**BANK LOAN REPORT QUERY DOCUMENT**

**Dashboard 1: Summary. Problem Statement**

**KPI’s:**

* 1. **Total Loan Applications**

**select count(id) as Total\_applications from bank\_loan\_data;**

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* 1. **MTD Loan Applications**

**select count(id) as MTD from bank\_loan\_data where**

**extract(month from issue\_date) = (select max(extract(month from issue\_date)) from bank\_loan\_data)**

**and extract(year from issue\_date) = (select max(extract(year from issue\_date)) from bank\_loan\_data);**

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* 1. **Track changes month over month**

**with monthly\_application\_table as(**

**select**

**extract(year from issue\_date) as year, extract(month from issue\_date) as mon, count(id) as total\_applications**

**from bank\_loan\_data**

**group by extract(year from issue\_date), extract(month from issue\_date)**

**order by extract(year from issue\_date), extract(month from issue\_date))**

**select**

**year,**

**mon,**

**100\*((total\_applications - (lag(total\_applications) over()))/(lag(total\_applications) over()))**

**as percent\_difference from monthly\_application\_table;**

|  |  |  |
| --- | --- | --- |
| **year** | **mon** | **percent\_difference** |
| 2021 | 1 | NULL |
| 2021 | 2 | -2.2727 |
| 2021 | 3 | 15.2699 |
| 2021 | 4 | 4.8725 |
| 2021 | 5 | 5.6624 |
| 2021 | 6 | 9.3782 |
| 2021 | 7 | 5.7161 |
| 2021 | 8 | 2.2282 |
| 2021 | 9 | 2.7608 |
| 2021 | 10 | 7.3529 |
| 2021 | 11 | 6.2961 |
| 2021 | 12 | 6.9145 |

* 1. **Total Funded Amount**

**select sum(loan\_amount) as total\_funded\_amount from bank\_loan\_data;**



* 1. **MTD Funded Amount**

**select sum(loan\_amount) as MTD\_funded\_amount from bank\_loan\_data**

**where extract(year from issue\_date)= (select extract(year from max(issue\_date)) from bank\_loan\_data) and**

**extract(month from issue\_date)= (select extract(month from max(issue\_date)) from bank\_loan\_data);**

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* 1. **Track changes of funded amount month over month**

**with monthly\_funded\_amt\_data as(**

**select extract(year from issue\_date) as year,**

**extract(month from issue\_date) as mon,**

**sum(loan\_amount) as total\_funded\_amount**

**from bank\_loan\_data**

**group by extract(year from issue\_date),**

**extract(month from issue\_date)**

**order by extract(year from issue\_date),**

**extract(month from issue\_date))**

**select year,**

**mon,**

**100\*((total\_funded\_amount - (lag(total\_funded\_amount) over()))/(lag(total\_funded\_amount) over())) as percent\_difference**

**from monthly\_funded\_amt\_data;**

|  |  |  |
| --- | --- | --- |
| year | mon | percent\_difference |
| 2021 | 1 | NULL |
| 2021 | 2 | -1.5334 |
| 2021 | 3 | 17.1531 |
| 2021 | 4 | 3.2037 |
| 2021 | 5 | 6.5017 |
| 2021 | 6 | 7.6347 |
| 2021 | 7 | 4.8371 |
| 2021 | 8 | 6.5218 |
| 2021 | 9 | 7.2298 |
| 2021 | 10 | 9.7441 |
| 2021 | 11 | 6.3729 |
| 2021 | 12 | 13.0387 |

* 1. **Total Amount Received**

**select sum(total\_payment) as total\_amount\_received from bank\_loan\_data;**

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* 1. **MTD Amount Received**

**select sum(total\_payment) as MTD\_amount\_received from bank\_loan\_data**

**where extract(year from issue\_date)= (select extract(year from max(issue\_date)) from bank\_loan\_data) and**

**extract(month from issue\_date)= (select extract(month from max(issue\_date)) from bank\_loan\_data);**

* 1. **Track changes of amount received month over month**

**with monthly\_amt\_received\_data as(**

**select extract(year from issue\_date) as year,**

**extract(month from issue\_date) as mon,**

**sum(total\_payment) as total\_amount\_received**

**from bank\_loan\_data**

**group by extract(year from issue\_date),**

**extract(month from issue\_date)**

**order by extract(year from issue\_date),**

**extract(month from issue\_date))**

**select year,**

**mon,**

**100\*((total\_amount\_received - (lag(total\_amount\_received) over()))/(lag(total\_amount\_received) over()))**

**as percent\_difference**

**from monthly\_amt\_received\_data;**

|  |  |  |
| --- | --- | --- |
| **year** | **mon** | **percent\_difference** |
| 2021 | 1 | NULL |
| 2021 | 2 | 0.5037 |
| 2021 | 3 | 16.4034 |
| 2021 | 4 | 0.7164 |
| 2021 | 5 | 3.862 |
| 2021 | 6 | 7.1525 |
| 2021 | 7 | 7.3627 |
| 2021 | 8 | 9.9286 |
| 2021 | 9 | 3.0498 |
| 2021 | 10 | 12.3127 |
| 2021 | 11 | 1.4827 |
| 2021 | 12 | 15.8429 |

* 1. **Average interest rates**

**select avg(int\_rate) as average\_interest\_rate from bank\_loan\_data;**

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* 1. **MTD Average interest rates**

**select avg(int\_rate) as MTD\_avg\_int\_rate from bank\_loan\_data**

**where extract(year from issue\_date)= (select extract(year from max(issue\_date)) from bank\_loan\_data) and**

**extract(month from issue\_date)= (select extract(month from max(issue\_date)) from bank\_loan\_data); **

* 1. **Track average interest rate changes received month over month**

**with monthly\_avg\_int\_rates\_data as(**

**select extract(year from issue\_date) as year,**

**extract(month from issue\_date) as mon,**

**avg(int\_rate) as avg\_interest\_rates**

**from bank\_loan\_data**

**group by extract(year from issue\_date),**

**extract(month from issue\_date)**

**order by extract(year from issue\_date),**

**extract(month from issue\_date))**

**select year,**

**mon,**

**100\*((avg\_interest\_rates - (lag(avg\_interest\_rates) over()))/(lag(avg\_interest\_rates) over()))**

**as percent\_difference**

**from monthly\_avg\_int\_rates\_data;**

|  |  |  |
| --- | --- | --- |
| **year** | **mon** | **percent\_difference** |
| 2021 | 1 | NULL |
| 2021 | 2 | 2.266167 |
| 2021 | 3 | 1.165866 |
| 2021 | 4 | -0.98988 |
| 2021 | 5 | 4.402446 |
| 2021 | 6 | 0.134188 |
| 2021 | 7 | -0.30149 |
| 2021 | 8 | 0.514808 |
| 2021 | 9 | -2.41461 |
| 2021 | 10 | 0.174039 |
| 2021 | 11 | -0.68533 |
| 2021 | 12 | 3.469546 |

* 1. **Average dti**

**select avg(dti) as average\_dti from bank\_loan\_data;**



* 1. **MTD Average dti**

**select avg(dti) as MTD\_avg\_dti from bank\_loan\_data**

**where extract(year from issue\_date)= (select extract(year from max(issue\_date)) from bank\_loan\_data) and**

**extract(month from issue\_date)= (select extract(month from max(issue\_date)) from bank\_loan\_data);**

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* 1. **Track average dti changes received month over month**

**with monthly\_avg\_dti\_data as(**

**select extract(year from issue\_date) as year,**

**extract(month from issue\_date) as mon,**

**avg(dti) as avg\_dti**

**from bank\_loan\_data**

**group by extract(year from issue\_date),**

**extract(month from issue\_date)**

**order by extract(year from issue\_date),**

**extract(month from issue\_date))**

**select year,**

**mon,**

**100\*((avg\_dti - (lag(avg\_dti) over()))/(lag(avg\_dti) over()))**

**as percent\_difference**

**from monthly\_avg\_dti\_data;**

|  |  |  |
| --- | --- | --- |
| **year** | **mon** | **percent\_difference** |
| 2021 | 1 | NULL |
| 2021 | 2 | 3.651107 |
| 2021 | 3 | -1.44462 |
| 2021 | 4 | 0.028348 |
| 2021 | 5 | 0.865271 |
| 2021 | 6 | -0.6747 |
| 2021 | 7 | 0.385346 |
| 2021 | 8 | 0.439388 |
| 2021 | 9 | -0.41476 |
| 2021 | 10 | 0.87633 |
| 2021 | 11 | -0.8323 |
| 2021 | 12 | 2.727291 |

**6.1 Good Loan Application**

**select**

**case**

**when loan\_status='Fully Paid' then 'Good Loan'**

**when loan\_status='Current' then 'Good Loan'**

**when loan\_status='Charged Off' then 'Bad Loan'**

**else 'Bad Loan' end as updated\_loan\_status,**

**count(id)**

**from bank\_loan\_data**

**group by updated\_loan\_status;**

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**6.2 Good and Bad Loan Application Percentage**

**SELECT**

**CASE**

**WHEN loan\_status = 'Fully Paid' THEN 'Good Loan'**

**WHEN loan\_status = 'Current' THEN 'Good Loan'**

**WHEN loan\_status = 'Charged Off' THEN 'Bad Loan'**

**ELSE 'Bad Loan'**

**END AS updated\_loan\_status,**

**COUNT(id) \* 100.0 / SUM(COUNT(id)) OVER () AS percent\_applications**

**FROM bank\_loan\_data**

**GROUP BY updated\_loan\_status;**

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**6.3 Good and Bad Loan Funded amount**

**select**

**case**

**when loan\_status='Fully Paid' then 'Good Loan'**

**when loan\_status='Current' then 'Good Loan'**

**when loan\_status='Charged Off' then 'Bad Loan'**

**else 'Bad Loan' end as updated\_loan\_status,**

**sum(loan\_amount)**

**from bank\_loan\_data**

**group by updated\_loan\_status;**

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**6.4 Good and Bad Loan Funded amount Percentage**

**SELECT**

**CASE**

**WHEN loan\_status = 'Fully Paid' THEN 'Good Loan'**

**WHEN loan\_status = 'Current' THEN 'Good Loan'**

**WHEN loan\_status = 'Charged Off' THEN 'Bad Loan'**

**ELSE 'Bad Loan'**

**END AS updated\_loan\_status,**

**sum(loan\_amount) \* 100.0 / SUM(sum(loan\_amount)) OVER () AS percent\_funded\_amount**

**FROM bank\_loan\_data**

**GROUP BY updated\_loan\_status;**

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**6.5 Good and Bad Loan total received amount**

**select**

**case**

**when loan\_status='Fully Paid' then 'Good Loan'**

**when loan\_status='Current' then 'Good Loan'**

**when loan\_status='Charged Off' then 'Bad Loan'**

**else 'Bad Loan' end as updated\_loan\_status,**

**sum(total\_payment)**

**from bank\_loan\_data**

**group by updated\_loan\_status;**

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**6.6 Good and Bad Loan total received amount Percentage**

**SELECT**

**CASE**

**WHEN loan\_status = 'Fully Paid' THEN 'Good Loan'**

**WHEN loan\_status = 'Current' THEN 'Good Loan'**

**WHEN loan\_status = 'Charged Off' THEN 'Bad Loan'**

**ELSE 'Bad Loan'**

**END AS updated\_loan\_status,**

**sum(total\_payment) \* 100.0 / SUM(sum(total\_payment)) OVER () AS percent\_funded\_amount**

**FROM bank\_loan\_data**

**GROUP BY updated\_loan\_status;**

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**7.1 Loan Status Grid View**

**with aggregated\_data as(**

**select loan\_status,**

**count(id) as total\_loan\_application,**

**sum(loan\_amount) as total\_funded\_amount,**

**sum(total\_payment) as total\_amount\_received,**

**avg(int\_rate) as average\_interest\_rate,**

**avg(dti) as average\_dti**

**from bank\_loan\_data**

**group by loan\_status),**

**aggregated\_MTD\_data as(**

**select loan\_status,**

**sum(loan\_amount) as MTD\_funded\_amount,**

**sum(total\_payment) as MTD\_amount\_received**

**from bank\_loan\_data**

**where extract(month from issue\_date)=(select extract(month from max(issue\_date)) from bank\_loan\_data)**

**and extract(year from issue\_date)=(select extract(year from max(issue\_date)) from bank\_loan\_data)**

**group by loan\_status)**

**select a.loan\_status,**

**a.total\_loan\_application,**

**a.total\_funded\_amount,**

**a.total\_amount\_received,**

**b.MTD\_funded\_amount,**

**b.MTD\_amount\_received,**

**a.average\_interest\_rate,**

**a.average\_dti**

**from aggregated\_data a**

**inner join**

**aggregated\_MTD\_data b**

**on a.loan\_status=b.loan\_status;**

