

BANKING FINANCIAL



INTRODUCTION:

The banking dataset plays a vital role financial growth and customer trust .This project uses a banking complaints with the details of product type ,issues etc ..The customers have multiple ways to complaint issues such as web ,Phone, email and posted mail etc ..these complaints is crucial for improving customer satisfaction and service quality .Managing and analyzing the these factors.

OBJECTIVES:

- ❖ Identify the most common issues faced by customers.
- ❖ Measures company responses and resolution effectiveness.
- ❖ Highlights region with higher complaint volumes.
- ❖ Provides proper insights that can help banks improve financial services.
- ❖ Evaluate the different submission details.
- ❖ Identify the most common loan product.

TABLE DESIGN:

| | Field | Type | Null | Key | Default | Extra |
|---|----------------|------|------|-----|---------|-------|
| ▶ | ComplaintID | int | YES | | NULL | |
| | datereceived | text | YES | | NULL | |
| | Product | text | YES | | NULL | |
| | Subproduct | text | YES | | NULL | |
| | Issue | text | YES | | NULL | |
| | Subissue | text | YES | | NULL | |
| | Company | text | YES | | NULL | |
| | State | text | YES | | NULL | |
| | ZIPcode | text | YES | | NULL | |
| | consent | text | YES | | NULL | |
| | Submitted | text | YES | | NULL | |
| | Datesent | text | YES | | NULL | |
| | response | text | YES | | NULL | |
| | consumerdis... | text | YES | | NULL | |
| | Complainanc... | text | YES | | NULL | |

SQL QUERIES:

SELECT- It fetches the data in the table using the select query.

🔍 Select*from banking;

| ComplaintID | datereceived | Product | Subproduct | Issue | Subissue |
|-------------|--------------|---|-----------------------------|--|-------------------------------------|
| 2738619 | 27-11-2017 | Mortgage | Conventional home mortgage | Trouble during payment process | |
| 2933849 | 12-06-2018 | Mortgage | Conventional home mortgage | Trouble during payment process | |
| 1165653 | 21-12-2014 | Mortgage | Conventional fixed mortgage | Loan modification, collection, foreclosure | |
| 3316943 | 24-07-2019 | Credit reporting, credit repair services, or other... | Credit reporting | Incorrect information on your report | Information belongs to someone else |
| 3157550 | 20-02-2019 | Payday loan, title loan, or personal loan | Installment loan | Struggling to pay your loan | |
| 3068834 | 07-11-2018 | Mortgage | Conventional home mortgage | Trouble during payment process | |
| 1236640 | 10-02-2015 | Mortgage | Other mortgage | Loan modification, collection, foreclosure | |
| 1249267 | 20-02-2015 | Mortgage | Conventional fixed mortgage | Loan servicing, payments, escrow account | |
| 538930 | 23-09-2013 | Mortgage | Conventional fixed mortgage | Loan servicing, payments, escrow account | |
| 625914 | 09-12-2013 | Mortgage | Conventional fixed mortgage | Loan modification, collection, foreclosure | |

❖ It fetches all the columns from banking table.

WHERE- return the row where the data is.

🔍 Select * from banking where product ='mortgage';

3 • select*from banking where product ='mortgage';

| ComplaintID | datereceived | Product | Subproduct | Issue | Subissue | Company |
|-------------|--------------|----------|--|--|----------|--|
| 2738619 | 27-11-2017 | Mortgage | Conventional home mortgage | Trouble during payment process | | NATIONSTAR MORTGAGE LLC |
| 2933849 | 12-06-2018 | Mortgage | Conventional home mortgage | Trouble during payment process | | NATIONSTAR MORTGAGE LLC |
| 1165653 | 21-12-2014 | Mortgage | Conventional fixed mortgage | Loan modification, collection, foreclosure | | NATIONSTAR MORTGAGE LLC |
| 3068834 | 07-11-2018 | Mortgage | Conventional home mortgage | Trouble during payment process | | Community Loan Servicing, LLC (formerly known... |
| 1236640 | 10-02-2015 | Mortgage | Other mortgage | Loan modification, collection, foreclosure | | NATIONSTAR MORTGAGE LLC |
| 1249267 | 20-02-2015 | Mortgage | Conventional fixed mortgage | Loan servicing, payments, escrow account | | NATIONSTAR MORTGAGE LLC |
| 538930 | 23-09-2013 | Mortgage | Conventional fixed mortgage | Loan servicing, payments, escrow account | | NATIONSTAR MORTGAGE LLC |
| 625914 | 09-12-2013 | Mortgage | Conventional fixed mortgage | Loan modification, collection, foreclosure | | NATIONSTAR MORTGAGE LLC |
| 563802 | 19-10-2013 | Mortgage | Conventional adjustable mortgage (ARM) | Loan modification, collection, foreclosure | | NATIONSTAR MORTGAGE LLC |
| 164306 | 01-10-2012 | Mortgage | FHA mortgage | Loan servicing, payments, escrow account | | NATIONSTAR MORTGAGE LLC |

❖ Returns the rows where product is mortgage

DISTINCT-To get the unique value.

Select distinct product from banking;

❖ It retrieves the unique product

COUNT- The count is get the count of each row

🔍 Select count (product) from banking;

The screenshot shows two separate result grids from a database query. The top grid displays a list of product types with their descriptions:

| product |
|---|
| Mortgage |
| Credit reporting, credit repair services, or other... |
| Payday loan, title loan, or personal loan |
| Debt collection |
| Checking or savings account |
| Bank account or service |
| Student loan |
| Vehicle loan or lease |
| Consumer Loan |
| Credit card or prepaid card |
| Credit reporting |

The bottom grid shows the count of these products:

| count(product) |
|----------------|
| 102495 |

- ❖ It returns the count of the dataset.

COUNT & DISTINCT- I used for unique values count.

🔍 Select count (distinct subproduct) as products from banking;

The screenshot shows a result grid with a single row containing the count of unique subproducts:

| products |
|----------|
| 76 |

- ❖ It retrieves unique subproducts count.

ORDER BY- To get the values in the respective order.

🔍 Select * from banking order by datereceived;

24 • select * from banking order by datereceived; -- ascending order of date

| Result Grid | | | | | | |
|-------------|--------------|-------------------------|------------------|--|-------------------------|---------------------------------------|
| | | Filter Rows: | | Export: Wrap Cell Content: Fetch rows: | | |
| ComplaintID | datereceived | Product | Subproduct | Issue | Subissue | Company |
| 9027 | 01-01-2012 | Mortgage | FHA mortgage | Application, originator, mortgage broker | | BANK OF AMERICA, NATIONAL ASSOCIATION |
| 9002 | 01-01-2012 | Credit card | | Payoff process | | CITIBANK, N.A. |
| 219469 | 01-01-2013 | Bank account or service | Checking account | Making/receiving payments, sending money | | BANK OF AMERICA, NATIONAL ASSOCIATION |
| 221163 | 01-01-2013 | Mortgage | Reverse mortgage | Loan modification, collection, foreclosure | | WELLS FARGO & COMPANY |
| 219470 | 01-01-2013 | Mortgage | Other mortgage | Loan servicing, payments, escrow account | | REGIONS FINANCIAL CORPORATION |
| 216178 | 01-01-2013 | Bank account or service | Checking account | Problems caused by my funds being low | | BANK OF AMERICA, NATIONAL ASSOCIATION |
| 221179 | 01-01-2013 | Consumer Loan | Vehicle loan | Managing the loan or lease | | TOYOTA MOTOR CREDIT CORPORATION |
| 215978 | 01-01-2013 | Credit reporting | | Incorrect information on credit report | Information is not mine | Experian Information Solutions Inc. |
| 219453 | 01-01-2013 | Mortgage | Other mortgage | Loan modification, collection, foreclosure | | WELLS FARGO & COMPANY |
| 219466 | 01-01-2013 | Mortgage | Other mortgage | Loan modification, collection, foreclosure | | NATIONSTAR MORTGAGE LLC |

- ❖ It retrieves the datereceived columns in ascending order.

🔍 Select * from banking order by datereceived desc;

25 • select * from banking order by datereceived desc; -- descending order

| Result Grid | | | | | | |
|-------------|--------------|-------------------------|------------------|--|-------------------------|---------------------------------------|
| | | Filter Rows: | | Export: Wrap Cell Content: Fetch rows: | | |
| ComplaintID | datereceived | Product | Subproduct | Issue | Subissue | Company |
| 9027 | 01-01-2012 | Mortgage | FHA mortgage | Application, originator, mortgage broker | | BANK OF AMERICA, NATIONAL ASSOCIATION |
| 9002 | 01-01-2012 | Credit card | | Payoff process | | CITIBANK, N.A. |
| 219469 | 01-01-2013 | Bank account or service | Checking account | Making/receiving payments, sending money | | BANK OF AMERICA, NATIONAL ASSOCIATION |
| 221163 | 01-01-2013 | Mortgage | Reverse mortgage | Loan modification, collection, foreclosure | | WELLS FARGO & COMPANY |
| 219470 | 01-01-2013 | Mortgage | Other mortgage | Loan servicing, payments, escrow account | | REGIONS FINANCIAL CORPORATION |
| 216178 | 01-01-2013 | Bank account or service | Checking account | Problems caused by my funds being low | | BANK OF AMERICA, NATIONAL ASSOCIATION |
| 221179 | 01-01-2013 | Consumer Loan | Vehicle loan | Managing the loan or lease | | TOYOTA MOTOR CREDIT CORPORATION |
| 215978 | 01-01-2013 | Credit reporting | | Incorrect information on credit report | Information is not mine | Experian Information Solutions Inc. |
| 219453 | 01-01-2013 | Mortgage | Other mortgage | Loan modification, collection, foreclosure | | WELLS FARGO & COMPANY |
| 219466 | 01-01-2013 | Mortgage | Other mortgage | Loan modification, collection, foreclosure | | NATIONSTAR MORTGAGE LLC |

Inking 13 ×

- ❖ It retrieves the datereceived columns in descending order.

🔍 Select * from banking where subproduct='checking account' order by complaintID;

| Result Grid | | | | | | |
|-------------|--------------|-------------------------|------------------|--|----------|---------------------------------------|
| | | Filter Rows: | | Export: Wrap Cell Content: Fetch rows: | | |
| ComplaintID | datereceived | Product | Subproduct | Issue | Subissue | Company |
| 853 | 22-05-2012 | Bank account or service | Checking account | Problems caused by my funds being low | | BBVA FINANCIAL CORPORATION |
| 900 | 22-05-2012 | Bank account or service | Checking account | Deposits and withdrawals | | U.S. BANCORP |
| 3459 | 14-03-2012 | Bank account or service | Checking account | Using a debit or ATM card | | JPMORGAN CHASE & CO. |
| 17464 | 12-03-2012 | Bank account or service | Checking account | Deposits and withdrawals | | U.S. BANCORP |
| 17699 | 19-03-2012 | Bank account or service | Checking account | Account opening, closing, or management | | BANK OF AMERICA, NATIONAL ASSOCIATION |
| 17716 | 20-03-2012 | Bank account or service | Checking account | Problems caused by my funds being low | | ALLY FINANCIAL INC. |

- ❖ It retrieves the subproduct is checking account based on the order of complainID.

GROUP BY- The group by is counts the subproducts in each products

🔍 Select product ,count(subproduct) as pro from banking group by product;

Result Grid | Filter Rows: Export:

| product | pro |
|---|-------|
| Mortgage | 19008 |
| Credit reporting, credit repair services, or other... | 36916 |
| Payday loan, title loan, or personal loan | 1226 |
| Debt collection | 16868 |
| Checking or savings account | 5990 |
| Bank account or service | 2451 |
| Student loan | 2754 |
| Vehicle loan or lease | 1527 |
| Consumer Loan | 772 |
| Credit card or prepaid card | 7407 |
| Credit reporting | 3304 |

- ❖ It retrieves the counts subproducts in each product.

MULTIPLE COLUMNS IN GROUP BY:

🔍 Select submitted, response, count(*) as counts from banking group by submitted,response;

Result Grid | Filter Rows: Export:

| submitted | response | counts |
|-------------|----------|--------|
| Web | Yes | 79843 |
| Referral | Yes | 10460 |
| Phone | Yes | 5642 |
| Phone | No | 134 |
| Postal mail | Yes | 3654 |
| Web | No | 1300 |
| Fax | Yes | 1207 |
| Referral | No | 165 |
| Email | Yes | 17 |
| Postal mail | No | 57 |
| Fax | No | 16 |

- ❖ It retrieves the count of the responses based on submitted.

Is Null: To get the columns that does not have the value.

🔍 select product,Subissue from banking where Subissue is not null;

Result Grid | Filter Rows: Export: Wrap Cell Content:

| product | Subissue |
|---|-------------------------------------|
| Mortgage | |
| Mortgage | |
| Mortgage | |
| Credit reporting, credit repair services, or other... | Information belongs to someone else |
| Payday loan, title loan, or personal loan | |
| Mortgage | |

- ❖ It retrieves the null values in the subissue column.

Is Not Null: To get the columns that does have values.

🔍 Select product,subproduct from banking where subproduct is not null;

Result Grid | Filter Rows: Export: Wrap Cell Content:

| product | subproduct |
|---|--------------------------------|
| Mortgage | Conventional home mortgage |
| Mortgage | Conventional home mortgage |
| Mortgage | Conventional fixed mortgage |
| Credit reporting, credit repair services, or other... | Credit reporting |
| Payday loan, title loan, or personal loan | Installment loan |
| Mortgage | Conventional home mortgage |
| Mortgage | Other mortgage |
| Mortgage | Conventional fixed mortgage |
| Mortgage | Conventional fixed mortgage |
| Mortgage | Conventional fixed mortgage |
| Mortgage | Conventional adjustable mor... |

- ❖ It retrieves the values in subproduct values.

LOGICAL OPERATORS:

AND-it filters rows where both conditions are true.

🔍 Select company,submitted from banking where company='NATIONSTAR MORTGAGE LLC' and submitted='Web' ;

Result Grid | Filter Rows:

| company | submitted |
|-------------------------|-----------|
| NATIONSTAR MORTGAGE LLC | Web |

- ❖ It retrieves the company name and the complaint is submitted on web.

OR- it returns rows where the one condition is true.

>Select consumerdispute,companyresponse from banking where consumerdispute='yes' or companyresponse='closed with explanation';

Result Grid | Filter Rows:

| consumerdispute | companyresponse |
|-----------------|-------------------------|
| Unknown | Closed with explanation |
| Unknown | Closed with explanation |
| No | Closed with explanation |
| Unknown | Closed with explanation |
| Unknown | Closed with explanation |
| Unknown | Closed with explanation |
| Yes | Closed with explanation |
| Yes | Closed with explanation |
| No | Closed with explanation |
| No | Closed with explanation |

- ❖ It retrieves the consumerdispute=yes or companyresponse=closed with explanation.

View

A view is like a virtual table.

create view responses as select issue,subissue,company,companyresponse from banking where issue='Loan modification,collection,foreclosure';

🔍 select * from responses;

| Result Grid | | Filter Rows: | Export: | Wrap Cell Content: | Fetch rows: |
|--|----------|-------------------------|-------------------------|--------------------|-------------|
| issue | subissue | company | companyresponse | | |
| Loan modification, collection, foreclosure | | NATIONSTAR MORTGAGE LLC | Closed with explanation | | |
| Loan modification, collection, foreclosure | | NATIONSTAR MORTGAGE LLC | Closed with explanation | | |
| ▶ Loan modification, collection, foreclosure | | NATIONSTAR MORTGAGE LLC | Closed with explanation | | |
| Loan modification, collection, foreclosure | | NATIONSTAR MORTGAGE LLC | Closed with explanation | | |
| Loan modification, collection, foreclosure | | NATIONSTAR MORTGAGE LLC | Closed with explanation | | |
| Loan modification, collection, foreclosure | | NATIONSTAR MORTGAGE LLC | Closed with explanation | | |
| Loan modification, collection, foreclosure | | NATIONSTAR MORTGAGE LLC | Closed with explanation | | |
| Loan modification, collection, foreclosure | | NATIONSTAR MORTGAGE LLC | Closed with explanation | | |
| Loan modification, collection, foreclosure | | NATIONSTAR MORTGAGE LLC | Closed without relief | | |
| Loan modification, collection, foreclosure | | NATIONSTAR MORTGAGE LLC | Closed with explanation | | |
| Loan modification, collection, foreclosure | | NATIONSTAR MORTGAGE LLC | Closed with explanation | | |
| Loan modification, collection, foreclosure | | NATIONSTAR MORTGAGE LLC | Closed with explanation | | |
| Loan modification, collection, foreclosure | | NATIONSTAR MORTGAGE LLC | Closed with explanation | | |

- ❖ Created responses table in banking which holds the issue,subissue , company and companyresponse.

STORED PROCEDURE:

- Created a procedure for receiveddate and sentdate as to understand the datedifference between the customer and the company. How fast we responded to the complaints.

🔍 delimiter \$\$

```
create procedure receive_sent()
begin
    select complaintID,datereceived,datesent,datediff(str_to_date(datesent,'%d-%m-%Y'),str_to_date(datereceived,'%d-%m-%Y')) as
        com_received from banking;
    select datereceived,datesent,
        day(str_to_date(datereceived ,'%d-%m-%Y')) as rday,
        month(str_to_date(datereceived ,'%d-%m-%Y')) as rmonth,
        year(str_to_date(datereceived ,'%d-%m-%Y')) as ryear,
```

```

        day(str_to_date(datesent ,'%d-%m-%Y')) as sday,
        month(str_to_date(datesent ,'%d-%m-%Y')) as smonth,
        year(str_to_date(datesent ,'%d-%m-%Y')) as syear from banking;

end $$

delimiter ;

call receive_sent();

```

| | complaintID | datereceived | datesent | com_received |
|-----------|-------------|--------------|------------|--------------|
| ▶ | 2738619 | 27-11-2017 | 27-11-2017 | 0 |
| | 2933849 | 12-06-2018 | 12-06-2018 | 0 |
| | 1165653 | 21-12-2014 | 21-12-2014 | 0 |
| | 3316943 | 24-07-2019 | 24-07-2019 | 0 |
| | 3157550 | 20-02-2019 | 20-02-2019 | 0 |
| | 3068834 | 07-11-2018 | 07-11-2018 | 0 |
| | 1236640 | 10-02-2015 | 13-02-2015 | 3 |
| | 1249267 | 20-02-2015 | 20-02-2015 | 0 |
| | 538930 | 23-09-2013 | 24-09-2013 | 1 |
| | 625914 | 09-12-2013 | 10-12-2013 | 1 |
| | 563802 | 19-10-2013 | 21-10-2013 | 2 |
| | 1647006 | 01-10-2017 | 01-10-2017 | 0 |
| Result 13 | | Result 14 | | |

- ❖ Duration of the received and sentdate using the datedifference.

| | datereceived | datesent | rday | rmonth | ryear | sday | smonth | syear |
|---|--------------|------------|------|--------|-------|------|--------|-------|
| ▶ | 27-11-2017 | 27-11-2017 | 27 | 11 | 2017 | 27 | 11 | 2017 |
| | 12-06-2018 | 12-06-2018 | 12 | 6 | 2018 | 12 | 6 | 2018 |
| | 21-12-2014 | 21-12-2014 | 21 | 12 | 2014 | 21 | 12 | 2014 |
| | 24-07-2019 | 24-07-2019 | 24 | 7 | 2019 | 24 | 7 | 2019 |
| | 20-02-2019 | 20-02-2019 | 20 | 2 | 2019 | 20 | 2 | 2019 |
| | 07-11-2018 | 07-11-2018 | 7 | 11 | 2018 | 7 | 11 | 2018 |
| | 10-02-2015 | 13-02-2015 | 10 | 2 | 2015 | 13 | 2 | 2015 |
| | 20-02-2015 | 20-02-2015 | 20 | 2 | 2015 | 20 | 2 | 2015 |
| | 23-09-2013 | 24-09-2013 | 23 | 9 | 2013 | 24 | 9 | 2013 |
| | 09-12-2013 | 10-12-2013 | 9 | 12 | 2013 | 10 | 12 | 2013 |
| | 19-10-2013 | 21-10-2013 | 19 | 10 | 2013 | 21 | 10 | 2013 |
| | 01-10-2017 | 01-10-2017 | 1 | 10 | 2017 | 1 | 10 | 2017 |

FUCTION:

delimiter \$\$

create function company_details(id int)

returns varchar(50)

deterministic

begin

declare details varchar(50);

select concat(company,state,ZIPcode) into details

from banking

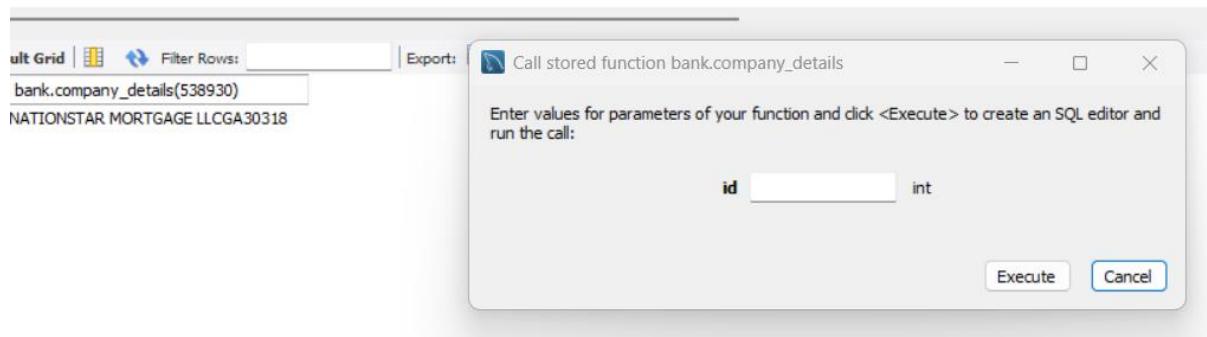
where complaintID=id;

return details;

end \$\$

delimiter ;

```
1 •  select bank.company_details(538930);  
2
```





CONCLUSION:

The analysis shows that most complaints are concentrated in mortgage loan, credit reporting/repair and debt collection.on otherside consumer loan and payday loans are attract the least complaints compared to other products.And most of complaints submitted in web,followed by phone.the preffered mode of complaints submission ,and improving folloe up on refferals can further enhance customer satisfaction.