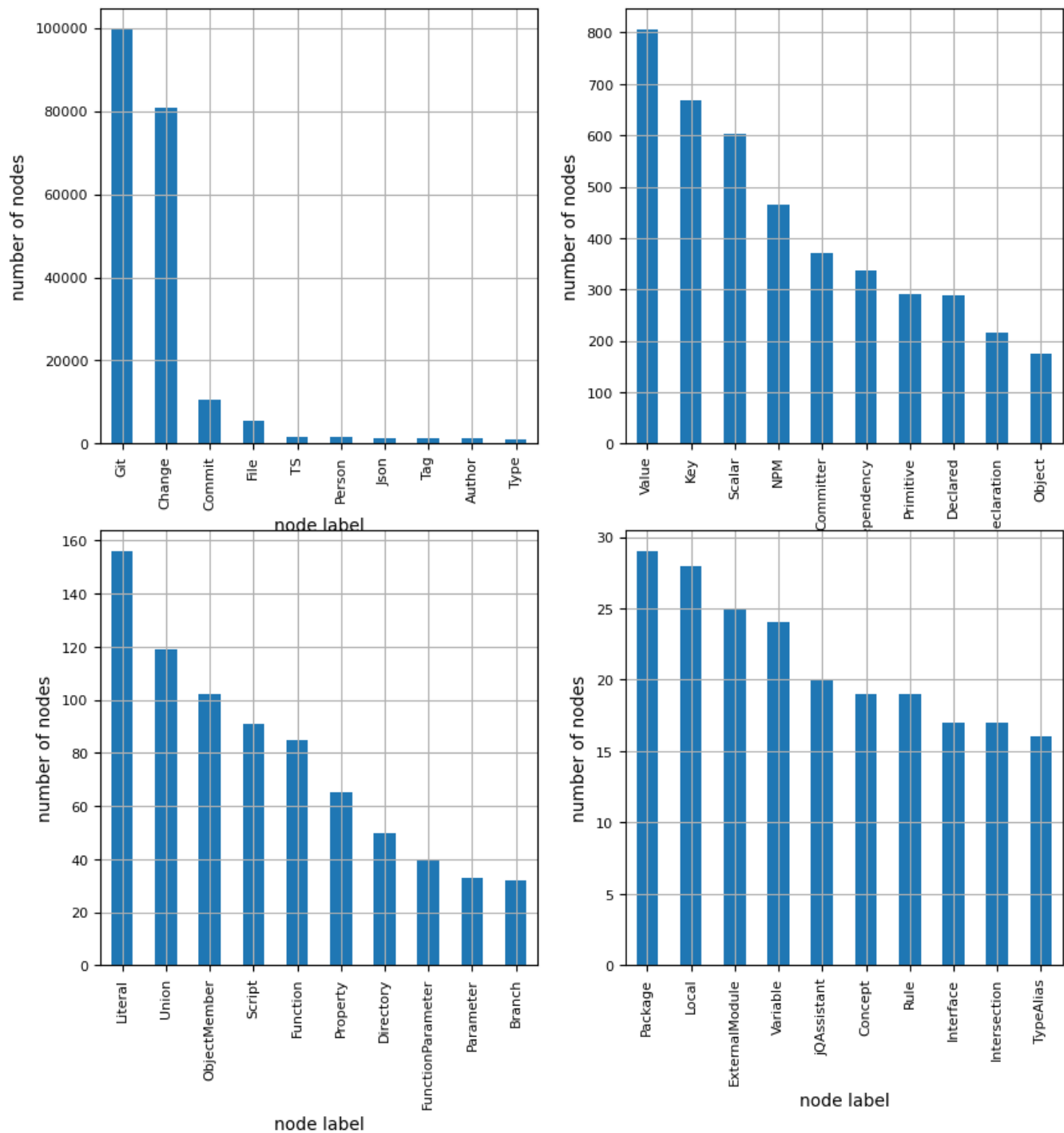
Relationship Types

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: 308209
```

	relationshipType	nodesWithThatRelationshipType	nodesWithThatRelationshipTypePercent
0	CONTAINS_CHANGE	80769	26.205919
1	MODIFIES	80769	26.205919
2	UPDATES	52825	17.139344
3	COMMITTED	21046	6.828483
4	CREATES	19564	6.347641
5	HAS_PARENT	11563	3.751675
6	DELETES	11551	3.747782
7	HAS_COMMIT	10523	3.414242
8	HAS_FILE	5450	1.768281
9	RENAMES	3171	1.028847
10	HAS_NEW_NAME	1718	0.557414
11	HAS_TAG	1285	0.416925
12	ON_COMMIT	1285	0.416925
13	HAS_AUTHOR	1209	0.392266
14	DEPENDS_ON	959	0.311152
15	HAS_KEY	668	0.216736
16	HAS_VALUE	668	0.216736
17	CONTAINS	594	0.192726
18	HAS_COMMITTER	371	0.120373
19	OF_TYPE	337	0.109341
20	EXPORTS	276	0.089550
21	REFERENCES	197	0.063918
22	DECLARES	186	0.060349
23	DECLARES_DEV_DEPENDENCY	169	0.054833
24	DECLARES_DEPENDENCY	161	0.052237
25	HAS_MEMBER	102	0.033094
26	HAS_TYPE_ARGUMENT	94	0.030499
27	DECLARES_SCRIPT	91	0.029525
28	RETURNS	82	0.026605
29	HAS_PARAMETER	73	0.023685

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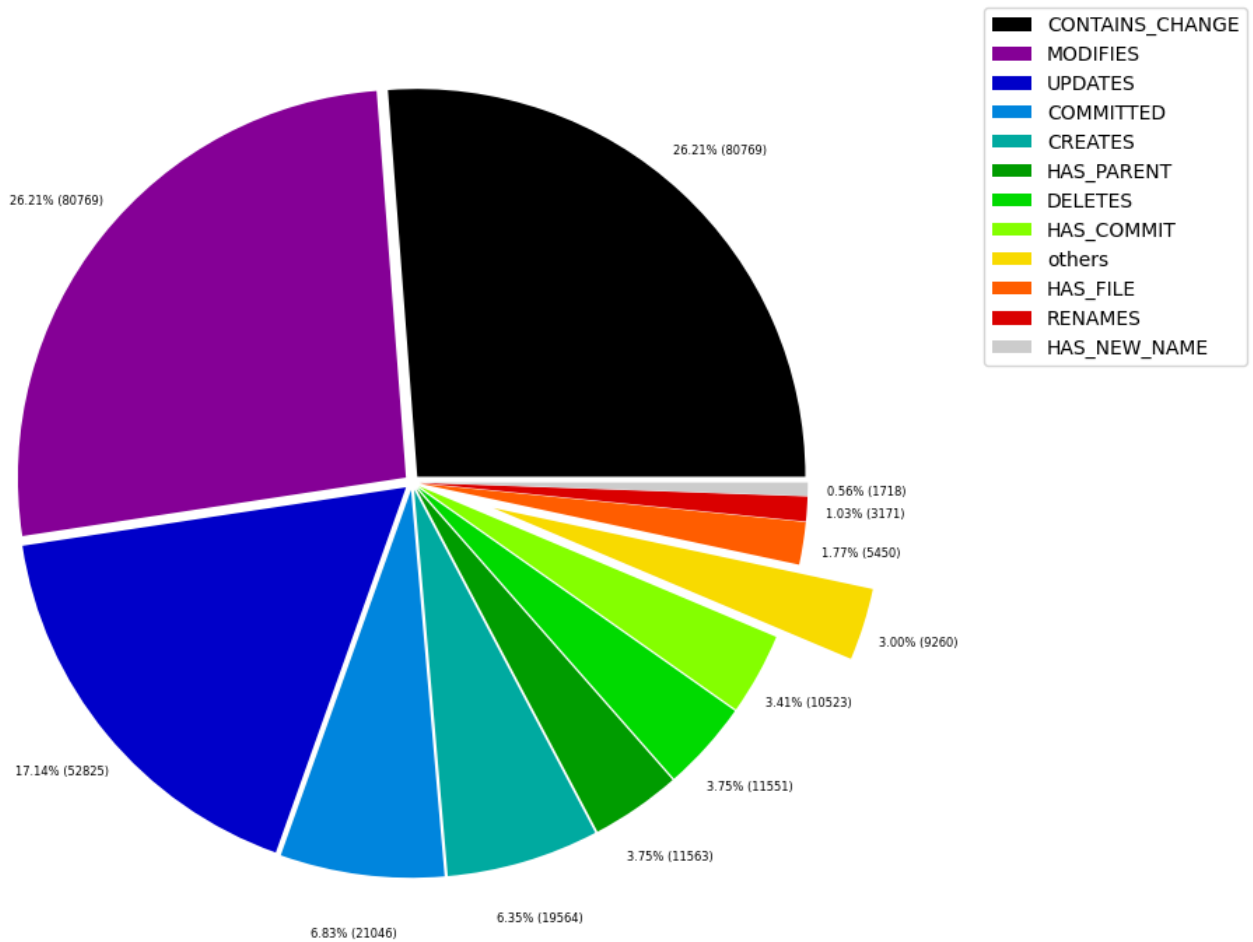
Relationship types (more than 0.5% overall)

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

26.21% (80769)
26.21% (80769)
17.14% (52825)
6.83% (21046)
6.35% (19564)
3.75% (11563)
3.75% (11551)
3.41% (10523)
3.00% (9260)
1.77% (5450)
1.03% (3171)
0.56% (1718)

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.
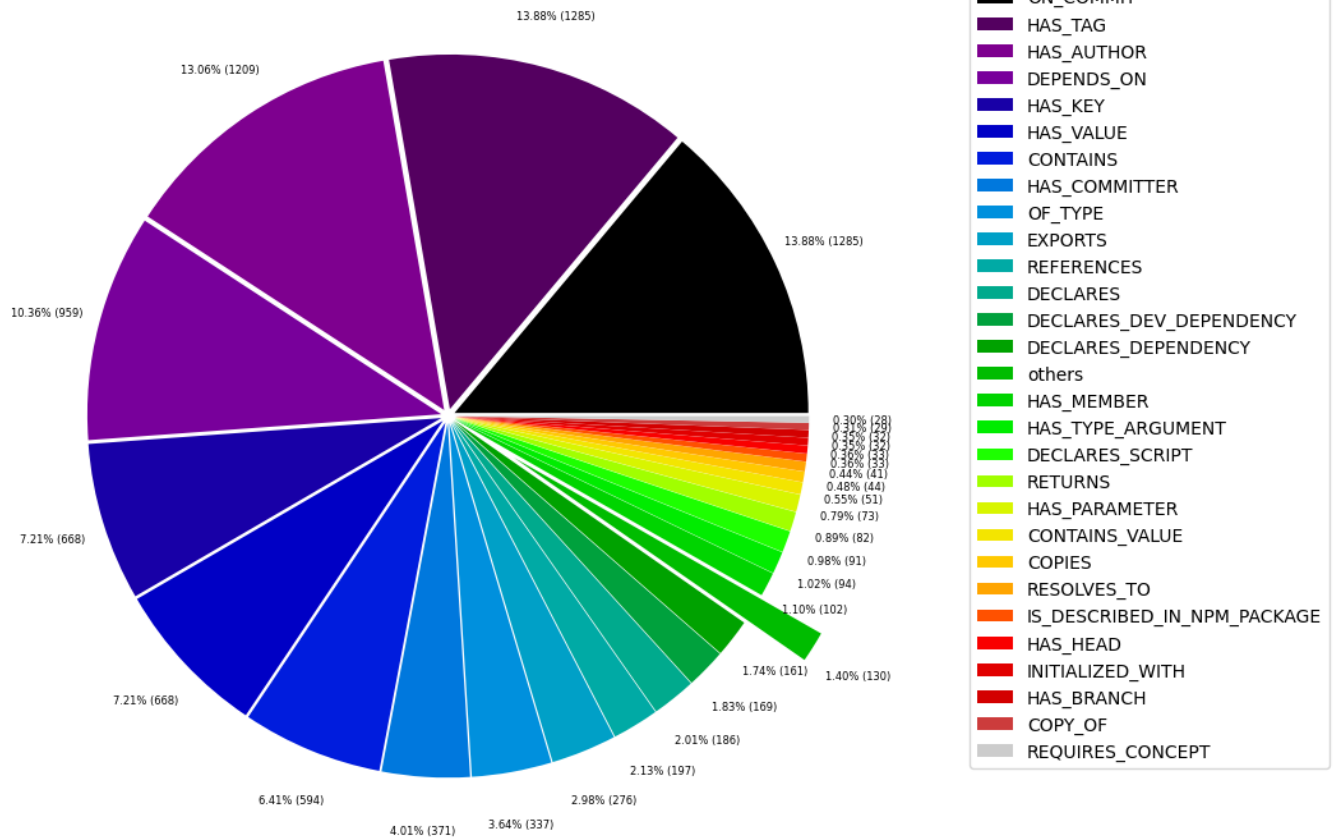
	relationshipType	nodesWithThatRelationshipType	nodesWithThatRelationshipTypePercent
0	PROVIDED_BY_NPM_DEPENDENCY	1	0.000324
1	IS_IMPLEMENTED_IN	2	0.000649
2	CONSTRAINED_BY	4	0.001298
3	REFERENCED_PROJECTS	5	0.001622
4	CONTAINS_PROJECT	6	0.001947
5	DECLARES_ENGINE	6	0.001947
6	EXTENDS	6	0.001947
7	HAS_ARGUMENT	6	0.001947
8	CALLS	6	0.001947
9	HAS_NPM_PACKAGE	6	0.001947
10	HAS_ROOT	6	0.001947
11	MEMBER	6	0.001947
12	PARENT	6	0.001947
13	HAS_CONFIG	6	0.001947
14	SIMILAR	6	0.001947
15	DECLARES_PEER_DEPENDENCY	8	0.002596
16	INCLUDES_CONCEPT	19	0.006165
17	USES	25	0.008111
18	REQUIRES_CONCEPT	28	0.009085
19	COPY_OF	29	0.009409
20	INITIALIZED_WITH	32	0.010383
21	HAS_BRANCH	32	0.010383
22	IS_DESCRIBED_IN_NPM_PACKAGE	33	0.010707
23	HAS_HEAD	33	0.010707
24	RESOLVES_TO	41	0.013303
25	COPIES	44	0.014276
26	CONTAINS_VALUE	51	0.016547
27	HAS_PARAMETER	73	0.023685
28	RETURNS	82	0.026605
29	DECLARES_SCRIPT	91	0.029525

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)

13.88% (1285)
13.06% (1209)
13.88% (1285)
10.36% (959)
7.21% (668)
7.21% (668)
6.41% (594)
4.01% (371)
3.64% (337)
2.98% (276)
2.13% (197)
2.01% (186)
1.83% (169)
1.74% (161)
1.40% (130)
1.10% (102)
1.02% (94)
0.98% (91)
0.89% (82)
0.79% (73)
0.55% (51)
0.48% (44)
0.44% (41)
0.36% (33)
0.35% (32)
0.35% (32)
0.30% (28)

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
- HAS_PARAMETER
- CONTAINS_VALUE
- COPIES
- RESOLVES_TO
- IS_DESCRIBED_IN_NPM_PACKAGE
- HAS_HEAD
- INITIALIZED_WITH
- HAS_BRANCH
- COPY_OF
- REQUIRES_CONCEPT

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]	80769	80769	
1	[Git, Commit]	CONTAINS_CHANGE	[Git, Change]	80769	10523	
2	[Git, Change]	UPDATES	[File, Git]	52825	80769	
3	[Git, Change]	CREATES	[File, Git]	19564	80769	
4	[Git, Commit]	HAS_PARENT	[Git, Commit]	11563	10523	
5	[Git, Change]	DELETES	[File, Git]	11551	80769	
6	[Repository, File, Git]	HAS_COMMIT	[Git, Commit]	10523	1	
7	[Author, Git, Person]	COMMITTED	[Git, Commit]	10523	1209	
8	[Committer, Git, Person]	COMMITTED	[Git, Commit]	10523	371	
9	[Repository, File, Git]	HAS_FILE	[File, Git]	5450	1	
10	[Git, Change]	RENAMES	[File, Git]	3171	80769	
11	[File, Git]	HAS_NEW_NAME	[File, Git]	1718	5450	
12	[Repository, File, Git]	HAS_TAG	[Git, Tag]	1285	1	
13	[Git, Tag]	ON_COMMIT	[Git, Commit]	1285	1285	
14	[Repository, File, Git]	HAS_AUTHOR	[Author, Git, Person]	1209	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]	285	47	
19	[TS, ExternalModule]	EXPORTS	[TS, ExternalDeclaration]	215	25	
20	[File, TS, Local, Module, Mark4ModuleWeaklyCon...]	DEPENDS_ON	[TS, ExternalDeclaration]	192	2	
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]	131	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): 103199
total_number_of_relationships (edges): 308209
-> total directed graph density: 2.8940001330160805e-05
-> total directed graph density in percent: 0.0028940001330160807
```