Report: Development of Toman Bike Share Dashboard

Overview of Toman Bike

Company Name: Toman Bike

Industry: Urban Mobility and Transportation

Business Model: Toman Bike Share operates a bike-sharing service that allows users to rent bicycles for short-term use. The company aims to provide a convenient, eco-friendly, and cost-effective transportation option for urban residents and visitors.

Problem Statement

Request for Development of Toman Bike Share Dashboard

Objective:

Develop a comprehensive and interactive dashboard for Toman Bike Share to facilitate data-driven decision-making by displaying key performance metrics.

Requirements:

1. Hourly Revenue Analysis: Visualize revenue generated on an hourly basis.
2. Profit and Revenue Trends: Track and display trends in profit and revenue over time.
3. Seasonal Revenue: Analyse and present revenue patterns across different seasons.
4. Rider Demographics: Provide insights into the demographics of riders, including rider type and other relevant attributes.

Design and Aesthetics:

- The dashboard should use company colours and be designed for ease of navigation and user-friendliness.

Data Source:

- Access to the necessary databases will be provided. If no database is available, one must be created.

Introduction

This report outlines the plan for developing a dashboard for Toman Bike Share. The objective is to create a tool that provides a comprehensive view of key performance metrics, aiding in informed decision-making. The dashboard will include analysis on hourly revenue, profit and revenue trends, seasonal revenue, and rider demographics. It will also be designed with user experience in mind, incorporating company colours and ensuring ease of navigation.

Workflow Overview

The workflow for developing the Toman Bike Share dashboard consists of the following steps:

1. Create a Database
2. Develop SQL Queries
3. Connect Power BI to Database (DB)
4. Build a Dashboard in Power BI
5. Answer the Analysis Question

Detailed Workflow

1. **Create a Database**

Objective: Set up a structured database to store and manage the data needed for analysis.

- **Tasks:**
    - Design database schema including tables for transactions, rider demographics, and revenue metrics.
    - Create tables with necessary fields (e.g., transaction timestamp, revenue amount, rider age, and gender).
    - Populate tables with existing data or integrate with existing data sources.

2. **Develop SQL Queries**

Objective: Write SQL queries to extract and aggregate the data required for analysis.

- **Tasks**:
    - Create queries to calculate hourly revenue.
    - Develop queries to analyze profit and revenue trends over time.
    - Write queries to assess seasonal revenue patterns.
    - Generate queries for rider demographics analysis.

3. Connect Power BI to Database (DB)

Objective: Establish a connection between Power BI and the database to enable data visualization.

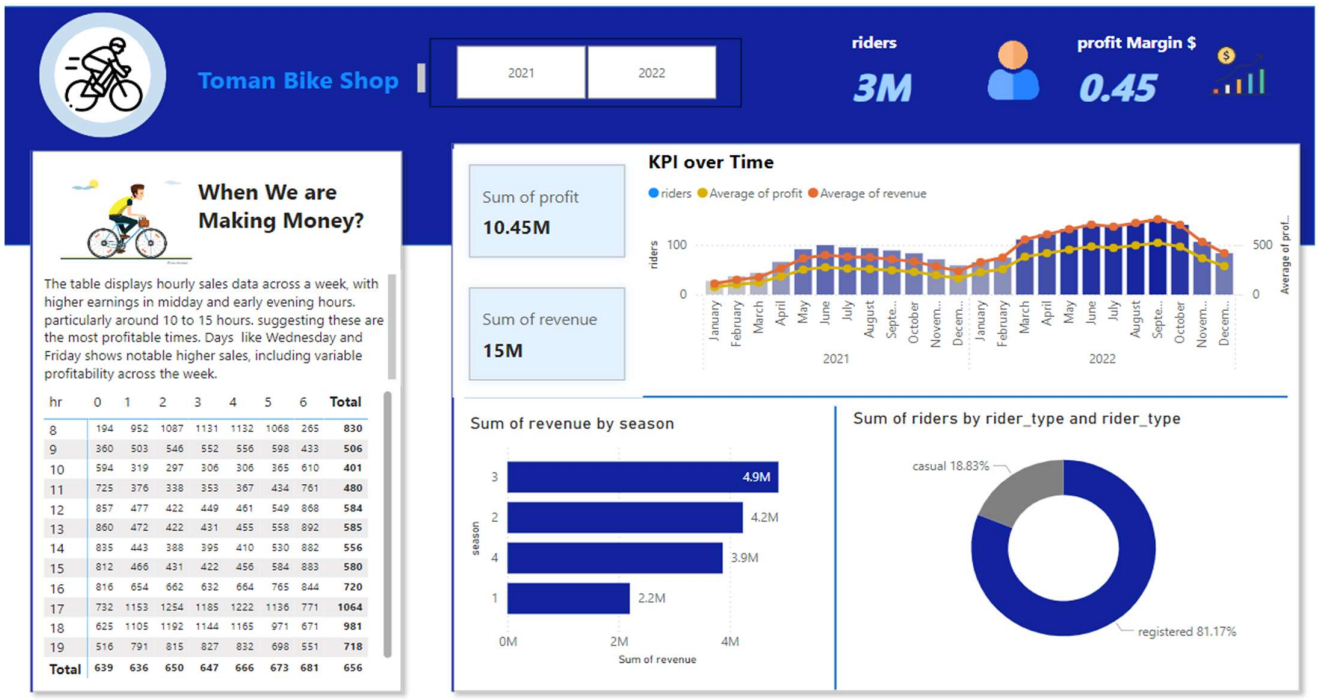
- **Tasks**:
    - Set up Power BI data source connections.
    - Configure data import settings.
    - Validate data connections and ensure data integrity.

4. Build a Dashboard in Power BI

Objective: Design and develop an interactive and visually appealing dashboard in Power BI.

- **Tasks**:
    - Create visualizations for hourly revenue analysis (e.g., line charts, heatmaps).
    - Develop time-series charts for profit and revenue trends.
    - Design seasonal revenue analysis graphs.
    - Build visualizations for rider demographics (e.g., pie charts, bar graphs).
    - Apply company colours and ensure ease of navigation.

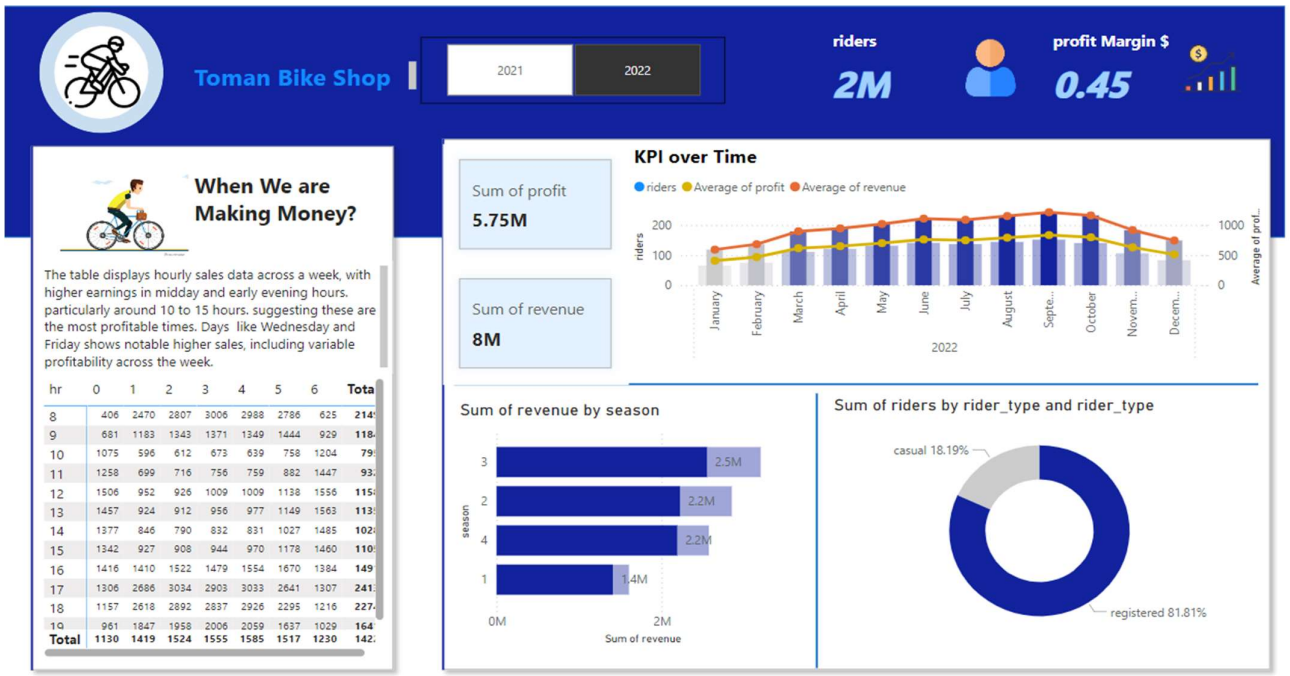
Over All Revenue Analysis Dashboard (2021-2022)



hr	0	1	2	3	4	5	6	Total
8	194	952	1087	1131	1132	1068	265	830
9	360	503	546	552	556	598	433	506
10	594	319	297	306	306	365	610	401
11	725	376	338	353	367	434	761	480
12	857	477	422	449	461	549	868	584
13	860	472	422	431	455	558	892	585
14	835	443	388	395	410	530	882	556
15	812	466	431	422	456	584	883	580
16	816	654	662	632	664	765	844	720
17	732	1153	1254	1185	1222	1136	771	1064
18	625	1105	1192	1144	1165	971	671	981
19	516	791	815	827	832	698	551	718
Total	639	636	650	647	666	673	681	656

Revenue Analysis Dashboard (2021)

Revenue Analysis Dashboard (2022)



5. Answer the Analysis Question

Objective: Use the dashboard to answer the analysis question and provide recommendations.

- **Tasks**:
    - Analyze the impact of a 25% price increase on revenue and demand.
    - Review trends and insights from the dashboard.
    - Provide a recommendation based on the analysis**.**

Analysis and Recommendations

Based on the data analysis:

- 25% Price Increase: A 25% increase in price has been considered. To fully assess the impact, the following factors should be analysed:
    - Revenue Impact: Compare projected revenue with current levels to determine potential gains.
    - Demand Impact: Consider the projected 64% increase in demand, which might mitigate revenue loss due to higher prices**.**
- **Recommendation:**
    - If the 64% increase in demand is accurate and the additional revenue from the price increase outweighs any potential loss in demand, the price increase could be beneficial.
    - However, conduct a sensitivity analysis to ensure that the demand increase is sustainable and accurately projected.

Conclusion

The development of the Toman Bike Share dashboard will offer a clear and insightful view of key performance metrics, including hourly revenue, profit and revenue trends, seasonal revenue, and rider demographics. The dashboard will be designed to facilitate easy navigation and data interpretation, helping in strategic decision-making.