

Description of Queries

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1 Data Retrieval Queries

1. How many amendments were introduced before 2008 in each branch?

```
select type, count(type) from Amendment where
introduced_at < '2008' group by type;
```

2. Which legislators were born before the outset of WWI?

```
select distinct bioguide_id, 'First Name' , 'Last Name', party
from
Legislator natural join Term where birthday < '1914-07-28';
```

3. Find all Legislators that shared a birthday

```
select L1.birthday, L1.bioguide_id, L1.'First Name', L1.'Last Name',
      L2.bioguide_id, L2.'First Name', L2.'Last Name'
from Legislator L1, Legislator L2
where L1.birthday = L2.birthday and L1.bioguide_id != L2.bioguide_id;
```

4. Find all votes that have passed

```
select * from Vote where result = 'PASSED';
```

5. How many legislators have there been for each party (using only a legislators most recent term to decide their party)

```
select party, count(party) as count
from Term join (select bioguide_id, max(start) as ms
from Term GROUP BY bioguide_id) as latest
ON Term.start = latest.ms and Term.bioguide_id = latest.bioguide_id
GROUP BY party ORDER BY count DESC;
```

6. For a Bill find all congress members and how they voted on the latest vote for that bill

```
select 'bioguide_id', 'First Name', 'Last Name', how_voted
from (select * from Legislator natural join Legislator_Vote) as LV
join Vote ON Vote.id = LV.Vote_id
where Vote_id = (select id from Vote where Bill_id = 'hr899-113'
and number = (select max(number) from Vote where Bill_id = 'hr899-113'));
```

7. Find all bills sponsored by a legislator from NM and the name of the legislator that sponsored it.

```
select 'Last Name', Bill_id
from ((select bioguide_id from Term where state = 'NM') as t1
natural join Legislator) natural join Sponsor;
```

8. Union the shared fields from amendment and bill, represents all pieces of legislation in the database:

```
select *
from (select id, type, status, introduced_at as introduction_date,
congress, number
from Amendment) as t1
union
(select id, type, status, introduction_date,
congress, number from Bill) limit 10;
```

9. For a given vote count the number of yes votes for each party

```

select party, count(party) as count
from (select distinct bioguide_id, party
      from Legislator_Vote natural join Term
      where Vote_id = 'h136-115.2017' and how_voted='Yea') as yes
GROUP BY party;

```

10. List the members of congress for congress 115 and order by state

```

select distinct 'First Name', 'Last Name', state
from Legislator natural join Term
where start >= (select begin from Congress where id = 115)
and end <= (select end from Congress where id = 115) ORDER BY state

```

11. Find all subjects for Congress 114 (would be useful for navigation in the web interface)

```

select distinct subject from Subject join Bill ON Subject.Bill_id = Bill.id
where congress = 114;

```

12. Count the number of terms a member of congress has served (only if we have a record of them voting in our data)

```

select bioguide_id, 'First Name', 'Last Name', Terms
from (select bioguide_id, count(bioguide_id) as Terms
      from Term GROUP BY bioguide_id) as tm natural join Legislator
where bioguide_id in (select bioguide_id from Legislator_Vote)
ORDER BY Terms DESC;

```

13. Find all Legislators that share a last name

```

select L1.bioguide_id, L1.'First Name', L1.'Last Name',
      L2.bioguide_id, L2.'First Name', L2.'Last Name'
from Legislator L1, Legislator L2
where L1.'Last Name' = L2.'Last Name'
and L1.bioguide_id != L2.bioguide_id;

```

14. Find all the ways that have been voted

```

select distinct how_voted from Legislator_Vote;

```

2 Modification Queries

1. If a Legislator does not have a full name update it with their wikipedia id (which is a full name) only if their wikipedia id is not null as well

```
update Legislator
set official_full_name=wikipedia_id
where official_full_name IS NULL and wikipedia_id IS NOT NULL;
```

2. Change a legislators end date for a specific Term (like if they have been removed from office, in our case Tom Marino is likely to be appointed to another position soon)

```
update Term
set end = '2017-05-01'
where bioguide_id = (select bioguide_id from Legislator
                     where 'First Name' = 'Tom' and 'Last Name' = 'Marino')
and end > '2017-05-01';
```

3. Delete all Legislators , Sponsor, and Terms for those legislator if they never participated in a vote in our data

```
delete from Term
where bioguide_id
      not in (select bioguide_id from Legislator_Vote);
```

```
delete from Sponsor
where Legislator_id
      not in (select bioguide_id from Legislator_Vote);
```

```
delete from Legislator
where bioguide_id
      not in (select bioguide_id from Legislator_Vote);
```

4. Delete all votes that we do not have a record of Legislators voting on it

```
delete from Vote
where id
      not in (select Vote_id as id from Legislator_Vote);
```

1. Add a new Legislator (a special election has occurred and Ron Estes needs to be added).

```
insert into Legislator (bioguide_id, 'Last Name', 'First Name',  
                        birthday, gender, 'wikipedia_id',  
                        govtrack_id, official_full_name)  
Value  
( 'E000298', 'Estes', 'Ron', '1956-07-19', 'M', NULL, 412735, NULL);
```

2. Add a new term for that legislator (each legislator should have a corresponding Term)

```
insert into Term  
VALUE ( 'E000298', '2017-04-27', '2019-01-03',  
        'rep', 'KS', NULL, 4, 'Republican', 'h');
```

3 Useful Indexes

1. The query where we find all legislators that share a birthday was quite slow. We increased the speed of this dramatically by creating an index on their birthday.

```
create index bday on Legislator (birthday);
```

2. When finding all pairs of legislators with the same last name speed was improved by adding an index on 'Last Name' column

```
create index lastName on Legislator ('Last Name');
```

3. When counting unique ways in which legislators have voted the query speed was increased by adding an index on the corresponding column:

```
create index voteindex on Legislator_Vote(how_voted);
```

4 Modifying data from the last project

- For Legislator: First Name, Last name were the same due to a script typo.
- For Term: Party is Unknown for all members.

- For bill and amendments there are 'None' values instead of NULL.

All of this was fixed in our github repo and in our database: https://github.com/hhweeks/congress_db/

Term and Legislator were updated by correcting the script, Bill and Amendments were corrected by performing a sed replace on 'None' to NULL in the correct sql import files.