Querying the Neo4j Data

To explore the Neo4j data related to the German Grundgesetz (GG) and Bundesverfassungsgericht (BVerfGE) cases, here are some useful queries you can run, categorized by the types of insights you are interested in:

1. Article-Based Queries

a. List Articles with the Most Citations

```
MATCH (a:Article)
RETURN a.number AS ArticleNumber, a.total_case_citations AS TotalCitations
ORDER BY a.total_case_citations DESC
LIMIT 10;
```

b. Find Articles Referenced by a Specific Case

```
MATCH (c:Case)-[:REFERS_TO]->(a:Article)
WHERE c.id = '2 BvR 552/63'
RETURN a.number AS ArticleNumber, a.text AS ArticleText;
```

c. Find Cases Referencing a Specific Article

```
MATCH (c:Case)-[:REFERS_TO]->(a:Article)
WHERE a.number = '19'
RETURN c.id AS CaseID, c.headnotes AS CaseHeadnotes
ORDER BY c.total_case_citations DESC;
```

2. Case-Based Queries

a. List Cases with the Most Citations along with their Names

```
MATCH (c:Case)-[:IS_NAMED]->(n:Name)
RETURN n.short AS CaseName,  c.id AS CaseID, c.total_case_citations AS
TotalCitations
ORDER BY c.total_case_citations DESC
LIMIT 10;
```

b. Find Other Cases Referenced by a Specific Case

```
MATCH (c:Case)-[r:REFERS_TO]->(other:Case)
WHERE c.id = "2 BvR 988/75"
RETURN other.id AS ReferencedCaseID, r.number_of_references AS
NumberOfReferences
ORDER BY NumberOfReferences DESC;
```

c. Find Cases Referencing a Specific Article

```
MATCH (c:Case)-[:REFERS_TO]->(a:Article)
WHERE a.number = '19'
RETURN c.id AS CaseID, c.headnotes AS CaseHeadnotes, c.reasoning AS
CaseReasoning;
```

d. Find Case Nodes with the Same “number” but different “id”

```
MATCH (c:Case)
WITH c.number AS CaseNumber, count(c.id) AS CaseCount
RETURN CaseNumber, CaseCount
ORDER BY CaseCount DESC;
```

3. TOC-Based Queries

a. List All Sections in a Specific TOC

```
MATCH (t:TOC)-[:PART_OF*]->(section:TOC)
WHERE section.id = 'Grundrechte-Klausur-und-Examenswissen > Abschnitt 2 Aufbau der Prüfung eines Freiheitsgrundrechts'
RETURN t.text AS SectionTitle, t.id AS SectionID
ORDER BY t.id;
```

b. Find References in a Specific TOC Section

```
MATCH p=(r:Reference {id: "Grundrechte-Klausur-und-Examenswissen > Abschnitt 2 Aufbau der Prüfung eines Freiheitsgrundrechts > § 6 Einschränkbarkeit des Grundrechts – Schranken"})-[:PART_OF]->()
RETURN p LIMIT 25;
```

4. Reference-Based Queries

a. Find All References to a Specific Article in Textbooks

```
MATCH (r:Reference)-[:MENTIONS]->(a:Article)
WHERE a.number = '14'
RETURN r.text AS ReferenceText, r.context AS ReferenceContext
ORDER BY r.id;
```

b. Find the Referenced Articles and Show their Context

```
MATCH (a:Article)<-[m:MENTIONS]-(r:Reference)
RETURN a.number AS ArticleNumber, r.context as Context;
```

c. Find the Most Frequently Mentioned Cases in the Textbooks

```
MATCH (c:Case)<-[m:MENTIONS]-(r:Reference)
RETURN c.number AS CaseNumber, count(m) AS MentionsCount
ORDER BY MentionsCount DESC;
```

5. Relationship-Based Queries

a. Find Articles Cited by Other Articles

```
MATCH (a1:Article)-[:CITES]->(a2:Article)
RETURN a1.number AS CitingArticle, a2.number AS CitedArticle
ORDER BY a1.number, a2.number;
```

b. Explore Named Cases

```
MATCH (c:Case)-[:IS_NAMED]->(n:Name)
```

```
RETURN c.id AS CaseID, c.number AS CaseNumber, n.short AS CaseName, c.year AS
CaseYear
ORDER BY c.year DESC;
```

c. List Cases Referenced by Other Cases

```
MATCH (c1:Case)-[:REFERS_TO]->(c2:Case)
RETURN c1.id AS CaseID, c2.id AS ReferencedCaseID, count(*) AS
NumberOfReferences
ORDER BY NumberOfReferences DESC;
```

6. Advanced Queries

a. Identify Articles Frequently Cited Together in Textbooks

```
MATCH (ref:Reference)-[:MENTIONS]->(a1:Article),
      (ref)-[:MENTIONS]->(a2:Article)
WHERE id(a1) < id(a2)
RETURN a1.number AS Article1, a2.number AS Article2, count(ref) AS MentionCount
ORDER BY MentionCount DESC;
```

b. Track Citation Trends Over Time

```
MATCH (c:Case)
WITH c.year AS Year, sum(c.total_case_citations) AS TotalCitations
RETURN Year, TotalCitations
ORDER BY Year;
```

These queries should help you get a comprehensive understanding of the relationships and references within your dataset. Adjust the queries as needed based on specific questions or insights you want to extract.