Banking Dashboard

Problem Statement –

Develop a basic understanding of risk analytics in banking and financial services and understand how data is used to minimise the risk of losing money while lending to customers.

Solution –

With our dashboards which are created using Power BI latest tools helps the company to make a decision based on the applicant's profile like if the applicant is likely to repay the loan then approving the loan otherwise not.

About Dataset –

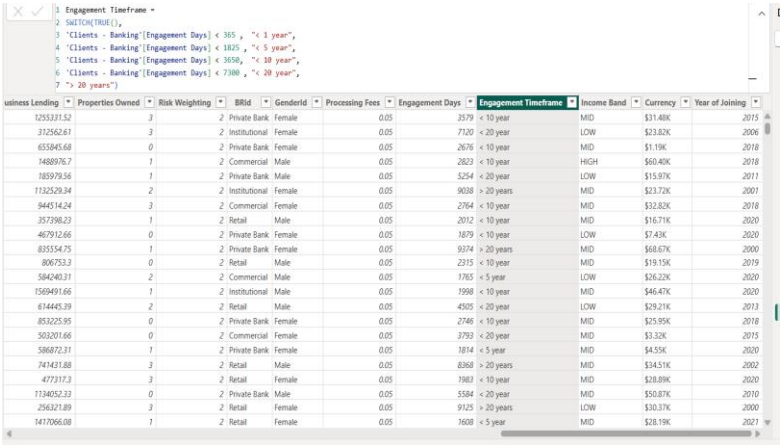
This dataset basically contains information about bank details, various client details which consists of multiple tables which are interlinked with each other through keys like primary key and foreign key.

The various tables are Banking Relationship, Client-Banking, Gender, Investment Advisor and Period.

Data Cleaning –

Creating a new column Engagement Timeframe in client-banking column which tells about the time line of the clients in banks.

BANKING DASHBOARD REPORT



```
1 Engagement Timeframe =
2 SWITCH(TRUE(),
3 'Clients - Banking'[Engagement Days] < 365 , "< 1 year",
4 'Clients - Banking'[Engagement Days] < 1825 , "< 5 year",
5 'Clients - Banking'[Engagement Days] < 3650, "< 10 year",
6 'Clients - Banking'[Engagement Days] < 7300 , "< 20 year",
7 "> 20 years")
```

usiness Lending	Properties Owned	Risk Weighting	BRId	GenderId	Processing Fees	Engagement Days	Engagement Timeframe	Income Band	Currency	Year of Joining
1255331.52	3	2	Private Bank	Female	0.05	3579	< 10 year	MID	$31.48K	2015
312562.61	3	2	Institutional	Female	0.05	7120	< 20 year	LOW	$23.82K	2006
655845.68	0	2	Private Bank	Female	0.05	2676	< 10 year	MID	$1.19K	2018
1488976.7	1	2	Commercial	Male	0.05	2823	< 10 year	HIGH	$60.40K	2018
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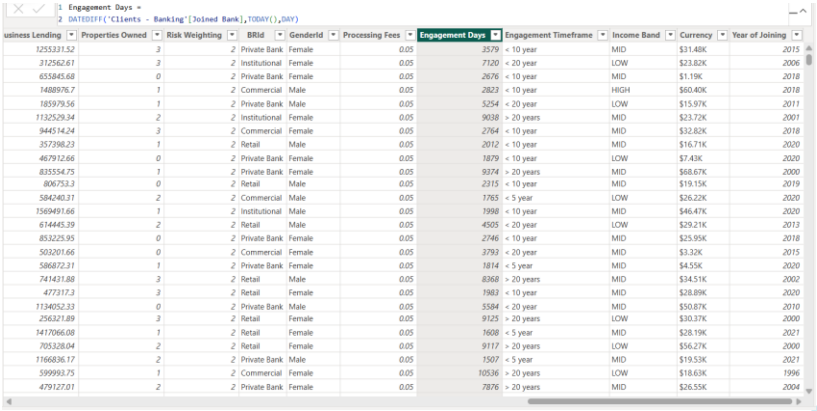
1132529.34	2	2	Institutional	Female	0.05	9038	> 20 years	MID	$23.72K	2001
944514.24	3	2	Commercial	Female	0.05	2764	< 10 year	MID	$32.82K	2018
357398.23	1	2	Retail	Male	0.05	2012	< 10 year	MID	$16.71K	2020
467912.66	0	2	Private Bank	Female	0.05	1879	< 10 year	LOW	$7.43K	2020
835554.75	1	2	Private Bank	Female	0.05	9374	> 20 years	MID	$68.67K	2000
806753.3	0	2	Retail	Male	0.05	2315	< 10 year	MID	$19.15K	2019
584240.31	2	2	Commercial	Male	0.05	1765	< 5 year	LOW	$26.22K	2020
1569491.66	1	2	Institutional	Male	0.05	1998	< 10 year	MID	$46.47K	2020
614445.39	2	2	Retail	Male	0.05	4505	< 20 year	LOW	$29.21K	2013
853225.95	0	2	Private Bank	Female	0.05	2746	< 10 year	MID	$25.95K	2018
503201.66	0	2	Commercial	Female	0.05	3793	< 20 year	MID	$3.32K	2015
586872.31	1	2	Private Bank	Female	0.05	1814	< 5 year	MID	$4.55K	2020
741431.88	3	2	Retail	Male	0.05	8368	> 20 years	MID	$34.51K	2002
477317.3	3	2	Retail	Female	0.05	1983	< 10 year	MID	$28.89K	2020
1134052.33	0	2	Private Bank	Male	0.05	5584	< 20 year	MID	$50.87K	2010
256321.89	3	2	Retail	Female	0.05	9125	> 20 years	LOW	$30.37K	2000
1417066.08	1	2	Retail	Female	0.05	1608	< 5 year	MID	$28.19K	2021

Creating a new column Engagement Days in Client-Banking table how many days the client spent from the date of joining in banks.



```
1 Engagement Days =
2 DATEDIFF('Clients - Banking'[Joined Bank],TODAY(),DAY)
```

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705328.04	2	2	Retail	Female	0.05	9117	> 20 years	LOW	$56.27K	2000
1166836.17	2	2	Private Bank	Male	0.05	1507	< 5 year	MID	$19.53K	2021
599993.75	1	2	Commercial	Female	0.05	10536	> 20 years	LOW	$18.63K	1996
479127.01	2	2	Private Bank	Female	0.05	7876	> 20 years	MID	$26.55K	2004

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Creating bins for the Estimated Income < 100000 as low and <300000 as Mid with the column named as Income Band in Clients-Banking table.

```
1 Income Band =
2 SWITCH(TRUE(),
3 'Clients - Banking'[Estimated Income] < 100000 , "LOW",
4 'Clients - Banking'[Estimated Income] < 300000 , "MID",
5 "HIGH")
```

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1166836.17	2	2	Private Bank	Male	0.05	1507	< 5 year	MID	$19.53K

Creating a new column named as Processing Fees for the column Fee Structure like if fee structure is high then processing fee would be 0.05.

```
1 Processing Fees =
2 SWITCH('Clients - Banking'[Fee Structure],
3 "High",0.05,
4 "Mid",0.01,
5 "Low",0.01,0
6 )
```

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Calculated Functions –

Sum:

The power bi sum function will add all the numbers in a column and the column contains numbers to sum. It returns a decimal number.

Syntax:

```
Sum= SUM(<column>)
```

Example:

```
Bank Deposit =
SUM ('Clients - Banking'[Bank
Deposits])
```

Distinct Count:

Counts the number of distinct values in a column

Syntax:

DISTINCTCOUNT(<column>)

Example:

```
Total Clients = DISTINCTCOUNT ('Clients
- Banking'[Client ID])
```

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SUMX:

Returns the sum of an expression evaluated for each row in a table.

Syntax:

SUMX(<table>, <expression>)

Example:
Total Fees = SUMX ('Clients - Banking', [Total Loan] * 'Clients - Banking'[Processing Fees])

Switch:

Evaluated an expression against a list of values and returns one of multiple possible result expressions

Syntax:

SWITCH(<expression>, <value>, <result> [, <value>, <result>] … [, <else>])

DATEDIFF:

Returns the number of interval boundaries between two dates.

Syntax:

DATEDIFF(<Date1>, <Date2>, <Interval>)

Example:

Engagement Days = DATEDIFF ('Clients - Banking'[Joined Bank], TODAY (), DAY ()

KPI'S:

In which followings KPIS are present:

Total Clients:

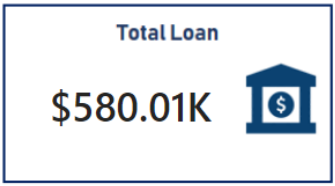
Total Clients KPI represents total number of clients in banking.

```
Total Clients = DISTINCTCOUNT ('Clients - Banking'[Client ID])
```

Total Loan:

Total Loan gives you information about the bank loan + Business lending + credit cards balance of particular investor, gender.

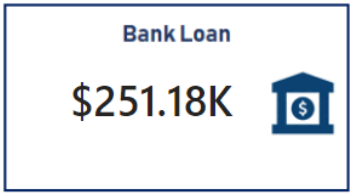
```
Total Loan = [Bank Loan] + [Business Lending] + [Credit Cards Balance]
```



Bank Loan:

Bank Loan gives you information what is the loan amount of loan to be repaid by the client to bank.

```
Bank Loan = SUM ('Clients - Banking'[Bank Loans])
```



Business Lending:

Business lending gives you information about the loan amount given to small business.

```
Business Lending = SUM ('Clients - Banking'[Business Lending])
```

Total Deposit

Total Deposit gives you information about the amount deposited by particular investors in bank

```
Total Deposit = [Bank Deposit] + [Savings Account] + [Foreign Currency Account] + [Checking Accounts]
```

Total Fees:

Total Fees is nothing but the amount charged by the bank for account set-up, maintenance charges etc.

```
Total Fees = SUMX ('Clients - Banking',
[Total Loan] * 'Clients -
Banking'[Processing Fees])
```

Bank Deposit:

Bank deposit is the money put in the bank.

```
Bank Deposit =
SUM ('Clients - Banking'[Bank
Deposits])
```

Checking Account Amount:

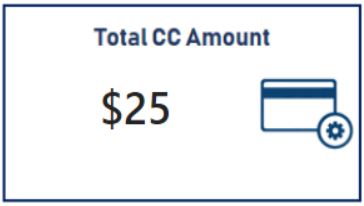
Checking account amount is nothing but which offers easy access to your money for daily transactional needs.

```
Checking Accounts =
SUM ('Clients - Banking'[Checking
Accounts])
```

Total CC Amount:

Total CC Amount is a short-term source of financing for a company by a bank.

```
Total CC Amount = SUM ('Clients -
Banking'[Amount of Credit Cards])
```



Saving Account Amount:

A savings account is an interest-bearing deposit account held at a bank.

```
Savings Account = SUM ('Clients - Banking'[Saving Accounts])
```

Foreign Currency Amount:

Foreign Currency Account means an account held in a currency that is not the currency of India or Bhutan or Nepal.

```
Foreign Currency Account = SUM ('Clients - Banking'[Foreign Currency Account])
```

Engagement Account:

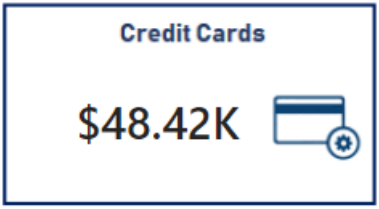
Engagement Banking is nothing but puts the customer at the centre and aims to deliver the digital experiences they expect.

```
Engagement Length =
SUM ('Clients - Banking'[Engagement Days])
```

Credit Cards Balance:

It is the total amount of money currently owned by a cardholder to their credit card bank.

```
Credit Cards Balance = SUM ('Clients - Banking'[Credit Card Balance])
```

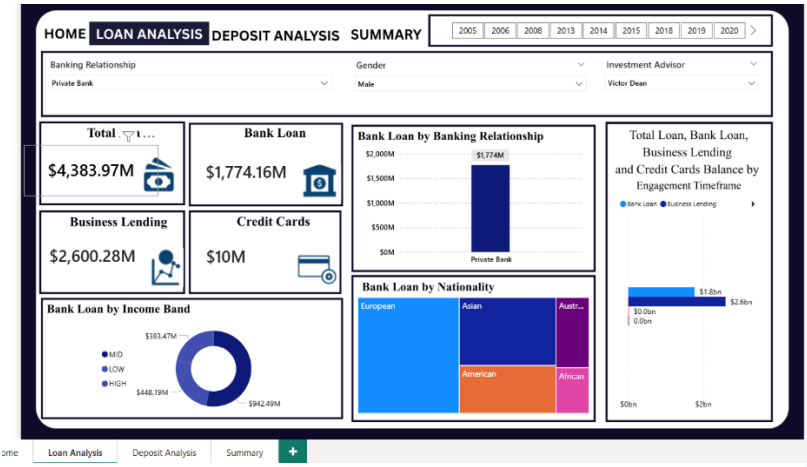


BANKING DASHBOARD REPORT

Visualization And Result –

Home

Loan Analysis



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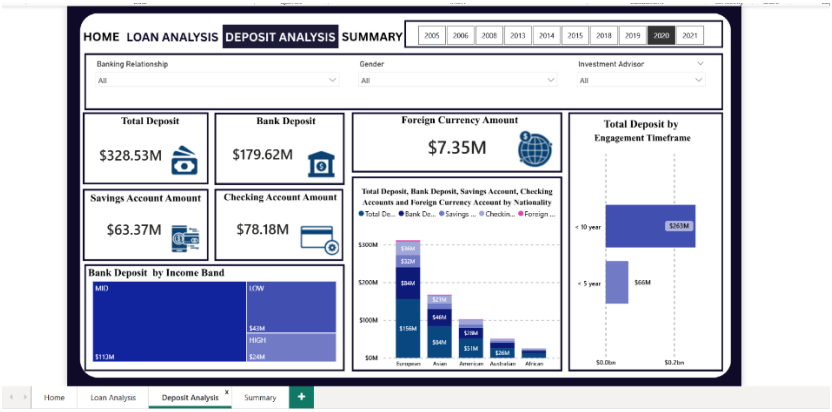
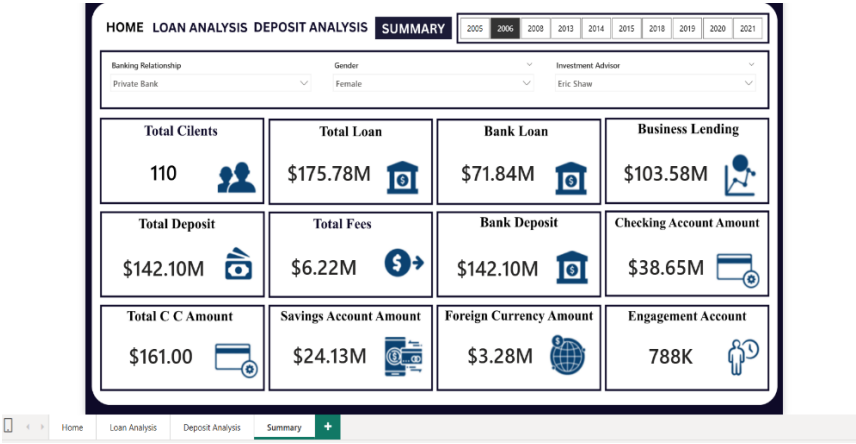
Deposit Analysis



Summary Dashboard



Conclusion –

Empowered by the latest data visualization techniques, Power BI dashboards are among the most effective resources for using in banking sector. As outlined in this write-up, a banking operation's dashboard in Power BI can be developed with key banking related metrics and KPIs.

Future Work –

With these dashboards banks can easily know what is the total loan amount and all other things of a particular investor.

It also helps which type of banks have more number of clients as we can see private banks have more number of clients so it can helps other banks can build their strategies to increase clients.

It also provides insights about which nationality has highest bank loans.

It gives information about various types of amount involved in different types of accounts by investors.