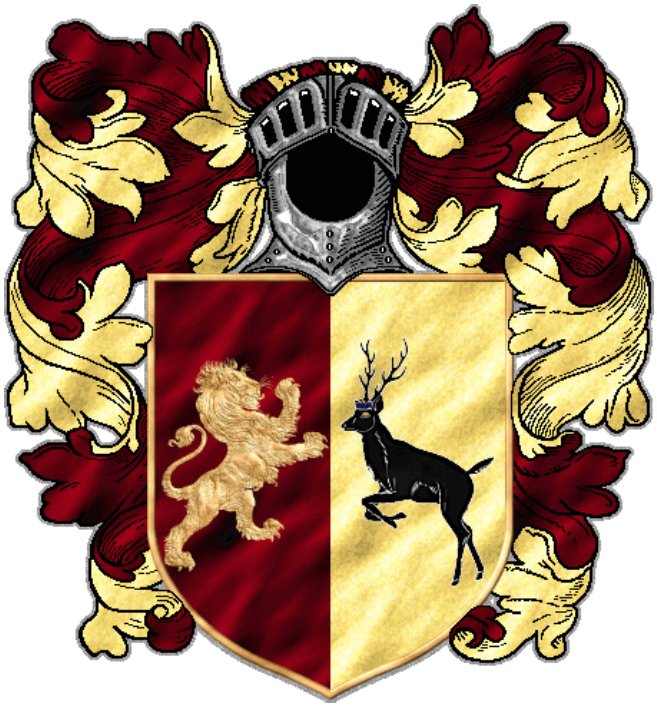
The Lineages of the Great Houses of the Seven Kingdoms



Designed by Talia Rossi

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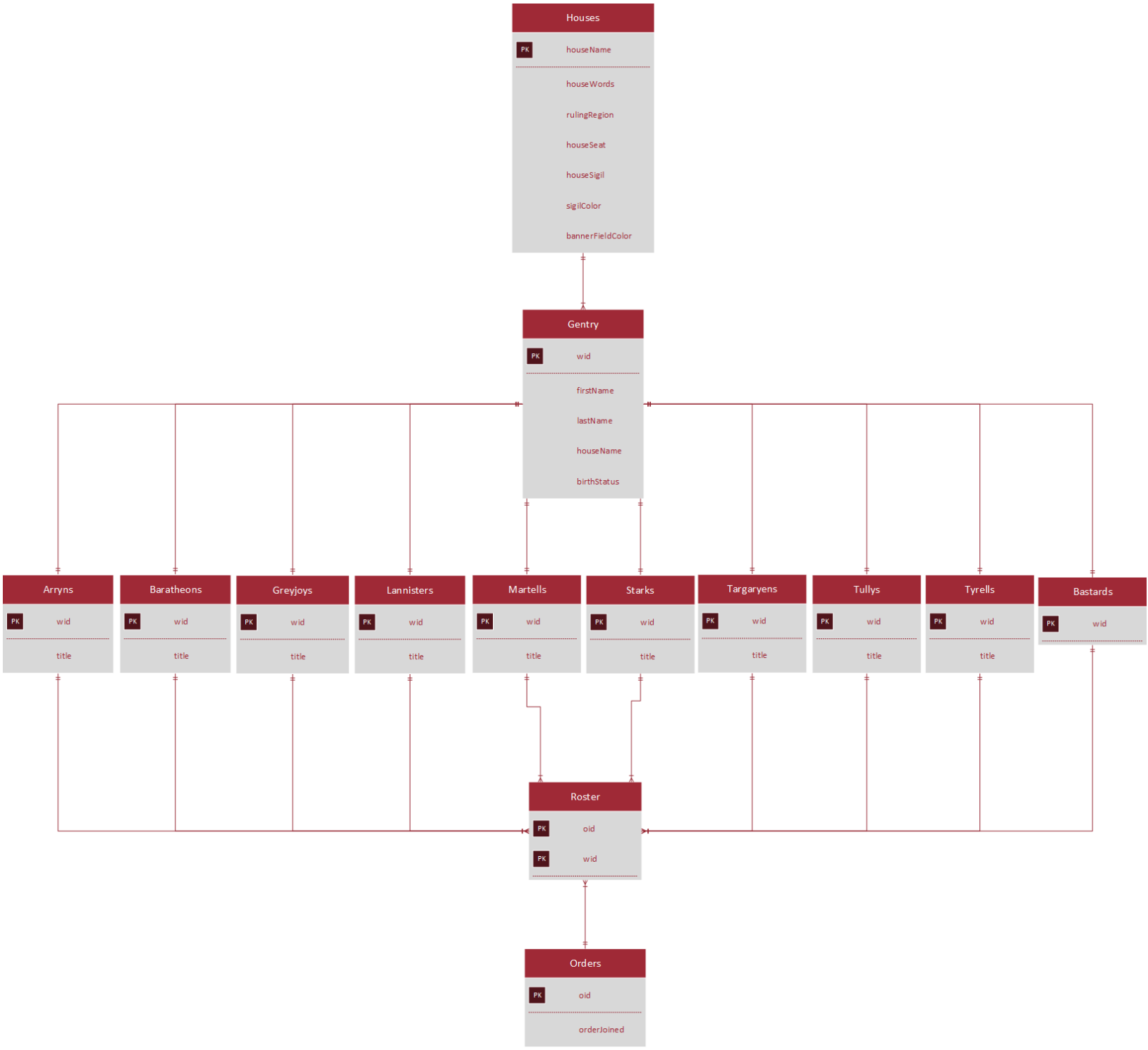
Executive Summary

This document displays a database that could be used as a guide to the lineages of the great houses of the Seven Kingdoms of Westeros from the popular book series, “A Song of Ice and Fire.” This database displays nearly every member of these great houses along with a number of facts about each individual and his or her house. These facts include, but are not limited to: name, name of house, achieved title, house colors, house sigil, house words, and location each house has dominion over. This database can be used as a means of Westeros historical reference, allowing the user to view the descent of every character, as well as information about each character and his or her family.

This guide begins with an Entity Relationship diagram to display the relationships between the various tables. Next, each table is specifically examined, displaying description, create statement, functional dependencies, and some sample data. Then, the views, reports, stored procedures, and triggers are shown along with their own descriptions and PostgreSQL syntax. Finally, the document concludes with security features along with notes regarding the database’s implementation, issues, and future enhancements.

Entity Relationship Diagram



Tables

- Houses table
  - The Houses table consists of the nine great houses of the Seven Kingdoms. This table specifies information regarding where each house resides, what their banner looks like, and their house words.

```
CREATE TABLE houses (
        houseName           TEXT NOT NULL,
        houseWords          TEXT,
        rulingRegion        TEXT,
        houseSeat           TEXT,
        houseSigil          TEXT,
        sigilColor          TEXT,
        bannerFieldColor    TEXT,
        PRIMARY KEY (houseName)
);
```

  - Functional Dependencies: houseName → houseWords, rulingRegion, houseSeat, houseSigil, sigilColor, bannerFieldColor
  - Sample data:

	housename text	housewords text	rulingregion text	houseseat text	housesigil text	sigilcolor text	bannerfieldcolor text
1	Arryn	As High As Honor	the Vale	the Eyrie	moon and falcon	celest and white	celest
2	Baratheon	Ours is the Fury	the Stormlands	Storm's End	stag	black	gold
3	Greyjoy	We Do Not Sow	the Iron Islands	Pyke	kraken	gold	black
4	Lannister	Hear Me Roar	the Westerlands	Casterly Rock	lion	gold	red
5	Martell	Unbowed, Unbent, Unbroken	Dorne	Sunspear	sun pierced by a spear	red and gold	orange
6	Stark	Winter is Coming	the North	WInterfell	direwolf	grey	white
7	Targaryen	Fire and Blood	the Crownlands	Dragonstone	three-headed dragon	red	black
8	Tully	Family, Duty, Honor	the Riverlands	Riverrun	trout	silver	red and blue
9	Tyrell	Growing Strong	the Reach	Highgarden	rose	gold	green

- Gentry table
  - The Gentry table consists of all the lords and ladies (including bastards) who are, or were once, a member of one of the great houses of the Seven Kingdoms. This table lists their full names, their house names, and whether they are true born or not.

```
CREATE TABLE gentry (
        wid             CHAR(5) NOT NULL,
        firstName       TEXT,
        lastName        TEXT,
        houseName       TEXT,
        birthStatus     TEXT,
        primary key (wid)
);
```

  - Functional Dependencies: wid → firstName, lastName, houseName, birthStatus
  - Sample data (continues on to the next two pages):

	wid character(5)	firstname text	lastname text	housename text	birthstatus text
1	w001	Jasper	Arryn	Arryn	true born
2	w002	Jon	Arryn	Arryn	true born
3	w003	Alys	Arryn	Arryn	true born
4	w004	Ronnel	Arryn	Arryn	true born
5	w005	Robert	Arryn	Arryn	true born
6	w006	Denys	Arryn	Arryn	true born
7	w007	Elbert	Arryn	Arryn	true born
8	w008	Harbert	Baratheon	Baratheon	true born
9	w009	Steffon	Baratheon	Baratheon	true born
10	w010	Robert	Baratheon	Baratheon	true born
11	w011	Stannis	Baratheon	Baratheon	true born
12	w012	Renly	Baratheon	Baratheon	true born
13	w013	Joffrey	Baratheon	Baratheon	true born
14	w014	Myrcella	Baratheon	Baratheon	true born
15	w015	Tommen	Baratheon	Baratheon	true born
16	w016	Shireen	Baratheon	Baratheon	true born
17	w017	Mya	Stone	Baratheon	base born
18	w018	Edric	Storm	Baratheon	base born
19	w019	Gendry	Waters	Baratheon	base born
20	w020	Quellon	Greyjoy	Greyjoy	true born
21	w021	Balon	Greyjoy	Greyjoy	true born
22	w022	Euron	Greyjoy	Greyjoy	true born
23	w023	Victario	Greyjoy	Greyjoy	true born
24	w024	Urrigon	Greyjoy	Greyjoy	true born
25	w025	Aeron	Greyjoy	Greyjoy	true born
26	w026	Harlon	Greyjoy	Greyjoy	true born
27	w027	Quenton	Greyjoy	Greyjoy	true born
28	w028	Donel	Greyjoy	Greyjoy	true born
29	w029	Rodrik	Greyjoy	Greyjoy	true born

	wid character(5)	firstname text	lastname text	housename text	birthstatus text
30	w030	Maron	Greyjoy	Greyjoy	true born
31	w031	Asha	Greyjoy	Greyjoy	true born
32	w032	Theon	Greyjoy	Greyjoy	true born
33	w033	Robin	Greyjoy	Greyjoy	true born
34	w034	Tytos	Lannister	Lannister	true born
35	w035	Tywin	Lannister	Lannister	true born
36	w036	Kevan	Lannister	Lannister	true born
37	w037	Tygett	Lannister	Lannister	true born
38	w038	Gerion	Lannister	Lannister	true born
39	w039	Genna	Lannister	Lannister	true born
40	w040	Cersei	Lannister	Lannister	true born
41	w041	Jaime	Lannister	Lannister	true born
42	w042	Tyrion	Lannister	Lannister	true born
43	w043	Lancel	Lannister	Lannister	true born
44	w044	Willem	Lannister	Lannister	true born
45	w045	Martyn	Lannister	Lannister	true born
46	w046	Janei	Lannister	Lannister	true born
47	w047	Joy	Hill	Lannister	base born
48	w048	Lewyn	Martell	Martell	true born
49	w049	Doran	Martell	Martell	true born
50	w050	Mors	Martell	Martell	true born
51	w051	Olyvar	Martell	Martell	true born
52	w052	Elia	Martell	Martell	true born
53	w053	Oberyn	Martell	Martell	true born
54	w054	Arianne	Martell	Martell	true born
55	w055	Quentyn	Martell	Martell	true born
56	w056	Trystane	Martell	Martell	true born
57	w058	Obara	Sand	Martell	base born
58	w059	Nymeria	Sand	Martell	base born
59	w060	Tyene	Sand	Martell	base born
60	w061	Sarella	Sand	Martell	base born
61	w062	Elia	Sand	Martell	base born
62	w063	Obella	Sand	Martell	base born
63	w064	Dorea	Sand	Martell	base born
64	w065	Loreza	Sand	Martell	base born
65	w066	Willam	Stark	Stark	true born
66	w067	Artos	Stark	Stark	true born
67	w068	Edwyle	Stark	Stark	true born
68	w069	Brandon	Stark	Stark	true born
69	w070	Rickard	Stark	Stark	true born
70	w071	Brandon	Stark	Stark	true born
71	w072	Eddard	Stark	Stark	true born
72	w073	Benjen	Stark	Stark	true born
73	w074	Lyanna	Stark	Stark	true born
74	w075	Robb	Stark	Stark	true born
75	w076	Sansa	Stark	Stark	true born
76	w077	Arya	Stark	Stark	true born
77	w078	Brandon	Stark	Stark	true born
78	w079	Rickon	Stark	Stark	true born
79	w080	Jon	Snow	Stark	base born
80	w081	Aegon V	Targaryen	Targaryen	true born
81	w082	Rhaelle	Targaryen	Targaryen	true born

	wid character(5)	firstname text	lastname text	housename text	birthstatus text
82	w083	Jaehaery	Targaryen	Targaryen	true born
83	w084	Aerys II	Targaryen	Targaryen	true born
84	w085	Rhaella	Targaryen	Targaryen	true born
85	w086	Rhaegar	Targaryen	Targaryen	true born
86	w087	Viserys	Targaryen	Targaryen	true born
87	w088	Daenerys	Targaryen	Targaryen	true born
88	w089	Rhaenys	Targaryen	Targaryen	true born
89	w090	Aegon	Targaryen	Targaryen	true born
90	w091	Hoster	Tully	Tully	true born
91	w092	Brynden	Tully	Tully	true born
92	w093	Catelyn	Tully	Tully	true born
93	w094	Edmure	Tully	Tully	true born
94	w095	Lysa	Tully	Tully	true born
95	w096	Luthor I	Tyrell	Tyrell	true born
96	w097	Garth	Tyrell	Tyrell	true born
97	w098	Moryn	Tyrell	Tyrell	true born
98	w099	Gormon	Tyrell	Tyrell	true born
99	w100	Mace	Tyrell	Tyrell	true born
100	w101	Janna	Tyrell	Tyrell	true born
101	w102	Mina	Tyrell	Tyrell	true born
102	w103	Garse	Flowers	Tyrell	base born
103	w104	Garrett	Flowers	Tyrell	base born
104	w105	Luthor I	Tyrell	Tyrell	true born
105	w106	Leo	Tyrell	Tyrell	true born
106	w107	Wilas	Tyrell	Tyrell	true born
107	w108	Garlan	Tyrell	Tyrell	true born
108	w109	Loras	Tyrell	Tyrell	true born
109	w110	Margaery	Tyrell	Tyrell	true born
110	w111	Theodore	Tyrell	Tyrell	true born
111	w112	Olene	Tyrell	Tyrell	true born
112	w113	Medwick	Tyrell	Tyrell	true born
113	w114	Elinor	Tyrell	Tyrell	true born
114	w115	Luthor	Tyrell	Tyrell	true born

- Arryns table
  - The Arryns table lists true born gentry who were born into house Arryn. This table also includes each individual's greatest title achieved in life.

```
CREATE TABLE arryns (
        wid         CHAR(5) NOT NULL REFERENCES gentry(wid),
        title       TEXT,
        PRIMARY KEY (wid)
);
```

  - Functional Dependencies: wid → title
  - Sample data:

	wid character(5)	title text
1	w001	Lord of the Eyrie
2	w002	Hand of the King
3	w003	Lady
4	w004	Keeper of the Gates of the Moon
5	w005	Lord of the Eyrie
6	w006	Ser
7	w007	Lord

- Baratheons table
  - The Baratheons table lists true born gentry who were born into house Baratheon. This table also includes each individual's greatest title achieved in life.

```
CREATE TABLE baratheons (
        wid         CHAR(5) NOT NULL REFERENCES gentry(wid),
        title       TEXT,
        PRIMARY KEY (wid)
);
```

  - Functional Dependencies: wid → title
  - Sample data:

	wid character(5)	title text
1	w008	Ser
2	w009	Lord of Storm's End
3	w010	King of Westeros
4	w011	King of the Seven Kingdoms of Westeros
5	w012	King of the Seven Kingdoms of Westeros
6	w013	King of the Seven Kingdoms of Westeros
7	w014	Princess
8	w015	King of the Seven Kingdoms of Westeros
9	w016	Princess

- Greyjoys table
  - The Greyjoys table lists true born gentry who were born into house Greyjoy. This table also includes each individual's greatest title achieved in life.

```
CREATE TABLE greyjoys (
        wid         CHAR(5) NOT NULL REFERENCES gentry(wid),
        title       TEXT,
        PRIMARY KEY (wid)
);
```

  - Functional Dependencies: wid → title
  - Sample data:

	wid character(5)	title text
1	w020	Lord of the Iron Islands
2	w021	King of the Iron Islands and the North
3	w022	King of the Iron Islands and the North
4	w023	Lord Captian of the Iron Fleet
5	w024	Lord
6	w025	Priest of the Drowned God
7	w026	Lord
8	w027	Lord
9	w028	Lord
10	w029	Lord
11	w030	Lord
12	w031	Captain of the Black Wind
13	w032	Lord of the Iron Islands
14	w033	Lord

- Lannisters table
  - The Lannisters table lists true born gentry who were born into house Lannister. This table also includes each individual's greatest title achieved in life.

```
CREATE TABLE lannisters (
        wid         CHAR(5) NOT NULL REFERENCES gentry(wid),
        title       TEXT,
        PRIMARY KEY (wid)
);
```

  - Functional Dependencies: wid → title
  - Sample data:

	wid character(5)	title text
1	w034	Lord of Casterly Rock
2	w035	Hand of the King
3	w036	Ser
4	w037	Ser
5	w038	Lord
6	w039	Lady
7	w040	Queen of the Seven Kingdoms of Westeros
8	w041	Lord Commander of the Kingsguard
9	w042	Acting Hand of the King
10	w043	Ser
11	w044	Squire
12	w045	Squire
13	w046	Lady

- Martells table
  - The Martells table lists true born gentry who were born into house Martell. This table also includes each individual's greatest title achieved in life.

```
CREATE TABLE martells (
        wid         CHAR(5) NOT NULL REFERENCES gentry(wid),
        title       TEXT,
        PRIMARY KEY (wid)
);
```

  - Functional Dependencies: wid → title
  - Sample data:

	wid character(5)	title text
1	w048	Prince of Dorne
2	w049	Prince of Dorne
3	w050	Prince of Dorne
4	w051	Prince of Dorne
5	w052	Princess
6	w053	Prince of Dorne
7	w054	Princess of Dorne
8	w055	Prince of Dorne
9	w056	Prince of Dorne

- Starks table
  - The Starks table lists true born gentry who were born into house Stark. This table also includes each individual's greatest title achieved in life.

```
CREATE TABLE starks (
        wid         CHAR(5) NOT NULL REFERENCES gentry(wid),
        title       TEXT,
        PRIMARY KEY (wid)
);
```

  - Functional Dependencies: wid → title
  - Sample data:

	wid character(5)	title text
1	w066	Lord of Winterfell
2	w067	Lord
3	w068	Lord of Winterfell
4	w069	Lord
5	w070	Lord of Winterfell
6	w071	Lord of Winterfell
7	w072	Hand of the King
8	w073	First Ranger
9	w074	Lady
10	w075	King in the North
11	w076	Princess of Winterfell
12	w077	Princess of Winterfell
13	w078	Prince of Winterfell
14	w079	Prince of Winterfell

- Targaryens table
  - The Targaryens table lists true born gentry who were born into house Targaryen. This table also includes each individual's greatest title achieved in life.

```
CREATE TABLE targaryens (
        wid         CHAR(5) NOT NULL REFERENCES gentry(wid),
        title       TEXT,
        PRIMARY KEY (wid)
);
```

  - Functional Dependencies: wid → title
  - Sample data:

	wid character(5)	title text
1	w081	King of the Seven Kingdoms of Westeros
2	w082	Princess
3	w083	King of the Seven Kingdoms of Westeros
4	w084	King of the Seven Kingdoms of Westeros
5	w085	Queen of the Seven Kingdoms of Westeros
6	w086	Prince of Dragonstone
7	w087	King of the Andals and the Rhoynar and the First Men, Lord of the Seven Kingdoms of Westeros
8	w088	Queen of the Andals and the First Men, Lord of the Seven Kingdoms of Westeros, Khaleesi of the Great Grass Sea, Queen of Meereen
9	w089	Princess
10	w090	Prince

- Tullys table
  - The Tullys table lists true born gentry who were born into house Tully. This table also includes each individual's greatest title achieved in life.

```
CREATE TABLE tullys (
        wid         CHAR(5) NOT NULL REFERENCES gentry(wid),
        title       TEXT,
        PRIMARY KEY (wid)
);
```

  - Functional Dependencies: wid → title
  - Sample data:

	wid character(5)	title text
1	w091	Lord of Riverrun
2	w092	Warden of the Southern Marches
3	w093	Lady of Winterfell
4	w094	Lord of Riverrun
5	w095	Lady of the Vale

- Tyrells table
  - The Tyrells table lists true born gentry who were born into house Tyrell. This table also includes each individual's greatest title achieved in life.

```
CREATE TABLE tyrells (
        wid         CHAR(5) NOT NULL REFERENCES gentry(wid),
        title       TEXT,
        PRIMARY KEY (wid)
);
```

  - Functional Dependencies: wid → title
  - Sample data:

	wid character(5)	title text
1	w096	Lord of Highgarden
2	w097	Lord Seneschal
3	w098	Lord Commander of the City Wat
4	w099	Maester
5	w100	Hand of the King
6	w101	Lady
7	w102	Lady
8	w105	Ser
9	w106	Lord
10	w107	Lord
11	w108	Lord of Bridgewater Keep
12	w109	Ser
13	w110	Queen of the Seven Kingdoms of
14	w111	Ser
15	w112	Lady
16	w113	Maester
17	w114	Lady
18	w115	Squire

- Bastards table
  - The Bastards table lists base born gentry who were born into any great house of the Seven Kingdoms.

```
CREATE TABLE bastards (
        wid         CHAR(5) NOT NULL REFERENCES gentry(wid),
        PRIMARY KEY (wid)
);
```

  - Functional Dependencies: wid →
  - Sample data:

	wid character(5)
1	w017
2	w018
3	w019
4	w047
5	w058
6	w059
7	w060
8	w061
9	w062
10	w063
11	w064
12	w065
13	w080
14	w103
15	w104

- Orders table
  - The Orders table lists the three main orders an individual can join within the Seven Kingdoms.

```
CREATE TABLE orders (
        oid             CHAR(5) NOT NULL,
        orderJoined     TEXT,
        PRIMARY KEY (oid)
);
```

  - Functional Dependencies: oid →orderJoined
  - Sample data:

	oid character(5)	orderjoined text
1	o01	Kingsguard
2	o02	Nightswatch
3	o03	Order of Maesters

- Roster table
  - The Roster table lists the ids of any gentry who have joined an order along with the ids of that order. This table connects all the tables of the families with the Orders table.

```
CREATE TABLE roster (
        wid     CHAR(5) NOT NULL REFERENCES gentry(wid),
        oid     CHAR(5) NOT NULL REFERENCES orders(oid),
        PRIMARY KEY (wid, oid)
);
```

  - Functional Dependencies: wid, oid →
  - Sample data:

	wid character(5)	oid character(5)
1	w041	o01
2	w048	o01
3	w109	o01
4	w073	o02
5	w080	o02
6	w099	o03
7	w113	o03

Views

- GentryOrders view
  - This view displays anyone in any house who has joined an order. This can be used to keep track of who has joined what orders.

```
CREATE VIEW GentryOrders AS
        SELECT g.firstName AS "First Name",
                g.lastName AS "Surname",
                g.houseName AS "House Name",
                o.orderJoined AS "Affiliated Order"
        FROM gentry g,
                orders o,
                roster r
        WHERE r.oid = o.oid
            AND r.wid = g.wid
ORDER BY g.houseName ASC
```

  - Sample data:

	First Name text	Surname text	House Name text	Affiliated Order text
1	Jaime	Lanniste	Lannister	Kingsguard
2	Lewyn	Martell	Martell	Kingsguard
3	Benjen	Stark	Stark	Nightswatch
4	Jon	Snow	Stark	Nightswatch
5	Medwick	Tyrell	Tyrell	Order of Maes
6	Gormon	Tyrell	Tyrell	Order of Maes
7	Loras	Tyrell	Tyrell	Kingsguard

- HousesInOrders view
  - This view displays where individuals who have joined orders are originally from, as well as what order they have joined. This may be used to determine if location affects a person's choice of order.

```
CREATE VIEW HousesInOrders AS
        SELECT h.rulingRegion AS "Home Region",
                o.orderJoined AS "Affiliated Order"
        FROM houses h,
                gentry g,
                roster r,
                orders o
        WHERE r.oid = o.oid
            AND r.wid = g.wid
            AND h.houseName = g.houseName
ORDER BY h.rulingRegion ASC
```

  - Sample data:

	Home Region text	Affiliated Order text
1	Dorne	Kingsguard
2	the North	Nightswatch
3	the North	Nightswatch
4	the Reach	Order of Maesters
5	the Reach	Order of Maesters
6	the Reach	Kingsguard
7	the Westerlands	Kingsguard

Reports and Their Queries

- The name and birth status of gentry in the Kingsguard

```
SELECT g.firstName,
       g.lastName,
       g.birthStatus
  FROM gentry g,
       roster r,
       orders o
  WHERE r.oid = o.oid
    AND r.wid = g.wid
    AND o.orderJoined = 'Kingsguard'
ORDER BY g.lastName ASC
```

  - Sample data:

	firstname text	lastname text	birthstatus text
1	Jaime	Lannister	true born
2	Lewyn	Martell	true born
3	Loras	Tyrell	true born

- The house names and house words of any bastards

```
SELECT DISTINCT h.houseName,
                h.houseWords
    FROM houses h,
         gentry g
    WHERE g.houseName = h.houseName
      AND g.birthStatus = ‘base born’
ORDER BY h.houseName ASC
```

  - Sample data:

	housename text	housewords text
1	Baratheon	Ours is the Fury
2	Lannister	Hear Me Roar
3	Martell	Unbowed, Unbent, Unbroken
4	Stark	Winter is Coming
5	Tyrell	Growing Strong

- The house names and banner descriptions of those who are in an order

```
SELECT DISTINCT g.houseName,
                h.houseSigil,
                h.sigilColor,
                h.bannerFieldColor
    FROM gentry g,
         houses h,
         orders o,
         roster r
    WHERE h.houseName = g.houseName
        AND r.oid = o.oid
        AND r.wid = g.wid
ORDER BY g.houseName ASC
```

  - Sample data:

	housename text	housesigil text	sigilcolor text	bannerfieldcolor text
1	Lannister	lion	gold	red
2	Martell	sun pierced by a spear	red and gold	orange
3	Stark	direwolf	grey	white
4	Tyrell	rose	gold	green

- Starks who have been the Hand of the King

```
SELECT g.firstName,
       g.lastName
  FROM gentry g,
       starks s
  WHERE g.wid = s.wid
      AND s.title = 'Hand of the King'
ORDER BY g.lastName ASC
```

  - Sample data:

	firstname text	lastname text
1	Eddard	Stark

- Martells who were not born with the surname “Martell”

```
SELECT DISTINCT g.firstName,
                g.lastName
    FROM gentry g,
         martells m,
    WHERE g.houseName = ‘Martell’
       AND g.lastName != ‘Martell’
ORDER BY g.firstName ASC
```

  - Sample data:

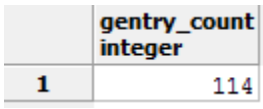
	firstname text	lastname text
1	Dorea	Sand
2	Elia	Sand
3	Loreza	Sand
4	Nymeria	Sand
5	Obara	Sand
6	Obella	Sand
7	Sarella	Sand
8	Tyene	Sand

Stored Procedures

- Count the total number of gentry

```
CREATE OR REPLACE FUNCTION gentry_count() RETURNS INT AS $$
DECLARE
        gentrycount INT;
BEGIN
        SELECT COUNT(*) INTO gentrycount FROM gentry;
        RETURN gentrycount;
END;
$$
LANGUAGE plpgsql;
SELECT gentry_count();
```

  - Sample output:



	gentry_count integer
1	114

Triggers

- Trigger that will insert the text “Unknown” under the firstName column of the Gentry table if the individual’s first name is not known

```
CREATE FUNCTION unknown_first_name() RETURNS trigger AS $$
BEGIN
        IF NEW.firstName IS NULL OR NEW.firstName = ''
            THEN NEW.firstName := 'Unknown';
         END IF;
         RETURN NEW;
END;
$$
LANGUAGE plpgsql;

CREATE TRIGGER my_trigger
BEFORE INSERT ON gentry
FOR EACH ROW
EXECUTE PROCEDURE unknown_first_name()
```

  - Sample output:

113	w114	Elinor	Tyrell	Tyrell	true born
114	w115	Luthor	Tyrell	Tyrell	true born
115	w116	Unknown	Tyrell	Tyrell	true born

Security

- Admins would be able to update and maintain every table on the entire database

```
CREATE ROLE admin
GRANT SELECT, INSERT, UPDATE
ON ALL TABLES IN SCHEMA public
TO admin
```

- Any other user would only be able to see the database

```
CREATE ROLE user
GRANT SELECT
ON ALL TABLES IN SCHEMA public
TO user
```

Implementation Notes and Known Problems

Implementation went fairly well. The code to create the database was executed with little to no problems. There were some issues, however, regarding the layout of the tables. If done over again, each individual house would probably not have been separated into different tables. This caused an issue with writing queries to gain individuals of a specific title. The queries would become extremely long and result with multiple errors; therefore no reports were made concerning the titles of individuals. Another issue was not labeling the ids as integers. By labeling them as text it became more difficult to count the number of entries in each table. It would have been easier to simply use numbers so an automatic implementation could be instituted.

Future Enhancements

If allowed more time, the issues stated in the above section would have been resolved. The table issue would be fixed by reducing the amount of tables separating the gentry. All of the ids within the database would also be of an integer value and would have an auto implementation function. Also, if allotted more time the database could encompass even more information regarding each house and individual. For example, it would be interesting to include the marital status of characters, as well as the individual he or she is married to. This would in turn create another layer of connecting tables and, if executed correctly, could improve the database greatly.