Electoral bonds detailed project report

Project Description:

        The Supreme Court of India has invalidated the Electoral Bond scheme, highlighting that anonymity in political donations undermines voters' right to information. This decision mandates transparency in political party funding, aligning with democratic values. Following this ruling, the Election Commission of India (ECI) released detailed data on March 21, 2024, provided by the State Bank of India (SBI), covering donors and recipients of electoral bonds from April 12, 2019, to January 11, 2024. The dataset includes bond numbers, enabling identification of funding sources and recipients. Additional information from the Enforcement Directorate will further enrich this dataset. The ECI published two lists of donors and recipients on its website to comply with the Supreme Court's directive, enhancing transparency and accountability in political financing.

Data Sources:

These are the official Sites where the data is released by the government.

https://www.eci.gov.in/disclosure-of-electoral-bonds

https://enforcementdirectorate.gov.in/press-release (Data available only since 2021)

https://cag.gov.in/en/audit-report (Data extracted from 2018)

https://incometaxindia.gov.in/Pages/press-releases.aspx (Data extracted from 2010)

https://cbi.gov.in/press-releases (Data extracted from 2018)

https://www.mca.gov.in/content/mca/global/en/mca/master-data/MDS.html

The Bank codes details have been extracted from this website:

All the bank banches don't have the authority to issue electoral bonds only few branches of SBI bank can issue them and this table contains the details of that banks and based on the branch code we can connect to the receiver and donor data.

- [pib.gov](pib.gov)

Note: We obtained the dataset from Kaggle, which is available in comma-separated format (CSV). Unlike the sources above mentioned that provide data in PDF format but they are the official sites and even the data from Kaggle is just format converted, CSV is more accessible for analysis and processing.

Kaggle Sources :

https://www.kaggle.com/datasets/uplytics/electoral-bonds-india-complete-2024-dataset/data

Skills Learnt:

- SQL Query Writing using CTE, joins, date functions, sub-queries ,numeric functions etc.
- Data Extraction and Transformation
- Data Analysis and Interpretation
- Report Generation
- Problem Solving and Decision Making

Data tables: Our Data has 4 Tables

1.donor data: This table has details about Company/Organization/Individuals And bonds they bought.

Note: some donors took the bonds but they didn't donate to political parties.

Urn	JournalDate	PurchaseDate	ExpiryDate	Purchaser	PayBranchCode	PayTeller	Unique_key
00847202204080000002387	2022-04-08	2022-04-08	2022-04-22	KOYA AND COMPANY CONSTRUCTION LTD	847	3898296	OC10000
00300202110070000001967	2021-10-07	2021-10-07	2021-10-21	K RAHEJA CORP PVT LTD	300	7905165	OC10001
00300202110070000001984	2021-10-07	2021-10-07	2021-10-21	CAPSTAN TRADING LLP	300	7905165	OC10002
00300202110070000001967	2021-10-07	2021-10-07	2021-10-21	K RAHEJA CORP PVT LTD	300	7905165	OC10003
00300202110070000001984	2021-10-07	2021-10-07	2021-10-21	CAPSTAN TRADING LLP	300	7905165	OC10004
00300202110070000001967	2021-10-07	2021-10-07	2021-10-21	K RAHEJA CORP PVT LTD	300	7905165	OC10005
00300202201030000002075	2022-01-03	2022-01-03	2022-01-17	RAJESH MANNALAL AGRAWAL	300	7905165	OC10006
00300202201040000002078	2022-01-04	2022-01-04	2022-01-18	PRARAMBH SECURITIES PVT LTD	300	7905165	OC10007
00300202201030000002075	2022-01-03	2022-01-03	2022-01-17	RAJESH MANNALAL AGRAWAL	300	7905165	OC10009
00300202201040000002082	2022-01-04	2022-01-04	2022-01-18	PRARAMBH SECURITIES PVT LTD	300	7905165	OC10010

2.bankdata: the table has details about the branches of bank where redeem or encashing takes place.

branchCodeNo	STATE	Address	CITY
1	West Bengal and Andaman& Nicobar	Kolkata Main Branch,Samriddhi Bhawan1, Stran...	Kolkata
2	Tripura	Agartala BranchHari Ganga Basak Road,Agartal...	Agartala
41	Odisha	Bhubaneswar Main BranchP.B.No.14, Bhubanes...	Bhubaneswar
78	Assam	Guwahati Branch,Pan Bazar,MG Road, Kamrup, ...	Guwahati
92	Manipur	Imphal BranchM G Avenue, Imphal west, Manipu...	Imphal
125	Uttar Pradesh	Lucknow Main Branch,Tarawali Kothi, Motimahal...	Lucknow
152	Bihar	Patna Main BranchWest Gandhi Maidhan, Patna...	Patna
167	Jharkhand	Ranchi BranchCourt Compound, RanchiJharkha...	Ranchi
181	Meghalaya	Shillong BranchMG road, Near General PO Shillo...	Shilong
214	Nagaland	Kohima BranchNear deputy commissioner's offic...	Kohima

3.receiver data: the table has details about political parties and the bonds they received.

Note: in receiver data some unaccounted money was received.

DateEncashment	PartyName	AccountNum	PayBranchCode	PayTeller	Unique_key
2022-04-12	BHARAT RASHTRA SAMITHI	*******7477	847	3898296	OC10000
2021-10-08	BHARAT RASHTRA SAMITHI	*******7477	847	6417329	OC10001
2021-10-08	BHARAT RASHTRA SAMITHI	*******7477	847	6417329	OC10002
2021-10-08	BHARAT RASHTRA SAMITHI	*******7477	847	6417329	OC10003
2021-10-08	BHARAT RASHTRA SAMITHI	*******7477	847	6417329	OC10004
2021-10-08	BHARAT RASHTRA SAMITHI	*******7477	847	6417329	OC10005
2022-01-12	PRESIDENT, ALL INDIA CONGRESS COMMITTEE	*******4012	691	7516991	OC10006
2022-01-10	ALL INDIA TRINAMOOL CONGRESS	*******0688	1	3490777	OC10007
2022-01-12	PRESIDENT, ALL INDIA CONGRESS COMMITTEE	*******4012	691	7516991	OC10009
2022-01-10	ALL INDIA TRINAMOOL CONGRESS	*******0688	1	3490777	OC10010

4.bonddata: the table has details about bonds and their corresponding denominations.

Unique_key	Denomination
OC10000	10000000
OC10001	10000000
OC10002	10000000
OC10003	10000000
OC10004	10000000
OC10005	10000000
OC10006	10000000
OC10007	10000000
OC10009	10000000
OC10010	10000000

Sql Queries: For Analysis of Data

```
use electoralbonddata;
show tables;
select * from bonddata;
select * from donordata;
select * from receiverdata;
select * from bankdata;
```
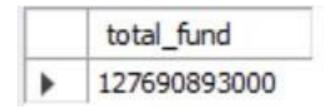
-- 1.Find out how much donors spent on bonds?
select sum(denomination) money from bonddata;
127787242000

	money
▶	127787242000

-- 2. Find out total fund politicians got?
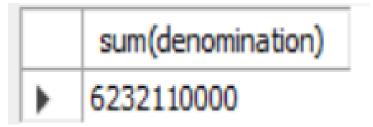select sum(b.denomination) total_fund
from receiverdata a
join bonddata b
on a.unique_key=b.unique_key;
127690893000

	total_fund
▶	127690893000

--3.Find out the total amount of unaccounted money received by parties?
select sum(denomination) from bonddata
where unique_key in (select r.unique_key from donordata d
right join receiverdata r
on d.unique_key=r.unique_key
where d.unique_key is null);

6232110000.

	sum(denomination)
▶	6232110000

-- 4.Find year wise how much money is spend on bonds?
select year(purchasedate) as year,sum(denomination) money from donordata d
join bonddata b
on d.unique_key=b.unique_key
group by year
order by year;

	year	money
▶	2019	17661280000
	2020	3639601000
	2021	15022927000
	2022	37048576000
	2023	42464745000
	2024	5718003000

-- 5.In which month most amount is spent on bonds?
with data as(select distinct month(purchasedate) as month,sum(denomination) as amount
from donordata d
join bonddata b
on d.unique_key=b.unique_key
group by month
order by month)
select month from data
where amount=(select max(amount) from data);
most amount is spent on bonds in april month.

	month
▶	4

-- 6.Find out which company bought the highest number of bonds?
 with data as(select purchaser company,count(unique_key) bonds
from donordata
group by company)
select company
from data
where bonds= (select max(bonds) from data);
future gaming and hotel services privated ltd company bought highest number of bonds.

	company
▶	FUTURE GAMING AND HOTEL SERVICES PRIVA...

-- 7.Find out which company spent the most on electoral bonds?
with comp as(select purchaser company, sum(denomination) amount
from donordata d
join bonddata b
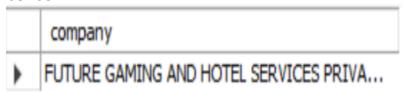on d.unique_key=b.unique_key
group by company)
select company
from comp
where amount=(select max(amount) from comp);
future gaming and hotel services private ltd company spent most on electoral bonds.

	company
▶	FUTURE GAMING AND HOTEL SERVICES PRIVA...

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

```
with data as(select purchaser as company,d.unique_key
unique_key1,denomination
from donordata d
join bonddata b
on d.unique_key=b.unique_key),
data1 as(select partyname,unique_key as unique_key2 from receiverdata),
data2 as(select *
from data
join data1
on data.unique_key1=data1.unique_key2),
data3 as(select company,sum(denomination) denomination from data2

where partyname in(select distinct(partyname) from data2)
group by company)
select company,denomination
from data3
where denomination = (select min(denomination) from data3);
## aravind s company paid least denomination.
```

	company	denomination
▶	ARAVIND S	1000

-- 9.Which political party received the highest cash?
```
with data as(select partyname,sum(denomination) as amount
from receiverdata r
join bonddata b
on r.unique_key=b.unique_key
group by partyname)
select partyname,amount
from data
where amount=(select max(amount) from data);
## bharatiya janata party received the highest cash
```

	partyname	amount
▶	BHARATIYA JANATA PARTY	60605111000

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

```
with data as(select partyname,count(unique_key) as electoral_bonds
from receiverdata
group by partyname)
select partyname,electoral_bonds
from data
where electoral_bonds=(select max(electoral_bonds) from data);
```
bharatiya janata party received the highest number of bonds.

partyname	electoral_bonds
▶ BHARATIYA JANATA PARTY	8633

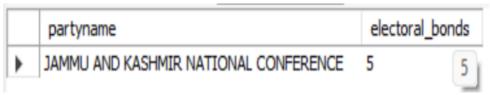**-- 11.Which political party received the least cash?**

```
with data as(select partyname,sum(denomination) amount
from receiverdata r
join bonddata b
on r.unique_key=b.unique_key
group by partyname)
select partyname,amount
from data
where amount=(select min(amount) from data);
```
goa forward party received the least cash.

partyname	amount
▶ GOA FORWARD PARTY	3500000

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

```
with data as(select partyname,count(unique_key) electoral_bonds
from receiverdata
group by partyname)
select partyname,electoral_bonds
from data
where electoral_bonds=(select min(electoral_bonds) from data);
```

jammu and kashmir national conference party received the least number of electoral bonds.
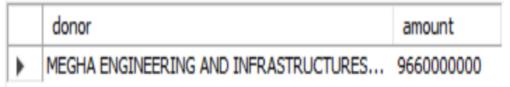
	partyname	electoral_bonds
▶	JAMMU AND KASHMIR NATIONAL CONFERENCE	5

-- 13.Find the 2nd highest donor in terms of amount he paid?
with data as(select purchaser donor, sum(denomination) amount
from donordata d
join bonddata b
on d.unique_key=b.unique_key
group by donor)
select donor,amount
from data
where amount=(select max(amount) from data where amount < (select max(amount) from data));
megha engineering and infrastructures pvt ltd company is 2nd highest donor in terms of amount he paid.

	donor	amount
▶	MEGHA ENGINEERING AND INFRASTRUCTURES...	9660000000

-- 14.Find the party which received the second highest donations?
with data as(select partyname,sum(denomination) donations
from receiverdata r
join bonddata b
on r.unique_key=b.unique_key
group by partyname)
select partyname,donations
from data
where donations=(select max(donations) from data where donations<(select max(donations) from data));
all india trinamool congress party received second highest donations.

partyname	donations
ALL INDIA TRINAMOOL CONGRESS	16095314000

-- 15.Find the party which received the second highest number of bonds?
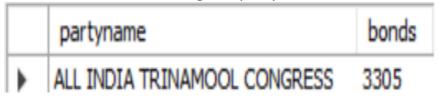with data as(select partyname,count(unique_key) as bonds
from receiverdata
group by partyname)
select partyname,bonds
from data
where bonds=(select max(bonds) from data where bonds<(select max(bonds)
from data));
all india trinamool congress party received the second highest no.of bonds

partyname	bonds
ALL INDIA TRINAMOOL CONGRESS	3305

-- 16.In which city were the most number of bonds purchased?
with data as(select city,count(unique_key) as bonds
from bankdata b
join donordata d
on d.paybranchcode=b.branchcodeno
group by city)
select city,bonds
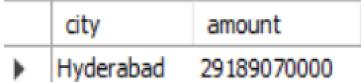from data
where bonds=(select max(bonds) from data);
in kolkata city purchased most number of bonds purchased.

city	bonds
Kolkata	5420

-- 17. In which city was the highest amount spent on electoral bonds?
with data as(select city,unique_key
from bankdata b

```
join donordata d
on b.branchcodeno=d.paybranchcode),
data1 as(select unique_key,denomination amount from bonddata),
data2 as( select city,sum(amount) amount
from data
join data1
on data.unique_key=data1.unique_key
group by city)
select city,amount
from data2
where amount=(select max(amount) from data2);
## hyderabad spent highest amount on electoral bonds.
```

city	amount
Hyderabad	29189070000

-- 18. In which city were the least number of bonds purchased?
```
with data as(select city,count(unique_key) as bonds
from bankdata b
join donordata d
on d.paybranchcode=b.branchcodeno
group by city)
select city,bonds
from data
where bonds=(select min(bonds) from data);
## ranchi city purchased least number of bonds.
```
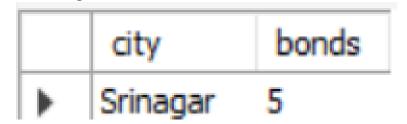
city	bonds
Ranchi	5

-- 19. In which city were the most number of bonds encashed?
```
with data as(select city,count(unique_key) bonds
from bankdata b
join receiverdata r
on b.branchcodeno=r.paybranchcode
```

```
group by city)
select city,bonds
from data
where bonds=(select max(bonds) from data);
```
new delhi encashed most number of bonds.

city	bonds
▶ New Delhi	12139

-- **20.In which city were the least number of bonds enchased?**
```
with data as(select city,count(unique_key) bonds
from bankdata b
join receiverdata r
on b.branchcodeno=r.paybranchcode
group by city)
select city,bonds
from data
where bonds=(select min(bonds) from data);
```
srinagar encashed least number of bonds.

city	bonds
▶ Srinagar	5

-- **21. List the branches where no electoral bonds were bought; if none, mention it as null?**
```
select city,unique_key
from bankdata b
left join donordata d
on b.branchcodeno=d.paybranchcode
where unique_key is null;
```

city	unique_key
Agartala	NULL
Imphal	NULL
Shilong	NULL
Kohima	NULL
Gangtok	NULL
Dehradun	NULL
Shimla	NULL
Aizawl	NULL
Srinagar	NULL
Itanagar	NULL

-- 22. Break down how much money is spent on electoral bonds for each year?

select year(purchasedate) as year ,sum(denomination)
from donordata d
join bonddata b
on d.unique_key=b.unique_key
group by year
order by year;

year	sum(denomination)
2019	17661280000
2020	3639601000
2021	15022927000
2022	37048576000
2023	42464745000
2024	5718003000

-- 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?

with data as(select year(purchasedate) as year ,sum(denomination) amount
from donordata d
join bonddata b
on d.unique_key=b.unique_key
group by year

```
order by year)
select year,amount
from data
where amount=(select max(amount) from data); ## 2023 has the highest amount.
with data as(select year(purchasedate) as year ,sum(denomination) amount
from donordata d
join bonddata b
on d.unique_key=b.unique_key
group by year
order by year)
select year,amount
from data
where amount=(select min(amount) from data); ## 2020 has the least amount.
```
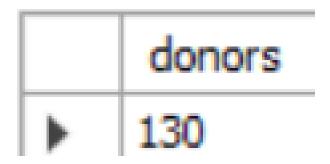
	year	amount
▶	2023	42464745000

	year	amount
▶	2020	3639601000

-- 24. Find out how many donors bought the bonds but did not donate to any political party?
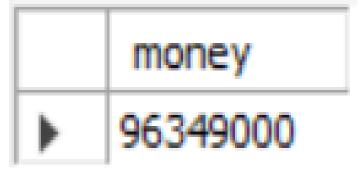
```
select count(d.unique_key)
from donordata  as d
left join receiverdata  as r
on r.unique_key=d.unique_key
where r.unique_key is null;
```
130 donors bought the bond and don't donate money to the political party.

	donors
▶	130

-- 25. Find out the money that could have gone to the PM Office, assuming the above question assumption (Domain Knowledge)?
with data as(select d.unique_key
from donordata d
left join receiverdata r
on d.unique_key=r.unique_key
where r.unique_key is null)
select sum(denomination) money
from data d
join bonddata b
on d.unique_key=b.unique_key;
96349000 money gone to pm office

	money
▶	96349000

-- 26. Find out how many bonds don't have donors associated with them?
select count(r.unique_key)
from donordata d
right join receiverdata r
on d.unique_key=r.unique_key
where d.unique_key is null;
1680 bonds don't have donors associated with them.

	bonds
▶	1680

-- 27. Pay Teller is the employee ID who either created the bond or redeemed it. So find the employee ID who issued the highest number of bonds?

with data as(select payteller,count(unique_key) bonds
from donordata
group by payteller)
select * from data
where bonds=(select max(bonds) from data) ;
6405134 is the employee id who issued the highest number of bonds.

	payteller	bonds
▶	6405134	1946

-- 28. Find the employee ID who issued the least number of bonds?

with data as(select payteller employee_id,count(unique_key) bonds
from donordata
group by payteller)
select *
from data
where bonds=(select min(bonds) from data) ;
the employees whose id's are (5578876,5575761) issued the least no.of bonds.

	employee_id	bonds
▶	5578876	1
	5575761	1

-- 29. Find the employee ID who assisted in redeeming or encashing bonds the most?

with data as(select payteller,count(payteller) bonds
from receiverdata
group by payteller)
select *
from data
where bonds=(select max(bonds) from data);
the employee whose id is 7516991 redeeming or encashing bonds most.

	payteller	bonds
▶	7516991	3645

-- 30. Find the employee ID who assisted in redeeming or encashing bonds the least?

with data as(select payteller,count(payteller) bonds
from receiverdata
group by payteller)
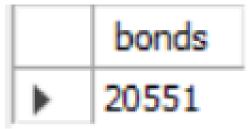select *
from data
where bonds=(select min(bonds) from data);
3 employees whose id's are(5880793,7626436,6596169) redeem or encashing bonds the least.

	payteller	bonds
▶	5880793	3
	7626436	3
	6596169	3

-- 31. Tell me total how many bonds are created?

select count(unique_key) as bonds
from bonddata;

20551 bonds are created.

	bonds
▶	20551

-- 32. Find the count of Unique Denominations provided by SBI?

select count(distinct(denomination))
from bonddata;

5 distinct denominations are provided by SBI

	count
▶	5

-- 33. List all the unique denominations that are available?

select distinct(denomination)
from bonddata;

	denomination
▶	10000000
	100000
	1000
	1000000
	10000

-- 34. Total money received by the bank for selling bonds?
select sum(denomination)
from bonddata;
1,27,78,72,42,000 this is the amount received by the bank by selling bonds

	sum(denomination)
▶	127787242000

-- 35. Find the count of bonds for each denominations that are created?
select count(unique_key)
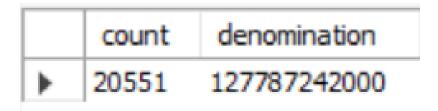from bonddata
where denomination is not null;
20,551 bonds.

	count(unique_key)
▶	20551

-- 36. Find the count and Amount or Valuation of electoral bonds for each denominations?
select count(denomination) count,sum(denomination) denomination
from bonddata;
count is 20,551 and denomination is 1,27,78,72,42,000

	count	denomination
▶	20551	127787242000

-- 37. Number of unique bank branches where we can buy electoral bond?

select count(distinct(city)) bank_branches
from bankdata;

29 unique bank branches where we can buy electoral bond.

	bank_branches
▶	29

-- 38. How many companies bought electoral bonds?

select count(distinct(purchaser)) company
from donordata;

1228 companies bought electoral bonds

	company
▶	1228

-- 39. How many companies made political donations?

select count(d.unique_key)
from donordata d
join receiverdata r
on d.unique_key=r.unique_key;

18,741 companies made political donations.

	count(d.unique_key)
▶	18741

-- 40. How many number of parties received donations?
select count(distinct(partyname))
from receiverdata;
24 parties received donations.

	count(distinct(partyname))
▶	24

-- 41. List all the political parties that received donations?
select distinct(partyname)
from receiverdata;

partyname
BHARAT RASHTRA SAMITHI
PRESIDENT, ALL INDIA CONGRESS COMMITTEE
ALL INDIA TRINAMOOL CONGRESS
BHARATIYA JANATA PARTY
SHIVSENA
BIJU JANATA DAL
TELUGU DESAM PARTY
AAM AADMI PARTY
DRAVIDA MUNNETRA KAZHAGAM (DMK)
SIKKIM KRANTIKARI MORCHA

-- 42. What is the average amount that each political party received?
select partyname,avg(denomination)
from receiverdata r
join bonddata b
on r.unique_key=b.unique_key
group by partyname;

partyname	avg(denomination)
BHARAT RASHTRA SAMITHI	6725968.4385
PRESIDENT, ALL INDIA CONGRESS COMMITTEE	4519597.9021
ALL INDIA TRINAMOOL CONGRESS	4869989.1074
BHARATIYA JANATA PARTY	7020168.0760
SHIVSENA	4489616.9014
BIJU JANATA DAL	9006968.6411
TELUGU DESAM PARTY	7845161.2903
AAM AADMI PARTY	2671428.5714
DRAVIDA MUNNETRA KAZHAGAM (DMK)	9861111.1111
SIKKIM KRANTIKARI MORCHA	7300000.0000

-- 43. What is the average bond value produced by bank?
select avg(denomination)
from bonddata;
6218054.6932.

avg(denomination)
6218054.6932

-- 44. List the political parties which have encashed bonds in different cities?
with data as(select *
from bankdata b
join receiverdata r
on b.branchcodeno=r.paybranchcode)
select distinct(partyname)
from data
where city in (select distinct(city) from data);

PartyName
▶ ALL INDIA TRINAMOOL CONGRESS
BIJU JANATA DAL
ADYAKSHA SAMAJVADI PARTY
RASHTRIYA JANTA DAL
BIHAR PRADESH JANTA DAL(UNITED)
JHARKHAND MUKTI MORCHA
SIKKIM KRANTIKARI MORCHA
SIKKIM DEMOCRATIC FRONT
SHIVSENA
NATIONALIST CONGRESS PARTY MAHARASHT...

-- 45.List the political parties which have encashed bonds in different cities and list the cities in which the bonds have encashed as well?
with data as(select *
from bankdata b
join receiverdata r
on b.branchcodeno=r.paybranchcode)
select distinct(partyname),city
from data
where city in (select distinct(city) from data);

PartyName	CITY
▶ ALL INDIA TRINAMOOL CONGRESS	Kolkata
BIJU JANATA DAL	Bhubaneswar
ADYAKSHA SAMAJVADI PARTY	Lucknow
RASHTRIYA JANTA DAL	Patna
BIHAR PRADESH JANTA DAL(UNITED)	Patna
ALL INDIA TRINAMOOL CONGRESS	Patna
JHARKHAND MUKTI MORCHA	Ranchi
SIKKIM KRANTIKARI MORCHA	Gangtok
SIKKIM DEMOCRATIC FRONT	Gangtok
SHIVSENA	Mumbai

END