|  |
| --- |
| Personal |
| Finance |
|  |
| From Jan 2018-SEP 2019 |
| Using SQL |

# **INTRODUCTION**

This project was to Recognize and identifying spending patterns to improve personal finance and to make better spending decisions. For this purpose, data set used is compiled using transactions from Bank and Credit Card Statements to build the dataset for analyzing the financial health to improve personal financial decision-making. Also used a budget to calculate how much money is earned, spent, and saved.

For this analysis we have used SQL and written this report in Microsoft word

# **KEY FINDINGS**

Key Findings #1: Categories with maximum number of transactions were:

* Groceries
* Restaurants
* Credit Card Payments

Key Findings #2: Top three categories spent on were:

* Mortgage & Rent
* Home Improvement
* Utilities

Key Findings #3: Saving throughout this time was reduced by $2069.

# **ANALYSIS**

There is total 806 transactions during this period and these transactions are divided using 22 categories which include:

|  |  |  |
| --- | --- | --- |
| * Alcohol & Bars * Auto Insurance * Coffee Shops * Credit Card Payment * Electronics & Software * Entertainment * Utilities * Television | * Fast Food * Food & Dining * Gas & Fuel * Groceries * Haircut * Home Improvement * Internet * Shopping | * Mobile Phone * Mortgage & Rent * Movies & DVDs * Music * Paycheck * Restaurants |

Ideal Budget Set for the month as

|  |  |
| --- | --- |
| **Category** | **Budget** |
| Alcohol & Bars | 50.00 |
| Auto Insurance | 75.00 |
| Coffee Shops | 15.00 |
| Credit Card Payment | 1000.00 |
| Electronics & Software | 50.00 |
| Entertainment | 25.00 |
| Fast Food | 50.00 |
| Food & Dining | 100.00 |
| Gas & Fuel | 75.00 |
| Groceries | 150.00 |
| Haircut | 30.00 |
| Home Improvement | 250.00 |
| Internet | 75.00 |
| Mobile Phone | 90.00 |
| Mortgage & Rent | 1100.00 |
| Movies & DVDs | 50.00 |
| Music | 11.00 |
| Paycheck | 4000.00 |
| Restaurants | 150.00 |
| Shopping | 100.00 |
| Television | 15.00 |
| Utilities | 150.00 |

**Total Number of Transactions by month**

Total number of transactions by month was mostly less in 2019 compared to the transaction total by month in 2018.

Maximum number of transactions (72) in 2018 was made for groceries whereas in 2019 most of the transaction was for Credit Card Payment.

**Total number of transactions by categories.**

|  |  |  |
| --- | --- | --- |
| **College** | **New students** | **Graduating students** |
| Groceries | 72 | 33 |
| Restaurants | 49 | 32 |
| Credit Card Payment | 33 | 38 |
| Utilities | 36 | 27 |
| Shopping | 36 | 24 |
| Gas & Fuel | 33 | 19 |
| Home Improvement | 24 | 12 |
| Coffee Shops | 14 | 17 |
| Alcohol & Bars | 14 | 11 |
| Internet | 12 | 9 |
| Mobile Phone | 12 | 9 |
| Mortgage & Rent | 12 | 9 |
| Music | 12 | 9 |
| Movies & DVDs | 18 | NULL |
| Auto Insurance | 9 | 9 |
| Fast Food | 16 | NULL |
| Haircut | 7 | 6 |
| Television | NULL | 8 |
| Electronics & Software | NULL | 4 |
| Food & Dinning | 2 | NULL |
| Entertainment | 1 | NULL |

There were no transactions for Television, and Electronics and software categories in 2018. However, these categories have shown considerable increase in the transaction in 2019. On the other hand, transaction for Movies& DVDs, fast food, food & dining and entertainment had zero transactions in 2019.

**Top five transactions**

|  |  |  |  |
| --- | --- | --- | --- |
| **Category** | **Amount** | **Year** | **Month** |
| Home Improvement | 9200.00 | 2019 | 6 |
| Home Improvement | 8000.00 | 2018 | 5 |
| Mortgage & Rent | 1247.00 | 2018 | 1 |
| Mortgage & Rent | 1247.00 | 2018 | 2 |
| Mortgage & Rent | 1247.00 | 2018 | 3 |

**Saving**

If we look at total saving during this time, it is a negative number. This means there was decrease in saved amount.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Year** | **Total money spent** | **Total Income** | **Savings** | **Saving running total** |
| 2018 | 48414.00 | 52000.00 | 3586.00 | 3586.00 |
| 2019 | 47405.00 | 41750.00 | -5655.00 | -2069.00 |

**Standard deviation and Variation**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Category** | **Max** | **Min** | **standard deviation** | **Variance** |
| Home Improvement | 9200.00 | 6.00 | 1991.06649634239 | 3964345.79285714 |
| Credit Card Payment | 1900.00 | 9.00 | 386.197295831868 | 149148.351307847 |
| Electronics & Software | 331.00 | 21.00 | 169.483529189909 | 28724.6666666667 |
| Mortgage & Rent | 1247.00 | 1100.00 | 70.8805836802794 | 5024.05714285709 |
| Food & Dining | 63.00 | 14.00 | 34.6482322781408 | 1200.5 |
| Shopping | 212.00 | 3.00 | 33.8338245490488 | 1144.72768361582 |
| Groceries | 148.00 | 2.00 | 27.2894470338613 | 744.713919413919 |
| Restaurants | 131.00 | 3.00 | 23.3100743864372 | 543.359567901235 |
| Mobile Phone | 111.00 | 65.00 | 13.9208647788302 | 193.790476190476 |
| Utilities | 65.00 | 30.00 | 13.2041941233654 | 174.350742447517 |
| Alcohol & Bars | 49.00 | 6.00 | 11.5732450073434 | 133.94 |
| Fast Food | 56.00 | 7.00 | 11.4961950227021 | 132.1625 |
| Gas & Fuel | 41.00 | 4.00 | 8.04031602299455 | 64.6466817496229 |
| Movies & DVDs | 25.00 | 6.00 | 4.70988391958313 | 22.1830065359477 |
| Haircut | 30.00 | 19.00 | 3.04032724284569 | 9.24358974358969 |
| Coffee Shops | 12.00 | 1.00 | 2.09248527441794 | 4.37849462365591 |
| Internet | 75.00 | 69.00 | 1.30018313728349 | 1.69047619047633 |
| Television | 13.00 | 11.00 | 1.03509833901353 | 1.07142857142857 |
| Music | 10.00 | 10.00 | 0 | 0 |
| Auto Insurance | 75.00 | 75.00 | 0 | 0 |
| Entertainment | 9.00 | 9.00 | NULL | NULL |

The standard deviation is a measure that expresses how much variance or dispersion there is in a group of numbers. While a high standard deviation suggests that the values are dispersed over a wider range, a low standard deviation suggests that the values tend to be close to the mean (also known as the anticipated value) of the collection. The transaction value for Home Improvement can be seen to vary from $9200 maximum to $6 minimum and had highest standard deviation value.

**Total Spending by Month**

In total $3611 were supposed to be spent out of $4000 earned every month.

If we look at the spending by month in both years. Average spending is high than $4000 and total spending in 2019 is more than 2018.

There was a peak in total spending around 5th and 6th month of 2018 and 2019 year. This was due to large transactions in Home Improvement categories.

Percentage of income spent by month was increasing on average.

Top five categories with maximum spendings

|  |  |
| --- | --- |
| **Category** | **Spending By Category** |
| Credit Card Payment | 33005.00 |
| Mortgage & Rent | 24750.00 |
| Home Improvement | 19077.00 |
| Utilities | 2776.00 |
| Groceries | 2747.00 |

**Categories that have out spent the budget.**

|  |  |  |  |
| --- | --- | --- | --- |
| **Category** | **Number of times outspent** | **Maximum Spent** | **Budget** |
| Mortgage & Rent | 12 | 1247.00 | 1100.00 |
| Gas & Fuel | 8 | 149.00 | 75.00 |
| Restaurants | 7 | 289.00 | 150.00 |
| Shopping | 6 | 225.00 | 100.00 |
| Groceries | 6 | 327.00 | 150.00 |
| Home Improvement | 5 | 9200.00 | 250.00 |
| Alcohol & Bars | 4 | 85.00 | 50.00 |
| Electronics & Software | 2 | 352.00 | 50.00 |
| Fast Food | 2 | 97.00 | 50.00 |
| Utilities | 2 | 160.00 | 150.00 |
| Coffee Shops | 1 | 17.00 | 15.00 |
| Mobile Phone | 1 | 111.00 | 90.00 |

# **Conclusion**

Regularly keeping track of the expenditures might help to get a clear picture of where the money is going and where you'd prefer it to go. It is clear that most of the money is spent on Mortgage & rent, home improvement and credit card payment.