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]	76017	77.919003
1	[Git, Commit]	10136	10.389610
2	[File, Git]	5182	5.311658
3	[Author, Git, Person]	1186	1.215675
4	[Git, Tag]	1110	1.137773
5	[Json, Key]	668	0.684714
6	[Json, Value, Scalar]	603	0.618088
7	[Committer, Git, Person]	371	0.380283
8	[NPM, Dependency]	330	0.338257
9	[Type, TS, Primitive, ExternalType]	285	0.292131
10	[Type, TS, Declared, ExternalType]	272	0.278806
11	[TS, ExternalDeclaration]	215	0.220379
12	[Type, TS, Literal, ExternalType]	136	0.139403
13	[Json, Value, Object]	133	0.136328
14	[Type, TS, Union, ExternalType]	117	0.119927
15	[Type, TS, ObjectMember, ExternalType]	98	0.100452
16	[NPM, Script]	91	0.093277
17	[TS, Property]	65	0.066626
18	[TS, Function]	47	0.048176
19	[Type, Object, TS, ExternalType]	38	0.038951
20	[Type, TS, FunctionParameter, ExternalType]	37	0.037926
21	[File, Directory]	34	0.034851
22	[TS, Parameter]	33	0.033826
23	[Type, TS, Function, ExternalType]	32	0.032801
24	[Package, File, Json, NPM]	29	0.029726
25	[Git, Branch]	28	0.028701
26	[TS, ExternalModule]	25	0.025626
27	[TS, Variable]	24	0.024600
28	[Value, TS, Literal]	20	0.020500
29	[jQAssistant, Rule, Concept]	19	0.019475

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
- ['Author', 'Git', 'Person']
- ['Git', 'Tag']
- ['Json', 'Key']
- ['Json', 'Value', 'Scalar']

77.92% (76017)
0.62% (603)
0.68% (668)
1.14% (1110)
1.22% (1186)
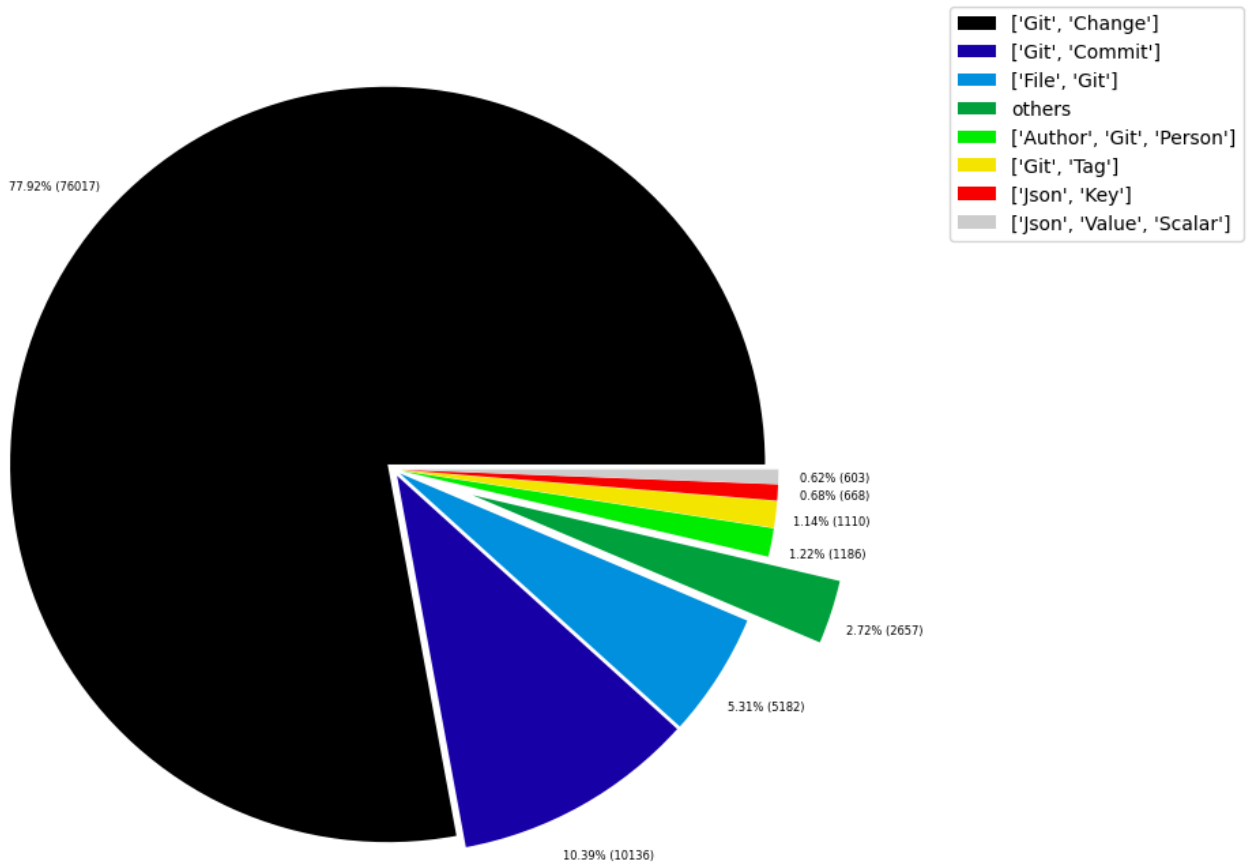2.72% (2657)
5.31% (5182)
10.39% (10136)

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	0.001025
1	[File, TS, Scan]	1	0.001025
2	[TS, Method]	1	0.001025
3	[Value, TS, ObjectMember]	1	0.001025
4	[TS, Constructor]	1	0.001025
5	[TS, Class]	1	0.001025
6	[TS, Enum]	2	0.002050
7	[Value, Object, TS]	3	0.003075
8	[Type, TS, Tuple, ExternalType]	3	0.003075
9	[Value, TS, Function]	4	0.004100
10	[TS, TypeParameter]	4	0.004100
11	[Value, TS, Complex]	5	0.005125
12	[NPM, Engine]	6	0.006150
13	[Project, TS]	6	0.006150
14	[File, Local]	6	0.006150
15	[Value, TS, Call]	6	0.006150
16	[Value, TS, Member]	6	0.006150
17	[File, TS, Local, Module]	6	0.006150
18	[Type, TS, TypeParameterReference, ExternalType]	6	0.006150
19	[TS, EnumMember]	8	0.008200
20	[Type, TS, NotIdentified, ExternalType]	11	0.011275
21	[Json, Value, Array]	12	0.012300
22	[Value, TS, Declared]	13	0.013325
23	[TS, TypeAlias]	14	0.014350
24	[File, Directory, Local]	16	0.016400
25	[Type, TS, Intersection, ExternalType]	17	0.017425
26	[TS, Interface]	18	0.018450
27	[jQAssistant, Rule, Concept]	19	0.019475
28	[Value, TS, Literal]	20	0.020500
29	[TS, Variable]	24	0.024600

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

Pie chart values: 12.42% (330), 10.73% (285), 10.24% (272), 13.96% (371), 8.09% (215), 5.12% (136), 5.01% (133), 4.40% (117), 3.69% (98), 3.42% (91), 2.60% (69), 2.45% (65), 1.77% (47), 1.43% (38), 1.39% (37), 1.28% (34), 1.24% (33), 1.20% (32), 1.09% (29), 1.05% (28), 0.94% (25), 0.90% (24), 0.75% (20), 0.72% (19), 0.68% (18), 0.64% (17), 0.60% (16), 0.53% (14), 0.49% (13), 0.45% (12), 0.41% (11), 0.30% (8)
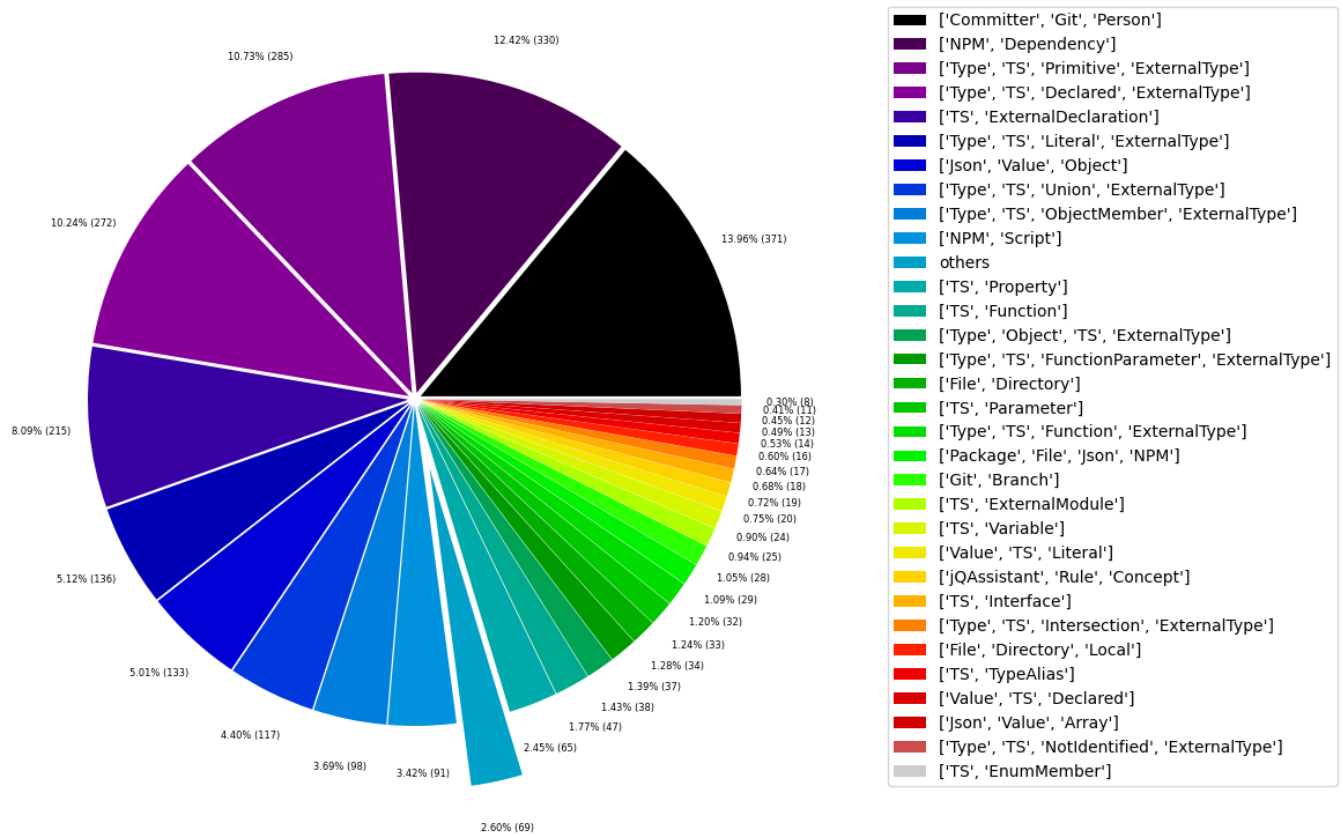
Table 1c - Highest node count by single label

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	94030	96.382702
1	Change	76017	77.919003
2	Commit	10136	10.389610
3	File	5274	5.405959
4	TS	1581	1.620558
5	Person	1557	1.595957
6	Json	1445	1.481155
7	Author	1186	1.215675
8	Tag	1110	1.137773
9	ExternalType	1052	1.078322
10	Type	1052	1.078322
11	Value	806	0.826167
12	Key	668	0.684714
13	Scalar	603	0.618088
14	NPM	456	0.467409
15	Committer	371	0.380283
16	Dependency	330	0.338257
17	Declared	285	0.292131
18	Primitive	285	0.292131
19	ExternalDeclaration	215	0.220379
20	Object	174	0.178354
21	Literal	156	0.159903
22	Union	117	0.119927
23	ObjectMember	99	0.101477
24	Script	91	0.093277
25	Function	83	0.085077
26	Property	65	0.066626
27	Directory	50	0.051251
28	FunctionParameter	37	0.037926
29	Parameter	33	0.033826
30	Package	29	0.029726
31	Branch	28	0.028701
32	Local	28	0.028701
33	ExternalModule	25	0.025626
34	Variable	24	0.024600
35	jQAssistant	20	0.020500
36	Concept	19	0.019475
37	Rule	19	0.019475
38	Interface	18	0.018450
39	Intersection	17	0.017425

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
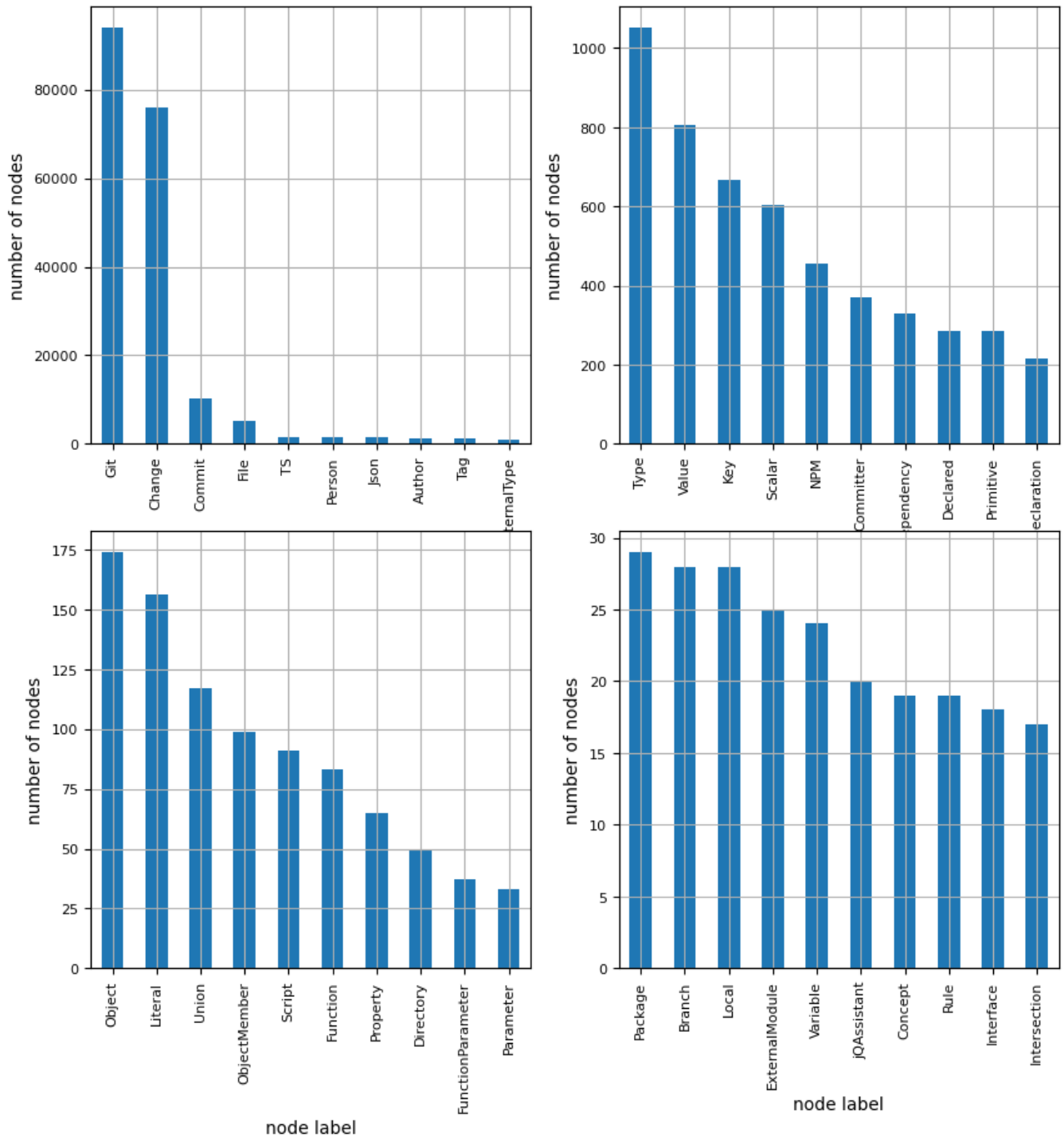
Relationship Types

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: 272776
```

	relationshipType	nodesWithThatRelationshipType	nodesWithThatRelationshipTypePercent
0	CONTAINS_CHANGE	76017	27.867921
1	MODIFIES	76017	27.867921
2	UPDATES	50106	18.368918
3	COMMITTED	20272	7.431739
4	CREATES	18156	6.656011
5	HAS_PARENT	11161	4.091636
6	DELETES	10536	3.862510
7	RENAMES	2781	1.019518
8	HAS_NEW_NAME	1572	0.576297
9	ON_COMMIT	1110	0.406927
10	DEPENDS_ON	962	0.352670
11	HAS_KEY	668	0.244890
12	HAS_VALUE	668	0.244890
13	CONTAINS	589	0.215928
14	OF_TYPE	329	0.120612
15	EXPORTS	275	0.100815
16	REFERENCES	196	0.071854
17	DECLARES	185	0.067821
18	DECLARES_DEV_DEPENDENCY	169	0.061956
19	DECLARES_DEPENDENCY	161	0.059023
20	HAS_MEMBER	99	0.036294
21	HAS_TYPE_ARGUMENT	92	0.033727
22	DECLARES_SCRIPT	91	0.033361
23	RESOLVES_TO	80	0.029328
24	RETURNS	80	0.029328
25	HAS_PARAMETER	70	0.025662
26	CONTAINS_VALUE	51	0.018697
27	COPIES	43	0.015764
28	INITIALIZED_WITH	32	0.011731
29	COPY_OF	28	0.010265

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)

27.87% (76017)
27.87% (76017)
0.58% (1572)
1.02% (2781)
2.26% (6158)
3.86% (10536)
4.09% (11161)
6.66% (18156)
7.43% (20272)
18.37% (50106)

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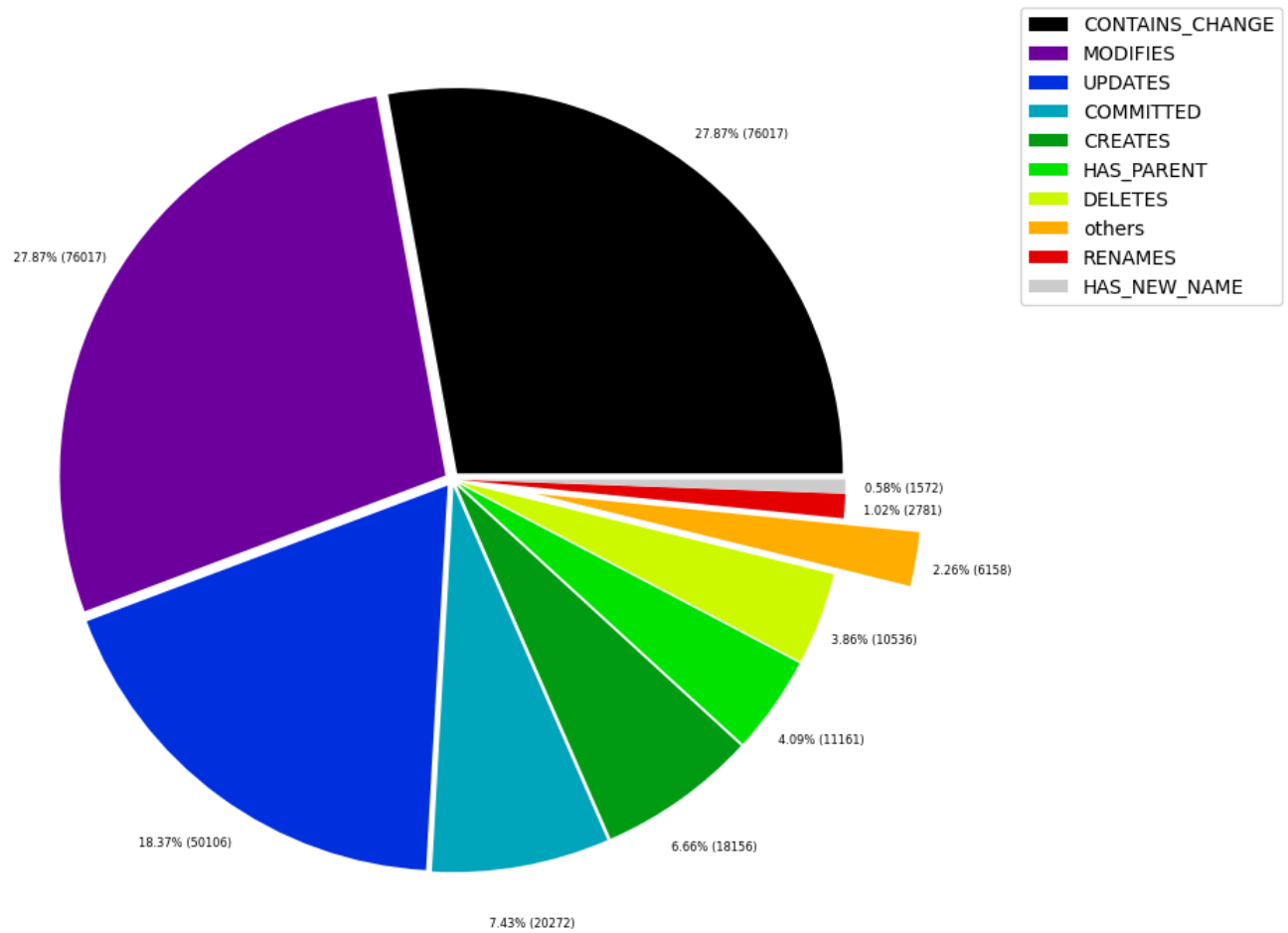- HAS_PARENT
- DELETES
- others
- RENAMES
- HAS_NEW_NAME

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.
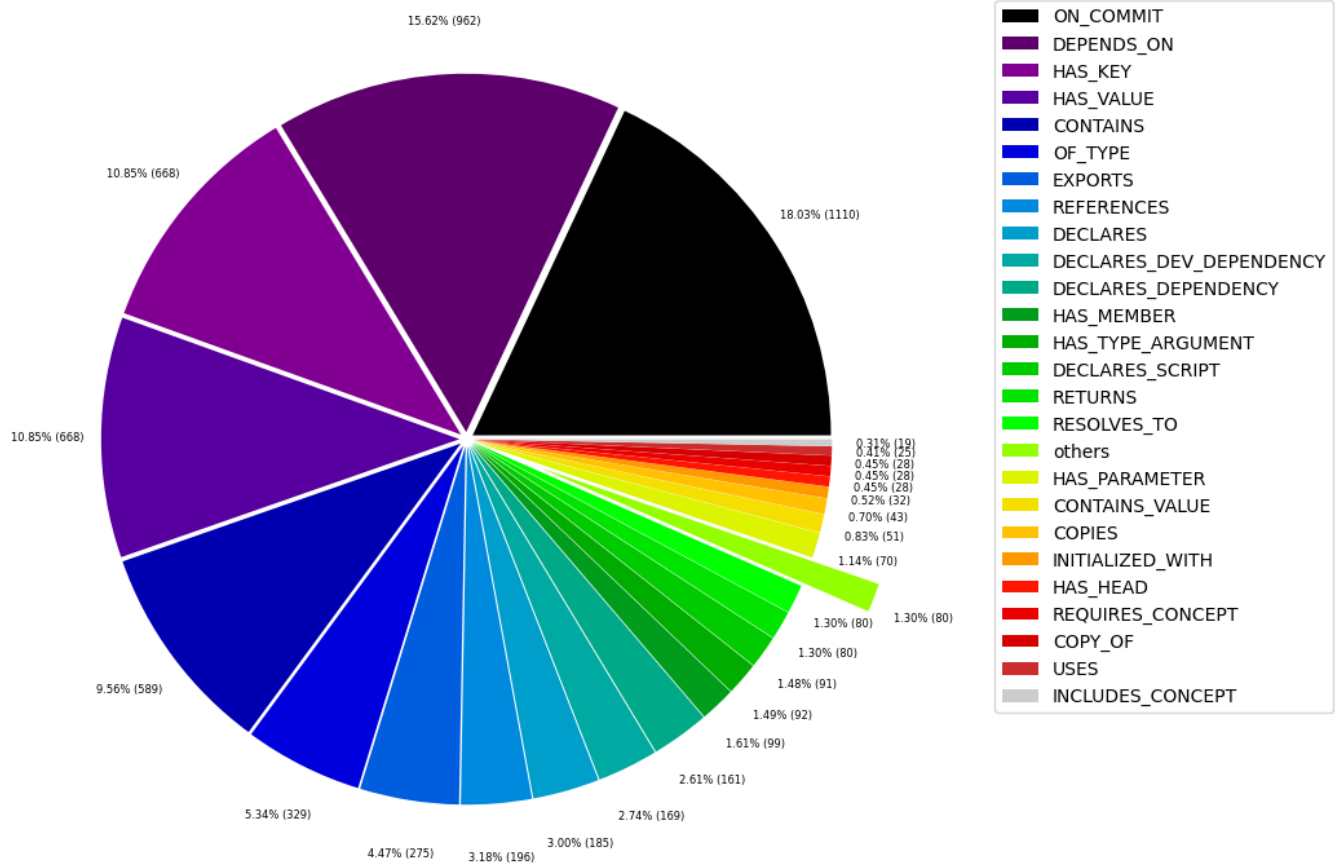
	relationshipType	nodesWithThatRelationshipType	nodesWithThatRelationshipTypePercent
0	CONSTRAINED_BY	4	0.001466
1	REFERENCED_PROJECTS	5	0.001833
2	MEMBER	6	0.002200
3	HAS_ROOT	6	0.002200
4	HAS_NPM_PACKAGE	6	0.002200
5	HAS_CONFIG	6	0.002200
6	HAS_ARGUMENT	6	0.002200
7	DECLARES_ENGINE	6	0.002200
8	CONTAINS_PROJECT	6	0.002200
9	CALLS	6	0.002200
10	PARENT	6	0.002200
11	EXTENDS	7	0.002566
12	SIMILAR	10	0.003666
13	INCLUDES_CONCEPT	19	0.006965
14	USES	25	0.009165
15	REQUIRES_CONCEPT	28	0.010265
16	HAS_HEAD	28	0.010265
17	COPY_OF	28	0.010265
18	INITIALIZED_WITH	32	0.011731
19	COPIES	43	0.015764
20	CONTAINS_VALUE	51	0.018697
21	HAS_PARAMETER	70	0.025662
22	RETURNS	80	0.029328
23	RESOLVES_TO	80	0.029328
24	DECLARES_SCRIPT	91	0.033361
25	HAS_TYPE_ARGUMENT	92	0.033727
26	HAS_MEMBER	99	0.036294
27	DECLARES_DEPENDENCY	161	0.059023
28	DECLARES_DEV_DEPENDENCY	169	0.061956
29	DECLARES	185	0.067821

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)

18.03% (1110) — ON_COMMIT
15.62% (962)
10.85% (668)
10.85% (668)
9.56% (589)
5.34% (329)
4.47% (275)
3.18% (196)
3.00% (185)
2.74% (169)
2.61% (161)
1.61% (99)
1.49% (92)
1.48% (91)
1.30% (80)
1.30% (80)
1.30% (80)
1.14% (70)
0.83% (51)
0.70% (43)
0.52% (32)
0.45% (28)
0.45% (28)
0.45% (28)
0.41% (25)
0.31% (19)

Legend:
- ON_COMMIT
- DEPENDS_ON
- HAS_KEY
- HAS_VALUE
- CONTAINS
- OF_TYPE
- EXPORTS
- REFERENCES
- DECLARES
- DECLARES_DEV_DEPENDENCY
- DECLARES_DEPENDENCY
- HAS_MEMBER
- HAS_TYPE_ARGUMENT
- DECLARES_SCRIPT
- RETURNS
- RESOLVES_TO
- others
- HAS_PARAMETER
- CONTAINS_VALUE
- COPIES
- INITIALIZED_WITH
- HAS_HEAD
- REQUIRES_CONCEPT
- COPY_OF
- USES
- INCLUDES_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, Commit]	CONTAINS_CHANGE	[Git, Change]	76017	10136	
1	[Git, Change]	MODIFIES	[File, Git]	76017	76017	
2	[Git, Change]	UPDATES	[File, Git]	50106	76017	
3	[Git, Change]	CREATES	[File, Git]	18156	76017	
4	[Git, Commit]	HAS_PARENT	[Git, Commit]	11161	10136	
5	[Git, Change]	DELETES	[File, Git]	10536	76017	
6	[Author, Git, Person]	COMMITTED	[Git, Commit]	10136	1186	
7	[Committer, Git, Person]	COMMITTED	[Git, Commit]	10136	371	
8	[Git, Change]	RENAMES	[File, Git]	2781	76017	
9	[File, Git]	HAS_NEW_NAME	[File, Git]	1572	5182	
10	[Git, Tag]	ON_COMMIT	[Git, Commit]	1110	1110	
11	[Json, Value, Object]	HAS_KEY	[Json, Key]	668	133	
12	[Json, Key]	HAS_VALUE	[Json, Value, Scalar]	552	668	
13	[TS, Function]	DEPENDS_ON	[TS, ExternalDeclaration]	285	47	
14	[TS, ExternalModule]	EXPORTS	[TS, ExternalDeclaration]	215	25	
15	[File, TS, Local, Module, Mark4ModuleWeaklyCon...]	DEPENDS_ON	[TS, ExternalDeclaration]	192	3	
16	[Package, File, Json, NPM]	DECLARES_DEV_DEPENDENCY	[NPM, Dependency]	169	29	
17	[Package, File, Json, NPM]	DECLARES_DEPENDENCY	[NPM, Dependency]	161	29	
18	[Type, TS, Union, ExternalType]	CONTAINS	[Type, TS, Primitive, ExternalType]	144	117	
19	[Type, TS, Declared, ExternalType]	REFERENCES	[TS, ExternalDeclaration]	141	272	
20	[TS, Function]	DEPENDS_ON	[TS, ExternalModule]	131	47	
21	[Type, TS, Union, ExternalType]	CONTAINS	[Type, TS, Literal, ExternalType]	119	117	
22	[Json, Key]	HAS_VALUE	[Json, Value, Object]	104	668	
23	[Type, Object, TS, ExternalType]	HAS_MEMBER	[Type, TS, ObjectMember, ExternalType]	98	38	
24	[Package, File, Json, NPM]	DECLARES_SCRIPT	[NPM, Script]	91	29	
25	[Type, TS, Union, ExternalType]	CONTAINS	[Type, TS, Declared, ExternalType]	69	117	
26	[File, Directory]	CONTAINS	[File, Directory]	63	34	
27	[TS, Interface]	DECLARES	[TS, Property]	61	18	
28	[File, Directory]	CONTAINS	[Package, File, Json, NPM]	58	34	
29	[File, Git]	RESOLVES_TO	[Package, File, Json, NPM]	57	5182	

Graph Density

```
total_number_of_nodes (vertices): 97559
total_number_of_relationships (edges): 272776
-> total directed graph density: 2.8659982976434934e-05
-> total directed graph density in percent: 0.0028659982976434934
```