SQL LOAN APPLICATIONS QUERIES AND RESULTS

1. **Customer Demographics Overview**

```
SELECT
    AVG(Age) AS avg_age,
    MIN(Age) AS min_age,
    MAX(Age) AS max_age,
    COUNT(*) AS total_customers
FROM loan_applications;
```

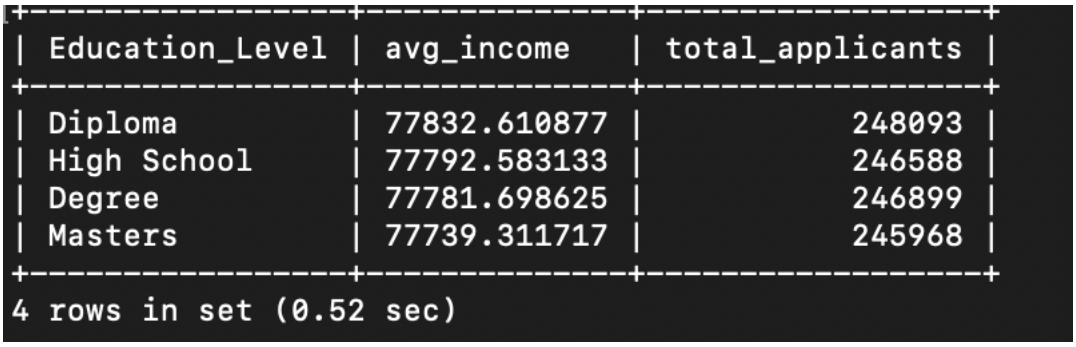
```
+---------+---------+---------+-----------------+
| avg_age | min_age | max_age | total_customers |
+---------+---------+---------+-----------------+
| 45.0000 |      21 |      69 |          987548 |
+---------+---------+---------+-----------------+
1 row in set (0.34 sec)
```

2. Income Distribution by Education Level

Income Distribution by Education Level

```
SELECT
    Education_Level,
    AVG(Income) AS avg_income,
    COUNT(*) AS total_applicants
FROM loan_applications
GROUP BY Education_Level
```

ORDER BY avg_income DESC;



Education_Level	avg_income	total_applicants
Diploma	77832.610877	248093
High School	77792.583133	246588
Degree	77781.698625	246899
Masters	77739.311717	245968

4 rows in set (0.52 sec)

3. Credit Score Analysis by Region

SELECT

Region,

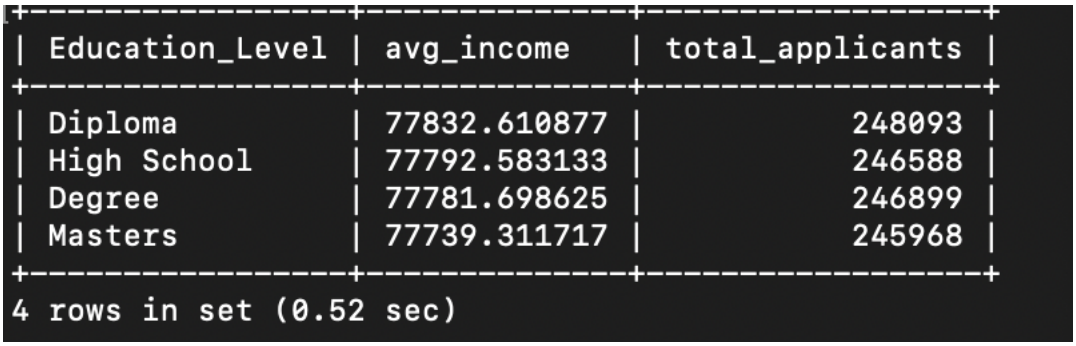
AVG(Credit_Score) AS avg_credit_score,

MIN(Credit_Score) AS min_score,

MAX(Credit_Score) AS max_score

FROM loan_applications

GROUP BY Region;



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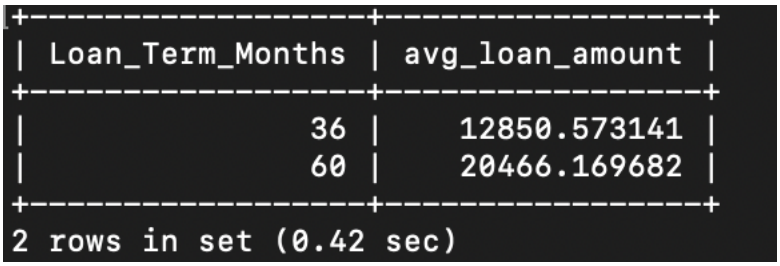
4 rows in set (0.52 sec)

4. Loan Amount vs Term Correlation

SELECT

Loan_Term_Months,

```
    AVG(Loan_Amount) AS avg_loan_amount
FROM loan_applications
GROUP BY Loan_Term_Months
ORDER BY Loan_Term_Months;
```



```
+------------------+-----------------+
| Loan_Term_Months | avg_loan_amount |
+------------------+-----------------+
|               36 |    12850.573141 |
|               60 |    20466.169682 |
+------------------+-----------------+
2 rows in set (0.42 sec)
```

5. Default Rate by Credit Score Range

```
SELECT
    CASE
        WHEN Credit_Score < 500 THEN 'Poor'
        WHEN Credit_Score BETWEEN 500 AND 650 THEN 'Fair'
        WHEN Credit_Score BETWEEN 651 AND 750 THEN 'Good'
        ELSE 'Excellent'
    END AS credit_band,
    COUNT(*) AS total_applicants,
    SUM(Defaulted) AS total_defaults,
    ROUND(SUM(Defaulted) * 100.0 / COUNT(*), 2) AS default_rate_percent
FROM loan_applications
GROUP BY credit_band;
```

```
+-------------+-----------------+---------------+----------------------+
| credit_band | total_applicants | total_defaults | default_rate_percent |
+-------------+-----------------+---------------+----------------------+
| Good        |          916399 |        190759 |                20.82 |
| Excellent   |           71149 |          6137 |                 8.63 |
+-------------+-----------------+---------------+----------------------+
2 rows in set (0.53 sec)
```

6. Total loans Approved vs rejected

```
SELECT
    Approval_Status,
    COUNT(*) AS total_applications
FROM loan_applications
GROUP BY Approval_Status;
```

```
+-----------------+--------------------+
| Approval_Status | total_applications |
+-----------------+--------------------+
| Fully Paid      |             790652 |
| Charged Off     |             196896 |
+-----------------+--------------------+
2 rows in set (0.51 sec)
```

7. Loan purpose Popularity

```
SELECT
    Loan_Purpose,
    COUNT(*) AS total_requests
FROM loan_applications
GROUP BY Loan_Purpose
ORDER BY total_requests DESC;
```

Loan_Purpose	total_requests
debt_consolidation	581979
credit_card	215679
home_improvement	65380
other	54258
major_purchase	20502
medical	10910
small_business	9722
car	9468
moving	6574
vacation	6448
house	5317
wedding	697
renewable_energy	613
educational	1

14 rows in set (0.50 sec)

8. Regional Loan demand

```
SELECT
    Region,
    COUNT(*) AS total_applications,
    SUM(Loan_Amount) AS total_loan_value
FROM loan_applications
GROUP BY Region
ORDER BY total_loan_value DESC;
```

Region	total_applications	total_loan_value
Limpopo	218332	3281393475.00
Northern Cape	175679	2648532000.00
Eastern Cape	146605	2141607100.00
Gauteng	93894	1397201125.00
Mpumalanga	86743	1286361450.00
Free State	81714	1216736625.00
North West	79086	1141332850.00
Western Cape	56422	799236400.00
KwaZulu-Natal	49073	698589375.00

9 rows in set (0.52 sec)

9. Customer Segmentation by Age and Marital Status

```
SELECT
    Marital_Status,
    CASE
        WHEN Age < 30 THEN 'Under 30'
        WHEN Age BETWEEN 30 AND 50 THEN '30-50'
        ELSE 'Over 50'
    END AS age_group,
    COUNT(*) AS total_customers
FROM loan_applications
GROUP BY Marital_Status, age_group
ORDER BY total_customers DESC;
```

Marital_Status	age_group	total_customers
Divorced	30-50	141286
Single	30-50	141273
Married	30-50	140939
Married	Over 50	127790
Divorced	Over 50	127596
Single	Over 50	127449
Divorced	Under 30	60469
Single	Under 30	60379
Married	Under 30	60367

9 rows in set (0.66 sec)

10. Default rate by Employment Status

```
SELECT
    Employment_Status,
    COUNT(*) AS total_applicants,
    SUM(Defaulted) AS total_defaults,
    ROUND(SUM(Defaulted) * 100.0 / COUNT(*), 2) AS default_rate_percent
FROM loan_applications
GROUP BY Employment_Status
ORDER BY default_rate_percent DESC;
```

Employment_Status	total_applicants	total_defaults	default_rate_percent
< 1 year	82682	17624	21.32
1 year	68299	14285	20.92
3 years	83933	17187	20.48
8 years	47894	9769	20.40
9 years	40127	8178	20.38
2 years	95421	19410	20.34
4 years	61908	12549	20.27
5 years	64500	12984	20.13
7 years	46643	9293	19.92
6 years	48385	9627	19.90
10+ years	347756	65990	18.98

11 rows in set (0.64 sec)