

The background features a light pink base with large, overlapping abstract shapes in orange and yellow. Stylized floral or leaf-like motifs in a darker pink are scattered across the design. Two thin white circles are also present, one in the upper left and one in the lower right.

# PERSONAL FINANCE TRACKER

Personal Finance Tracker  
made in Python via Google  
Colab



# BRIEF



In this project, I would serve as a financial advisor to a person wanting to manage their finances while renting a flat.



My job is to assist clients in understanding their spending habits and identifying areas for financial improvement.



In this project I analysed the expenses put into Google Colab and used Python to generate visualisations that would provide a clearer picture to my client.



I would then offer actionable insights to help the client optimise their budgets without sacrificing their finances.

```

import pandas as pd
import seaborn as sns
import matplotlib.pyplot as plt
import random
import numpy as np

categories = ['Groceries', 'Rent', 'Entertainment', 'Utilities', 'Transport', 'Dining']
dates = pd.date_range(start='2024-01-01', end='2024-01-31', freq='2D')
data = {
    'Date': np.random.choice(dates, 20),
    'Category': [random.choice(categories) for _ in range(20)],
    'Amount': [round(random.uniform(10, 500), 2) for _ in range(20)]
}

df = pd.DataFrame(data)

category_totals = df.groupby('Category')['Amount'].sum().reset_index()

sns.barplot(data=category_totals, x='Category', y='Amount', hue='Category', palette='muted', dodge=False)
plt.title('Total Expenses by Category')
plt.ylabel('Total Amount (£)')
plt.xlabel('Category')
plt.xticks(rotation=45)
plt.show()

df = df.sort_values('Date')
df['Cumulative Expenses'] = df['Amount'].cumsum()

sns.lineplot(data=df, x='Date', y='Cumulative Expenses', marker='o', color='b')
plt.title('Cumulative Expenses Over Time')
plt.ylabel('Cumulative Amount (£)')
plt.xlabel('Category')
plt.xticks(rotation=45)
plt.show()

df = df.sort_values('Date')
df['Cumulative Expenses'] = df['Amount'].cumsum()

sns.lineplot(data=df, x='Date', y='Cumulative Expenses', marker='o', color='b')
plt.title('Cumulative Expenses Over Time')
plt.ylabel('Cumulative Amount (£)')
plt.xlabel('Date')
plt.xticks(rotation=45)
plt.show()

plt.figure(figsize=(10, 6))
sns.scatterplot(data=df, x='Date', y='Amount', hue='Category', palette='muted', s=100)
plt.title('Expense Distribution by Date')
plt.ylabel('Amount (£)')
plt.xlabel('Date')
plt.xticks(rotation=45)
plt.legend(title='Category')
plt.show()

category_totals.set_index('Category', inplace=True)
plt.figure(figsize=(8, 8))
plt.pie(category_totals['Amount'], labels=category_totals.index, autopct='%1.1f%%', startangle=140, colors=sns
plt.title('Expense Proportion by Category')
plt.show()

df['Date'] = pd.to_datetime(df['Date'])

```

# CODE

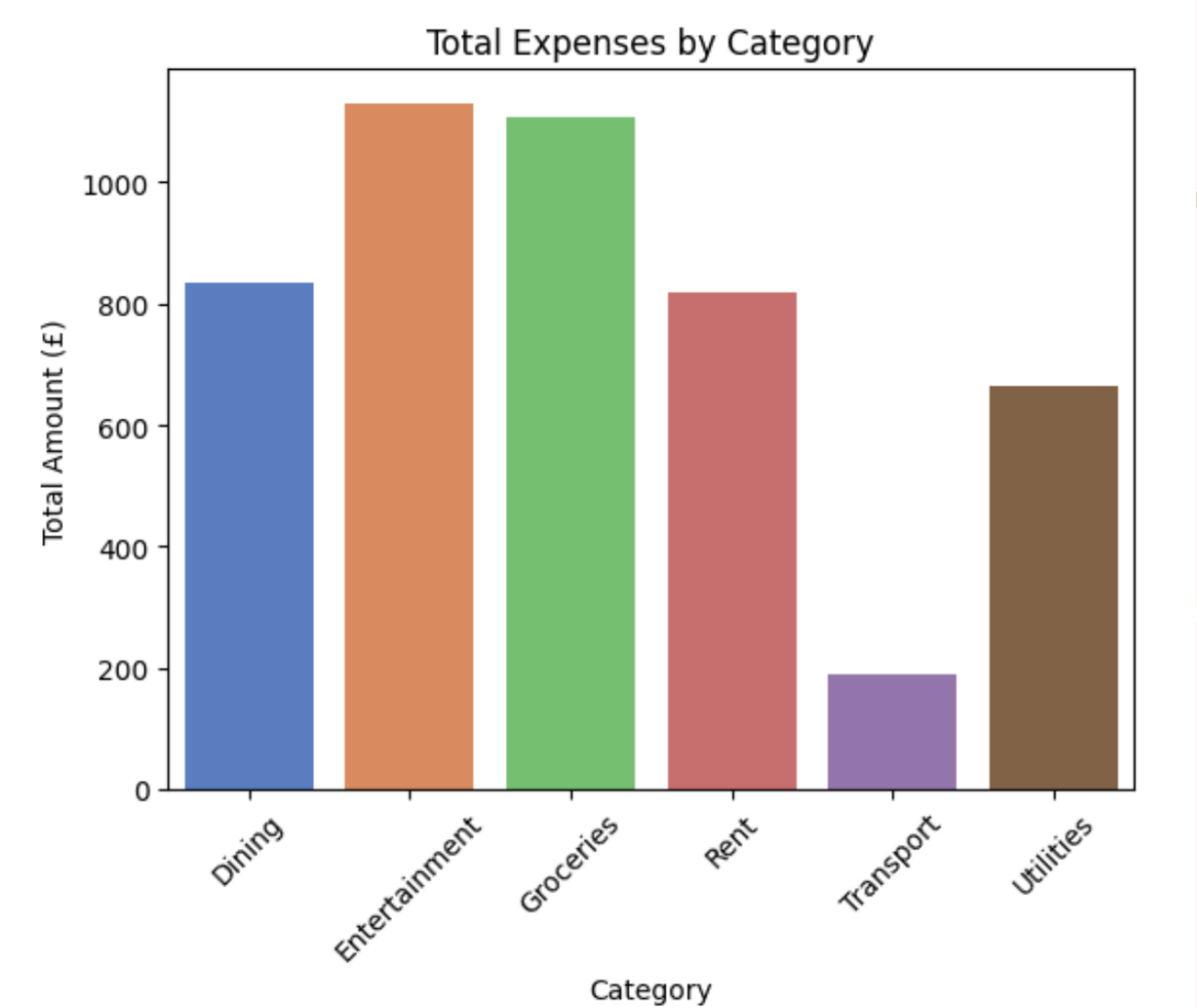
This code visualizes a personal finance tracker created in Google Colab.

It includes generating cumulative sums and creating visualizations using Seaborn and Matplotlib.

```

category_trends = df.groupby(['Date', 'Category'])['Amount'].sum().reset_index()
plt.figure(figsize=(12, 6))
sns.lineplot(data=category_trends, x='Date', y='Amount', hue='Category', marker='o', palette='muted')
plt.title('Expense Trends by Category Over Time')
plt.ylabel('Amount (£)')
plt.xlabel('Date')
plt.xticks(rotation=45)
plt.legend(title='Category')
plt.show()

```



# TOTAL EXPENSES BY CATEGORY

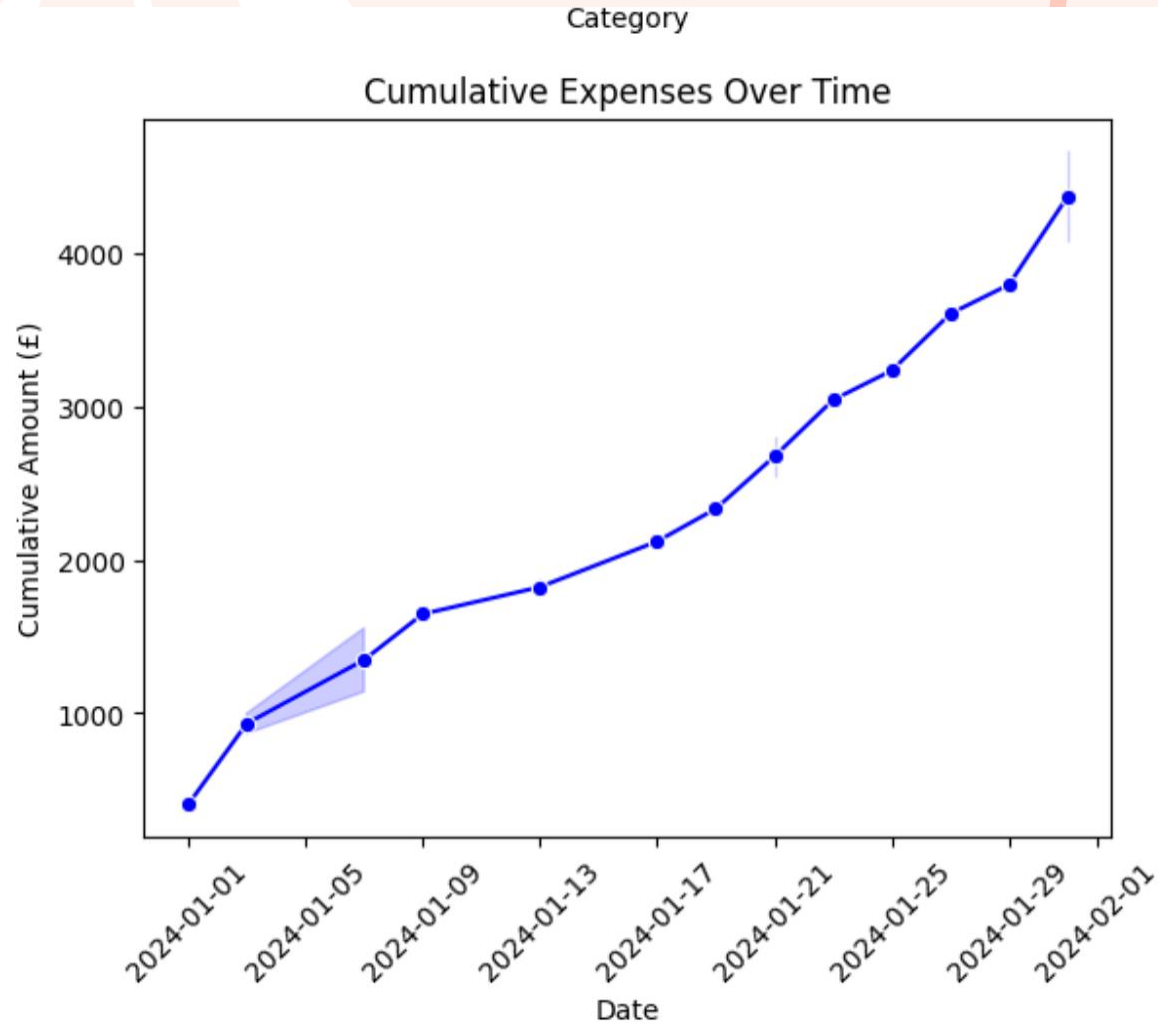
This graph highlights the total spending per category.

Entertainment and groceries dominate expenses, while transport incurs the least cost.

# CUMULATIVE EXPENSES OVER TIME

This graph shows how expenses accumulate over the month.

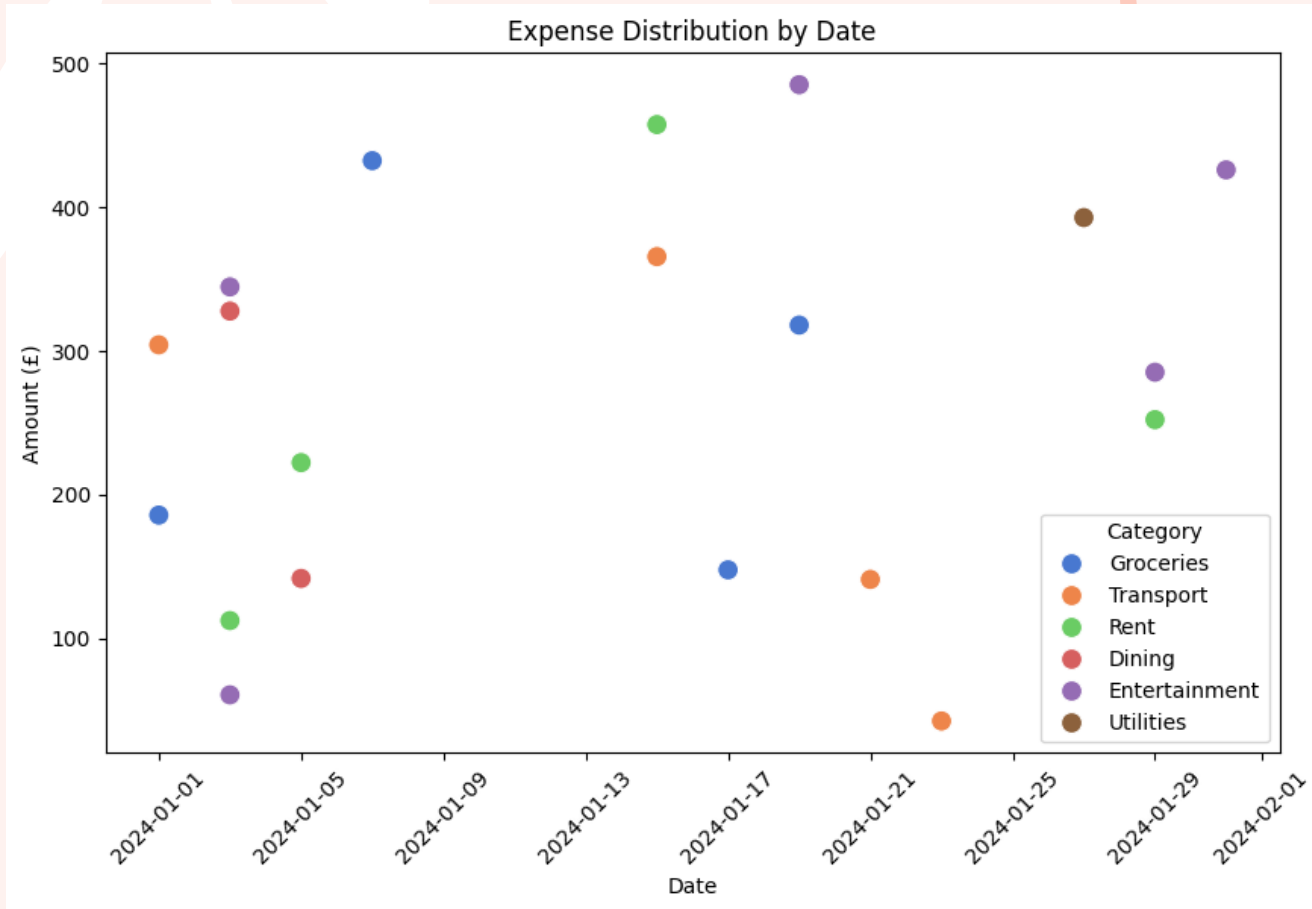
A steady increase highlights consistent spending with periodic spikes.



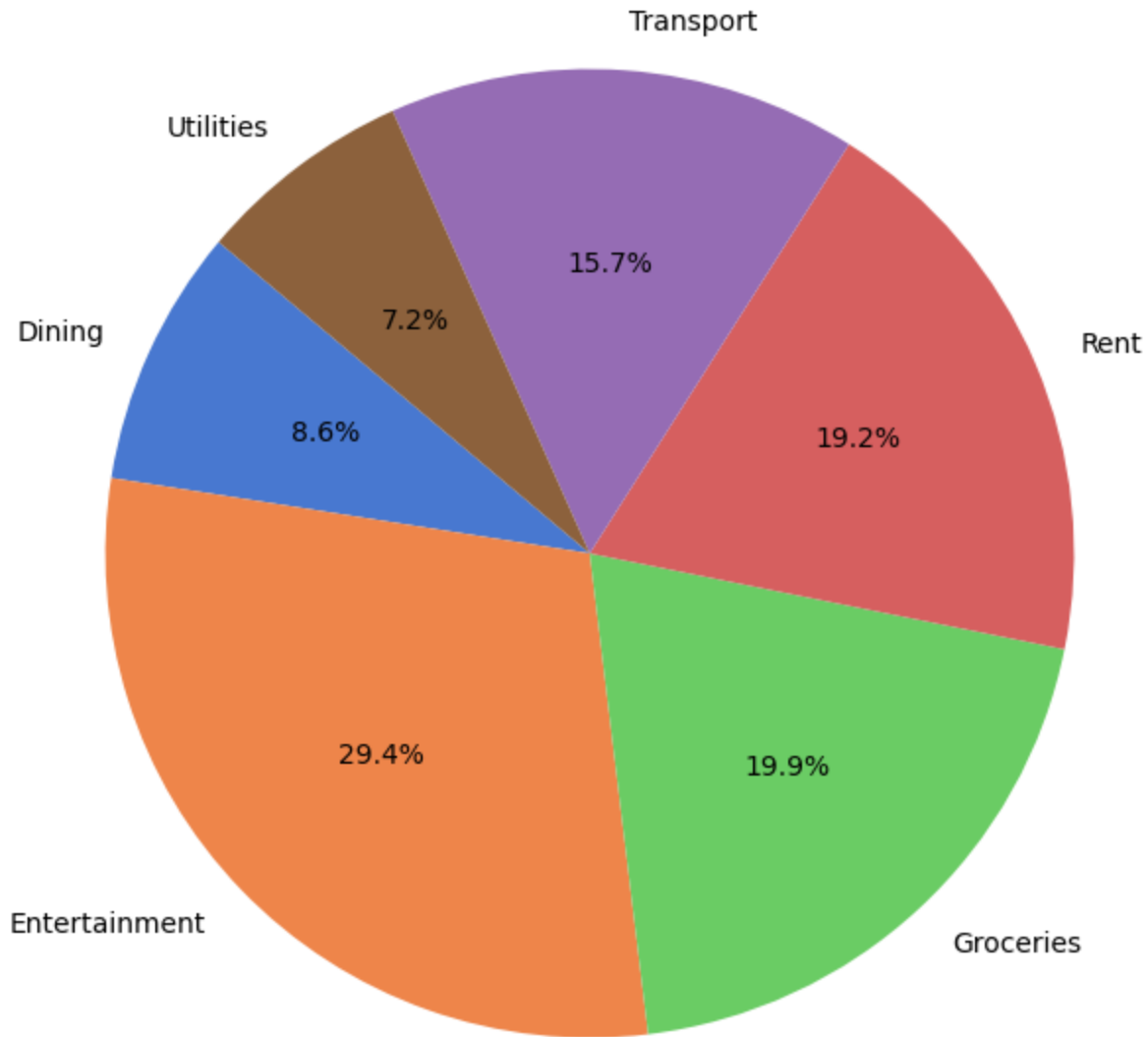
# EXPENSE DISTRIBUTION BY DATE

Individual transactions grouped by date and category reveal spending patterns.

Sporadic high spending is visible in categories like Rent.



Expense Proportion by Category



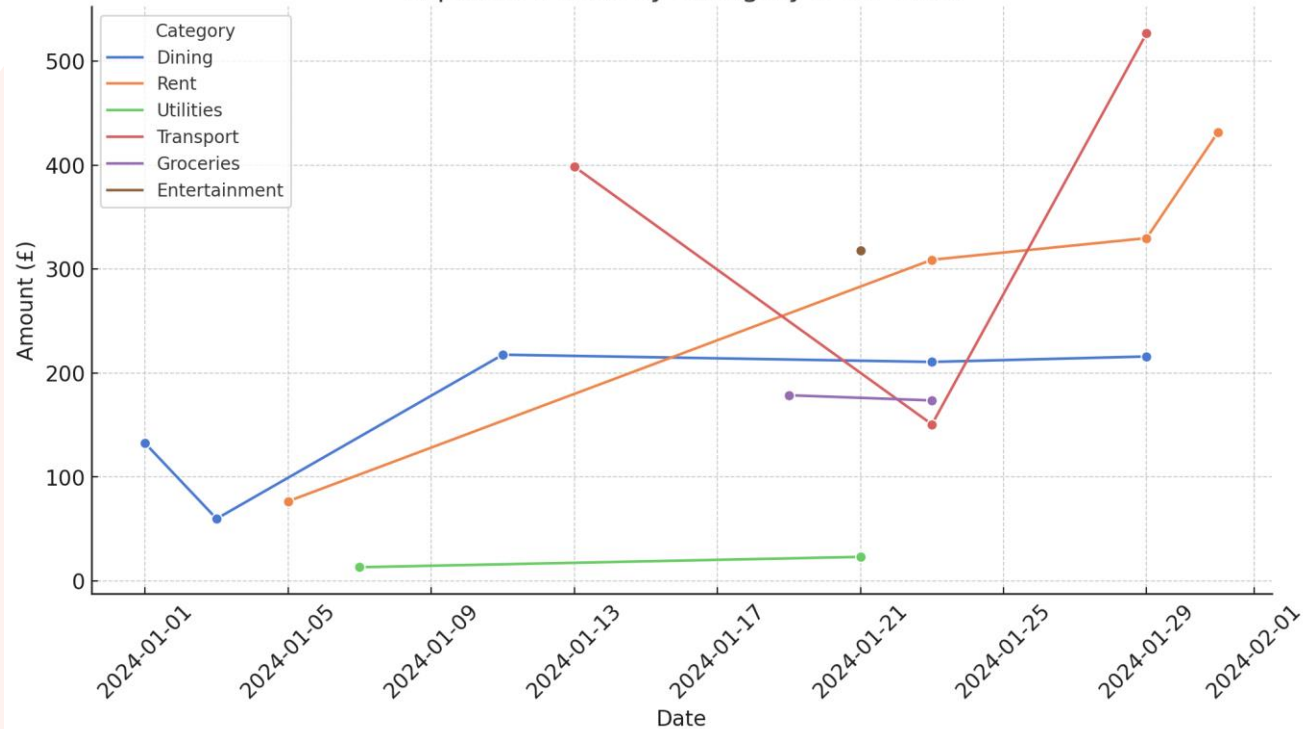
## EXPENSE PROPORTION BY CATEGORY

Rent and dining account for more than half of the total expenses, indicating these as critical categories to monitor.

# EXPENSE TRENDS BY CATEGORY OVER TIME

While overall expenses gradually increase, spikes in rent and utilities stand out, likely reflecting periodic bills.

Expense Trends by Category Over Time







# INSIGHTS

- Rent and dining collectively form the majority of expenses, suggesting these as areas to potentially cut back.
- Utilities and Rent expenses show periodic spikes, consistent with monthly billing cycles.
- Transport costs are minimal, showing efficient management in this category.

## Recommendation:

- *Focus on lowering entertainment and dining costs to save more.*
- *Monitor high-cost categories for better g monthly budgeting.*

