

## Metadata

- Database created by: V. M R
- Database Name: electoral\_bonddata
- Author of Queries : V. M R
- Organization : Careerpedia
- Description: This is a database which has electoral bonds data provided by Govenement of INDIA after Supreme Court Ruling.

## Tables and Data Description

The data was provided as 2 Tables and extra data recarding the bank branches has been extracted from GOVT website and the overall data is distributed in 4 tables. So that the whole data is in 3rd Normalization Form.

### Tables in the database:

| Tables_in_electoral_bonddata |
|------------------------------|
| bankdata                     |
| bonddata                     |
| donordata                    |
| reciverdata                  |

### bonddata :

| Field         | Type         | Null | Key | Default | Extra |
|---------------|--------------|------|-----|---------|-------|
| Unique_key    | varchar(255) | NO   | PRI | NULL    |       |
| Denominations | int          | YES  |     | NULL    |       |

| Unique_key | Denominations |
|------------|---------------|
|            |               |
|            |               |
|            |               |

### bankdata :

| Field        | Type         | Null | Key | Default | Extra |
|--------------|--------------|------|-----|---------|-------|
| branchCodeNo | int          | NO   | PRI | NULL    |       |
| STATE        | varchar(50)  | YES  |     | NULL    |       |
| Address      | varchar(255) | YES  |     | NULL    |       |
| CITY         | varchar(30)  | YES  |     | NULL    |       |

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| branchCodeNo | STATE | Address | CITY |
|--------------|-------|---------|------|
|              |       |         |      |
|              |       |         |      |
|              |       |         |      |

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## donordata:

| Field         | Type         | Null | Key | Default | Extra |
|---------------|--------------|------|-----|---------|-------|
| Urn           | varchar(30)  | YES  |     | NULL    |       |
| JournalDate   | date         | YES  |     | NULL    |       |
| PurchaseDate  | date         | YES  |     | NULL    |       |
| ExpiryDate    | date         | YES  |     | NULL    |       |
| Purchaser     | varchar(255) | YES  |     | NULL    |       |
| PayBranchCode | int          | YES  | MUL | NULL    |       |
| PayTeller     | int          | YES  |     | NULL    |       |
| Unique_key    | varchar(8)   | NO   | PRI | NULL    |       |

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| Urn | JournalDate | PurchaseDate | ExpiryDate | Purchaser | PayBranchCode | PayTeller | Uniq |
|-----|-------------|--------------|------------|-----------|---------------|-----------|------|
|     |             |              |            |           |               |           |      |
|     |             |              |            |           |               |           |      |

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## reciverdata:

| Field          | Type         | Null | Key | Default | Extra |
|----------------|--------------|------|-----|---------|-------|
| DateEncashment | date         | YES  |     | NULL    |       |
| PartyName      | varchar(255) | YES  |     | NULL    |       |
| AccountNum     | varchar(50)  | YES  |     | NULL    |       |
| PayBranchCode  | int          | YES  | MUL | NULL    |       |
| PayTeller      | int          | YES  |     | NULL    |       |

| Field      | Type       | Null | Key | Default | Extra |
|------------|------------|------|-----|---------|-------|
| Unique_key | varchar(8) | NO   | PRI | NULL    |       |

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| DateEncashment | PartyName | AccountNum | PayBranchCode | PayTeller | Unique_key |
|----------------|-----------|------------|---------------|-----------|------------|
|                |           |            |               |           |            |
|                |           |            |               |           |            |
|                |           |            |               |           |            |

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## Questions on electoral bonds data base:

1. Find out how much donors spent on bonds
2. Find out total fund politicians got
3. Find out the total amount of unaccounted money received by parties
4. Find year-wise how much money is spent on bonds
5. In which month was the most amount spent on bonds
6. Find out which company bought the highest number of bonds.
7. Find out which company spent the most on electoral bonds.
8. List companies which paid the least to political parties.
9. Which political party received the highest cash?
10. Which political party received the highest number of electoral bonds?
11. Which political party received the least cash?
12. Which political party received the least number of electoral bonds?
13. Find the 2nd highest donor in terms of the amount he paid?
14. Find the party which received the second-highest donations?
15. Find the party which received the second-highest number of bonds?
16. In which city were the most number of bonds purchased?
17. In which city was the highest amount spent on electoral bonds?
18. In which city were the least number of bonds purchased?
19. In which city were the most number of bonds enchased?
20. In which city were the least number of bonds enchased?
21. List the branches where no electoral bonds were bought; if none, mention it as null.
22. Break down how much money is spent on electoral bonds for each year.
23. Break down how much money is spent on electoral bonds for each year and provide the year and the amount. Provide values for the highest and least year and amount.
24. Find out how many donors bought the bonds but did not donate to any political party?
25. Find out the money that could have gone to the PM Office, assuming the above question assumption (Domain Knowledge)
26. Find out how many bonds don't have donors associated with them.

27. PayTeller is the employee ID who either created the bond or redeemed it. So find the employee ID who issued the highest number of bonds.
  28. Find the employee ID who issued the least number of bonds.
  29. Find the employee ID who assisted in redeeming or enashing bonds the most.
  30. Find the employee ID who assisted in redeeming or enashing bonds the least
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## Queries for the Questions asked

- 1. Find out how much donors spent on bonds

```
SQL
1  SELECT SUM(Denominations) as 'Total Amount bought'
2  FROM donordata d
3  JOIN bonddata b on d.Unique_key = b.Unique_key;
```

- 2. Find out total fund politicians got

```
SELECT SUM(Denominations) as 'Total Recived Amount'
FROM reciverdata r
JOIN bonddata b on r.Unique_key = b.Unique_key
```

- 3. Find out the total amount of unaccounted money recived by parties (Money without donors)

```
SELECT SUM(Denominations) as 'Unaccounted Amount'
FROM donordata d
RIGHT JOIN reciverdata r ON r.Unique_key = d.Unique_key
JOIN bonddata b ON r.Unique_key = b.Unique_key
WHERE purchaser IS NULL;
```

- 4. Find year wise how much money is spent on bonds

```
SELECT YEAR(d.PurchaseDate) AS `year`, SUM(denominations) AS
'year wise bond spending'
FROM donordata d
JOIN bonddata b ON b.unique_key = d.unique_key
GROUP BY `year`
ORDER BY `year wise bond spending` DESC;
```

- 5. In which month most amount is spent on bonds

## Output in month number

```
WITH city_bond_spending_cte AS (  
    SELECT MONTH(d.PurchaseDate) AS `Month`,  
    SUM(b.denominations) AS 'city_bond_spending'  
    FROM donordata d  
    JOIN bonddata b ON b.unique_key = d.unique_key  
    GROUP BY `Month`  
)  
SELECT *  
FROM city_bond_spending_cte  
WHERE city_bond_spending = (  
    SELECT MAX(city_bond_spending)  
    FROM city_bond_spending_cte  
);
```

## Output in month name

```
WITH city_bond_spending_cte AS (  
    SELECT MONTHNAME(d.PurchaseDate) AS `Month`,  
    SUM(b.denominations) AS 'city_bond_spending'  
    FROM donordata d  
    JOIN bonddata b ON b.unique_key = d.unique_key  
    GROUP BY `Month`  
)  
SELECT *  
FROM city_bond_spending_cte  
WHERE city_bond_spending = (  
    SELECT MAX(city_bond_spending)  
    FROM city_bond_spending_cte  
);
```

- 6. Find out which company bought the highest number of bonds.

```
WITH SpendingCounts AS (  
    SELECT purchaser, COUNT(d.unique_key) AS company_bondcount  
    FROM donordata d  
    JOIN bonddata b ON d.Unique_key = b.Unique_key  
    GROUP BY purchaser  
)  
SELECT purchaser, company_bondcount as 'Max bond bought'  
FROM SpendingCounts
```

```
WHERE company_bondcount = (
    SELECT MAX(company_bondcount)
    FROM SpendingCounts
);
```

- 7. Find out which company spent the most on electoral bonds.

```
WITH SpendingCounts AS (
    SELECT purchaser, SUM(Denominations) as spending_count
    FROM donordata d
    JOIN bonddata b ON d.Unique_key = b.Unique_key
    GROUP BY purchaser
)
SELECT purchaser, spending_count as 'Company Spending'
FROM SpendingCounts
WHERE spending_count = (
    SELECT MAX(spending_count)
    FROM SpendingCounts
);
```

- 8. List companies which paid the least to political parties.

```
WITH SpendingCounts AS (
    SELECT purchaser, SUM(Denominations) as spending_count
    FROM donordata d
    JOIN bonddata b ON d.Unique_key = b.Unique_key
    GROUP BY purchaser
)
SELECT purchaser, spending_count as 'Company Spending'
FROM SpendingCounts
WHERE spending_count = (
    SELECT MIN(spending_count)
    FROM SpendingCounts
);
```

- 9. Which political party received the highest cash?

```
WITH SpendingCounts AS (
    SELECT partyname, SUM(Denominations) as Encashment
    FROM reciverdata r
    JOIN bonddata b ON r.Unique_key = b.Unique_key
```

```

        GROUP BY partyname
    )
    SELECT partyname, Encashment as 'Fund Received'
    FROM SpendingCounts
    WHERE Encashment = (
        SELECT MAX(Encashment)
        FROM SpendingCounts
    );

```

- 10. Which political party received the highest number of electoral bonds?

```

WITH SpendingCounts AS (
    SELECT partyname, COUNT(Denominations) as Encashment_count
    FROM reciverdata r
    JOIN bonddata b ON r.Unique_key = b.Unique_key
    GROUP BY partyname
)
SELECT partyname, Encashment_count as 'Company Spending'
FROM SpendingCounts
WHERE Encashment_count = (
    SELECT MAX(Encashment_count)
    FROM SpendingCounts
);

```

- 11. Which political party received the least cash?

```

WITH SpendingCounts AS (
    SELECT partyname, SUM(Denominations) as Encashment
    FROM reciverdata r
    JOIN bonddata b ON r.Unique_key = b.Unique_key
    GROUP BY partyname
)
SELECT partyname, Encashment as 'Fund Received'
FROM SpendingCounts
WHERE Encashment = (
    SELECT MIN(Encashment)
    FROM SpendingCounts
);

```

- 12. Which political party received the least number of electoral bonds?

```

WITH SpendingCounts AS (
    SELECT partyname, COUNT(Denominations) as Encashment_count
    FROM reciverdata r
    JOIN bonddata b ON r.Unique_key = b.Unique_key
    GROUP BY partyname
)
SELECT partyname, Encashment_count as 'Company Spending'
FROM SpendingCounts
WHERE Encashment_count = (
    SELECT MIN(Encashment_count)
    FROM SpendingCounts
);

```

- 13. Find the 2nd highest donor in terms of amount he paid?

```

SELECT purchaser, SUM(Denominations) as 'purchaser total
donation'
FROM donordata d
JOIN bonddata b ON d.Unique_key = b.Unique_key
GROUP BY purchaser
HAVING `purchaser total donation` = (
    SELECT
DISTINCT(SUM(Denominations)) as 'purchaser total donation'
FROM donordata d
JOIN bonddata b ON
d.Unique_key = b.Unique_key
GROUP BY purchaser
ORDER BY `purchaser
total donation` DESC
LIMIT 1
OFFSET 1) ;

```

- 14. Find the party which recived the second highest donations?

```

SELECT PartyName, SUM(Denominations) as 'party received'
FROM reciverdata r
JOIN bonddata b ON r.Unique_key = b.Unique_key
GROUP BY PartyName
HAVING `party received` = (
    SELECT DISTINCT(SUM(Denominations))
as 'party received'

```



```

FROM reciverdata r
JOIN bonddata b ON r.Unique_key =
b.Unique_key

GROUP BY PartyName
ORDER BY `party received` DESC
LIMIT 1
OFFSET 1) ;

```

- 15. Find the party which recived the second highest number of bonds?

```

SELECT PartyName, COUNT(r.Unique_key) as 'party received'
FROM reciverdata r
JOIN bonddata b ON r.Unique_key = b.Unique_key
GROUP BY PartyName
HAVING `party received` = (
    SELECT DISTINCT(COUNT(r.Unique_key))
    FROM reciverdata r
    JOIN bonddata b ON r.Unique_key =
b.Unique_key

    GROUP BY PartyName
    ORDER BY `party received` DESC
    LIMIT 1
    OFFSET 1);

```

- 16. In which city were the most number of bonds purchased?

```

WITH city_bond_count as (
    SELECT b.city,
COUNT(c.denominations) as 'city bond spending'
    FROM donordata d
    JOIN bankdata b ON d.paybranchcode =
b.branchcodeNo

    JOIN bonddata c ON c.unique_key =
d.unique_key

    GROUP BY b.city
    ORDER BY `city bond spending` DESC)

SELECT *
FROM city_bond_count
WHERE `city bond spending` = (
    SELECT MAX(`city bond spending`)
    FROM city_bond_count);

```

- 17. In which city was the highest amount spent on electoral bonds?

```

WITH city_bond_amt as (
    SELECT b.city, SUM(c.denominations) as
    'city bond spending'
    FROM donordata d
    JOIN bankdata b ON d.paybranchcode =
    b.branchcodeNo
    JOIN bonddata c ON c.unique_key =
    d.unique_key
    GROUP BY b.city
    ORDER BY `city bond spending` DESC)
SELECT *
FROM city_bond_amt
WHERE `city bond spending` = (
    SELECT MAX(`city bond spending`)
    FROM city_bond_amt);

```

- 18. In which city were the least number of bonds purchased?

```

WITH city_bond_count as (
    SELECT b.city,
    COUNT(c.denominations) as 'city bond spending'
    FROM donordata d
    JOIN bankdata b ON d.paybranchcode =
    b.branchcodeNo
    JOIN bonddata c ON c.unique_key =
    d.unique_key
    GROUP BY b.city
    ORDER BY `city bond spending` DESC)
SELECT *
FROM city_bond_count
WHERE `city bond spending` = (
    SELECT MIN(`city bond spending`)
    FROM city_bond_count);

```

- 19. In which city were the most number of bonds encashed?

```

WITH city_bond_amt as (
    SELECT b.city, COUNT(r.unique_key) as
    'city bond encashment'
    FROM reciverdata r
    JOIN bankdata b ON r.paybranchcode =
    b.branchcodeNo
    JOIN bonddata c ON c.unique_key =
    r.unique_key
    GROUP BY b.city
    ORDER BY `city bond encashment` DESC)

```

```

SELECT *
FROM city_bond_amt
WHERE `city bond encashment` = ( SELECT MAX(`city bond
                                encashment`)
                                FROM city_bond_amt);

```

- 20. In which city least amount is encashed in bond forms?

```

WITH city_bond_amt as ( SELECT b.city, SUM(c.denominations) as
'city bond encashment'
                        FROM reciverdata r
                        JOIN bankdata b ON r.paybranchcode =
b.branchcodeNo
                        JOIN bonddata c ON c.unique_key =
r.unique_key
                        GROUP BY b.city
                        ORDER BY `city bond encashment` DESC)
SELECT *
FROM city_bond_amt
WHERE `city bond encashment` = ( SELECT MIN(`city bond
                                encashment`)
                                FROM city_bond_amt);

```

- 21. Break down how much money is spent on electoral bonds for each year. -- Same question as that of Question 4

```

SELECT YEAR(d.PurchaseDate) AS `year` ,SUM(denominations) AS
'year wise bond spending'
FROM donordata d
JOIN bonddata b ON b.unique_key = d.unique_key
GROUP BY `year`
ORDER BY `year wise bond spending` DESC;

```

- 22. Find out in which year most amount is spent on electoral bonds by donors and how much?

```

WITH year_bond_spending AS (
    SELECT YEAR(d.PurchaseDate) AS year, SUM(c.denominations) AS
year_bond_spending
    FROM donordata d
    JOIN bonddata c ON c.unique_key = d.unique_key
    GROUP BY YEAR(d.PurchaseDate)

```

```

)
SELECT *
FROM year_bond_spending
WHERE `year_bond_spending` = (SELECT MAX(`year_bond_spending`)
                                FROM
                                year_bond_spending);

```

- 23. Find out in which year least amount is spent on electoral bonds by donors and how much?

```

WITH year_bond_spending AS (
    SELECT YEAR(d.PurchaseDate) AS year, SUM(c.denominations) AS
year_bond_spending
    FROM donordata d
    JOIN bonddata c ON c.unique_key = d.unique_key
    GROUP BY YEAR(d.PurchaseDate)
)
SELECT *
FROM year_bond_spending
WHERE `year_bond_spending` = (SELECT MIN(`year_bond_spending`)
                                FROM
                                year_bond_spending);

```

- 24. Find out how many donors bought the bonds but not donated to any political party?

```

SELECT COUNT(*)
FROM donordata d
LEFT JOIN reciverdata r ON r.Unique_key = d.Unique_key
WHERE r.partyname is NULL;

```

- 25. Find out the money that could have went to PM Office assuming the above question assumption(Domain Knowledge)

#### Note

If a particular bond is not encashed in 15 days it will be lapsed and here we are assuming that if there is a bond purchase in donors table and no details about it in receivers table we are going with an assumption that the bond got lapsed. The amount associated with such kind of bonds will be transferred to PM Office Fund

```

SELECT SUM(denominations)
FROM donordata d

```

```
LEFT JOIN reciverdata r ON r.Unique_key = d.Unique_key
JOIN bonddata b ON b.Unique_key = d.Unique_key
WHERE partyname is NULL;
```

- 26. Find out how many bonds don't have donars associated with it.

```
SELECT COUNT(*)
FROM donordata d
RIGHT JOIN reciverdata r ON r.Unique_key = d.Unique_key
WHERE purchaser is NULL;
```

**PayTeller** is the employee ID who either created the bond or redeemed it.

- 27. Find the employee ID who issued the highest number of bonds.
- 28. Find the employee ID who issued the least number of bonds.
- 29. Find the employee ID who assisted in redeeming or encashing bonds the most.
- 30. Find the employee ID who assisted in redeeming or enchasing bonds the least

#### Check this out

In questions 27 - 30 of our documentation, we have introduced additional inquiries requiring the utilization of database views. Specifically, for the added four questions, we have initiated the process by creating a view. Similarly, for another set of four questions, a view is being utilized. It is important to note that data redundancy is not a concern in this context, as the data contained within the views consists of only 30 records with three attributes.

For the Below Question I have Used Views

```
CREATE VIEW donor_employee_performance AS (
SELECT Payteller, COUNT(b.unique_key) AS 'employee_bond_count',
SUM(denominations) AS 'employee_bond_amount'
FROM donordata d
JOIN bonddata b ON d.unique_key = b.unique_key
GROUP BY Payteller
ORDER BY `employee_bond_count`, `employee_bond_amount`);
```

```
SELECT *
FROM donor_employee_performance;
```

- 1. Find the employee ID who issued the highest number of bonds (27th Question)

```
SELECT Payteller
FROM donor_employee_performance
WHERE `employee_bond_count` = (SELECT MAX(`employee_bond_count`)
                               FROM
donor_employee_performance);
```

- 2. Find the employee ID who issued the bonds for highest amount

```
SELECT Payteller
FROM donor_employee_performance
WHERE `employee_bond_amount` = (SELECT
MAX(`employee_bond_amount`)
                               FROM
donor_employee_performance);
```

- 3. Find the employee ID who issued the least number of bonds (28th Question)

```
SELECT Payteller
FROM donor_employee_performance
WHERE `employee_bond_count` = (SELECT MIN(`employee_bond_count`)
-- important to explain.
                               FROM
donor_employee_performance);
```

- 4. Find the employee ID who issued the bonds for least amount

```
SELECT Payteller
FROM donor_employee_performance
WHERE `employee_bond_amount` = (SELECT
MIN(`employee_bond_amount`)
                               FROM
donor_employee_performance);
```

```
CREATE VIEW receiver_employee_performance AS (
SELECT Payteller, COUNT(r.unique_key) AS 'employee_bond_count',
SUM(denominations) AS 'employee_bond_amount'
FROM reciverdata r
JOIN bonddata b ON r.unique_key = b.unique_key
```

```
GROUP BY Payteller);

SELECT *
FROM receiver_employee_performance;
```

- 5. Find the employee ID who assisted in redeeming or encashing a bonds in highest number (29th Question)

```
SELECT Payteller
FROM receiver_employee_performance
WHERE `employee_bond_count` = (SELECT MAX(`employee_bond_count`)
                                FROM
receiver_employee_performance);
```

- 6. Find the employee ID who assisted in redeeming or encashing bonds for highest amount

```
SELECT Payteller
FROM receiver_employee_performance
WHERE `employee_bond_amount` = (SELECT
MAX(`employee_bond_amount`)
                                FROM
receiver_employee_performance);
```

- 7. Find the employee ID who assisted in redeeming or encashing a bonds in least number (30th Question)
- 

```
SELECT Payteller
FROM receiver_employee_performance
WHERE `employee_bond_count` = (SELECT MIN(`employee_bond_count`)
                                FROM
receiver_employee_performance);
```

- 8. Find the employee ID who assisted in redeeming or encashing bonds for least amount

```
SELECT Payteller
FROM receiver_employee_performance
WHERE `employee_bond_amount` = (SELECT
MIN(`employee_bond_amount`)
```

FROM

receiver\_employee\_performance);

---