

project paper on

PREPARING A DASHBOARD



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# Chapter 1

# Introduction

in today’s data-driven world, the ability to visualize and interpret complex information is crucial for effective decision-making across various sectors. Dashboards have emerged as powerful tools that aggregate and present key performance indicators (KPIs) and critical data in an intuitive format, allowing users to monitor trends, track progress, and identify opportunities for improvement. This project focuses on the development of an interactive dashboard designed to streamline data analysis and enhance accessibility for stakeholders.

The proliferation of data in organizations has made it increasingly challenging to extract meaningful insights. Traditional reporting methods often fall short in providing real-time updates and user-friendly interfaces, leading to delayed responses and uninformed decisions. By leveraging modern technologies and data visualization techniques, our project aims to create a dashboard that not only displays essential metrics but also facilitates user engagement through interactive features.

This paper outlines the objectives, methodologies, and expected outcomes of the dashboard project. We will explore the selection of appropriate data sources, the design principles for effective visualization, and the implementation of user-friendly interfaces. By integrating advanced analytics and visualization tools, we aim to empower users with actionable insights, ultimately driving informed decision-making and operational efficiency.

The significance of this project extends beyond mere data presentation; it represents a paradigm shift in how organizations can harness information to achieve strategic goals. As we delve into the components of dashboard development, we will highlight best practices and potential challenges, providing a comprehensive framework for future endeavors in data visualization.

## Methodology:

he development of an interactive dashboard involves a systematic approach that encompasses various stages, from requirement gathering to implementation and evaluation. This section outlines the key methodologies employed in the creation of the dashboard, ensuring a comprehensive and user-centered design process.

## 1. Requirement Gathering

**Objective:** To understand user needs and define the scope of the dashboard.

* **Stakeholder Interviews:** Conduct interviews with key stakeholders to identify their specific data needs, desired features, and pain points with current reporting methods.
* **Surveys and Questionnaires:** Distribute surveys to a broader audience to gather quantitative data on user preferences and requirements.
* **Use Case Development:** Create use cases that illustrate how different user groups will interact with the dashboard, highlighting essential functionalities and metrics.

## 2. Data Collection and Preparation

**Objective:** To ensure the availability and quality of data for the dashboard.

* **Data Source Identification:** Identify relevant data sources, such as databases, APIs, or spreadsheets, that contain the necessary information for the dashboard.
* **Data Cleaning:** Implement data cleaning processes to address inconsistencies, missing values, and errors, ensuring high-quality data for analysis.
* **Data Integration:** Aggregate data from multiple sources into a unified format, facilitating seamless visualization and analysis.

**3**. Design and Prototyping

**Objective:** To create a visually appealing and user-friendly interface.

* **Wireframing:** Develop wireframes to outline the layout and structure of the dashboard, focusing on the placement of key elements and navigation.
* **User Interface (UI) Design:** Design the UI, selecting color schemes, fonts, and visual elements that enhance readability and engagement.
* **Interactive Prototyping:** Use prototyping tools to create an interactive model of the dashboard, allowing stakeholders to provide feedback on functionality and design.

## 4. Development

**Objective:** To build the dashboard using appropriate technologies.

* **Technology Stack Selection:** Choose suitable technologies and frameworks (e.g., JavaScript, React, D3.js, Tableau) based on the project requirements and user preferences.
* **Dashboard Development:** Code the dashboard, implementing data visualizations, interactive features, and real-time data updates as per the specifications outlined during the design phase.
* **Testing and Debugging:** Conduct thorough testing to identify and resolve any issues related to functionality, performance, or user experience.

## 5. Deployment

**Objective:** To make the dashboard accessible to users.

* **Hosting Setup:** Select a hosting environment that ensures reliability and security for the dashboard.
* **User Training:** Provide training sessions for users to familiarize them with the dashboard's functionalities and features.
* **Documentation:** Create comprehensive documentation that includes user guides, technical specifications, and maintenance instructions.

## 6. Evaluation and Feedback

**Objective:** To assess the dashboard’s effectiveness and gather user feedback.

* **User Testing:** Conduct user testing sessions to evaluate the dashboard’s usability and functionality in real-world scenarios.
* **Feedback Collection:** Gather feedback from users through surveys or interviews to identify areas for improvement and additional features.
* **Iterative Improvements:** Based on user feedback, implement necessary changes to enhance the dashboard’s performance and usability.

## Conclusion

This methodology emphasizes a user-centered approach to dashboard development, ensuring that the final product meets the needs of its users while leveraging data effectively. By following these structured steps, we aim to create a robust and dynamic dashboard that facilitates informed decision-making and drives organizational success.

# Chapter two

## Product wise production

|  |  |
| --- | --- |
| **Row Labels** | **Sum of Total** |
| Bathroom Fittings | 823967 |
| Gas Stove | 1475522 |
| Kitchen Sink | 864394 |
| Taplon Tape | 741749 |
| Upvc Door | 756079 |
| Upvc Fittings | 1636602 |
| Upvc Pipe | 1556850 |
| Water Pump | 4799322 |
| Water Tank | 1532268 |
| **Grand Total** | **14186753** |

Here's a summary of the data you've provided, which represents the total sales or expenditures for various plumbing and construction items:

1. **Bathroom Fittings**: $823,967
   * These items contribute to the overall comfort and functionality of bathrooms.
2. **Gas Stove**: $1,475,522
   * A significant investment, highlighting the importance of cooking appliances in household expenditures.
3. **Kitchen Sink**: $864,394
   * Essential for kitchen functionality, this item reflects household priorities in modern kitchens.
4. **Taplon Tape**: $741,749
   * A crucial item for plumbing and repairs, indicating ongoing maintenance needs.
5. **Upvc Door**: $756,079
   * These doors are favored for their durability and energy efficiency.
6. **Upvc Fittings**: $1,636,602
   * Reflects a high demand for UPVC components, commonly used in plumbing and construction.
7. **Upvc Pipe**: $1,556,850
   * A major category, underscoring the necessity for reliable piping solutions in construction.
8. **Water Pump**: $4,799,322
   * The highest expenditure, indicating a strong reliance on effective water management systems.
9. **Water Tank**: $1,532,268
   * Essential for water storage, this item plays a key role in water supply systems.

**Grand Total: $14,186,753**

* This total indicates substantial investment in plumbing and construction materials, reflecting both the necessity of these items in homes and possibly larger projects in commercial or industrial sectors.

Overall, the data emphasizes a focus on water management and plumbing infrastructure, with a significant portion allocated to water pumps and UPVC fittings and pipes.

# Chapter Three

## Date wise production

* **High Performers**: Khulna is consistently the highest contributor, particularly in November and January. November stands out with over $4 million, suggesting a peak in demand or significant project activity.
* **Fluctuations**: There are noticeable fluctuations in monthly totals, with January and November being particularly high, possibly reflecting seasonal trends or project cycles.
* **Regional Variability**: Other regions like Barishal, Dhaka, Chittagong, and Mymensingh show varying levels of contributions, with Barishal showing relatively strong performance in November.

Overall, this dataset illustrates significant activity and investment across various regions throughout the year, indicating a robust market landscape.

# Chapter Four

## Area wise Production

|  |  |
| --- | --- |
| **Row Labels** | **Count of Total** |
| Barishal | 1703 |
| Chittagong | 1665 |
| Dhaka | 2355 |
| Khulna | 3603 |
| Mymensingh | 674 |
| **Grand Total** | **10000** |

Here’s a summary of the count of items or transactions recorded for various regions, totaling 10,000:

**Counts by Region**

1. **Barishal**: 1,703
   * Represents a moderate volume of activity in this region, suggesting steady demand.
2. **Chittagong**: 1,665
   * Similar to Barishal, Chittagong has a slightly lower count, indicating consistent but perhaps lesser engagement compared to larger markets.
3. **Dhaka**: 2,355
   * As the capital and a major urban center, Dhaka shows a significant volume of transactions, reflecting its larger population and economic activity.
4. **Khulna**: 3,603
   * The highest count among the regions, indicating robust demand and possibly more extensive infrastructure or project activity.
5. **Mymensingh**: 674
   * This region has the lowest count, which might suggest less market activity or a smaller scale of projects compared to the other areas.

**Overall Insights**

* **Dominance of Khulna**: Khulna stands out as the primary region in terms of transaction volume, potentially highlighting its importance in the market.
* **Urban vs. Rural Dynamics**: Dhaka’s high count reflects its status as a bustling urban center, while Mymensingh’s lower count may indicate a more rural or less industrialized area.
* **Balanced Distribution**: The data shows a fairly balanced distribution across the other regions, indicating diverse market activity, though Khulna’s dominance is clear.

**Grand Total: 10,000**

* This total signifies a significant level of transactions across these regions, providing insight into the market's overall engagement and reach. The data suggests opportunities for growth in areas like Mymensingh while recognizing Khulna's strong market presence.

# Chapter Five

## Area wise sales unit

|  |  |
| --- | --- |
| **Row Labels** | **Count of Sales Units** |
| Barishal | 1703 |
| Chittagong | 1665 |
| Dhaka | 2355 |
| Khulna | 3603 |
| Mymensingh | 674 |
| **Grand Total** | **10000** |

Here's a summary of the sales unit counts for various regions, totaling 10,000 units:

**Sales Units by Region**

1. **Barishal**: 1,703 units
   * Represents a solid level of sales, indicating a consistent demand in this region.
2. **Chittagong**: 1,665 units
   * Similar to Barishal, with slightly fewer units sold, reflecting steady market activity.
3. **Dhaka**: 2,355 units
   * As the largest urban area, Dhaka shows a significant volume of sales, indicating strong market demand.
4. **Khulna**: 3,603 units
   * The highest number of sales units, suggesting Khulna is a key market with robust sales activity.
5. **Mymensingh**: 674 units
   * The lowest sales count, which may reflect limited market engagement or a smaller population base.

**Overall Insights**

* **Khulna's Dominance**: Khulna stands out with the highest sales volume, indicating a strong market presence or demand for products/services.
* **Urban Centers' Performance**: Dhaka shows a significant count, aligning with its role as a major economic hub, while Barishal and Chittagong demonstrate healthy sales figures.
* **Growth Opportunities**: Mymensingh’s lower sales count presents potential opportunities for growth and expansion in that region.

**Grand Total: 10,000 units**

* This total reflects a robust level of sales across these regions, indicating healthy market engagement and potential for future development. The data highlights the varying levels of activity and opportunity across different areas, with a clear emphasis on Khulna's leading position.

# Chapter Six

## Dashboard

**Sales Dashboard Description**

**Overview:** The Sales Dashboard is an interactive tool designed to provide real-time insights into sales performance across multiple regions, including Barishal, Chittagong, Dhaka, Khulna, and Mymensingh. It aggregates data to visualize trends, compare performance, and facilitate data-driven decision-making.

**Key Features:**

1. **Sales Overview:**
   * A summary section displaying total sales units (10,000) alongside key metrics such as total revenue, average sales per region, and sales growth percentages.
2. **Regional Performance:**
   * A visual representation (e.g., bar chart or pie chart) illustrating the distribution of sales units by region. This section highlights Khulna as the leading market with 3,603 units, followed by Dhaka with 2,355 units, and provides insights into each region's contributions.
3. **Monthly Trends:**
   * A line graph tracking sales performance over time, allowing users to identify seasonal patterns and trends in consumer behavior. Users can filter by month to analyze performance fluctuations.
4. **Product Performance:**
   * A detailed breakdown of sales by product category (if applicable), showcasing which products are driving sales in each region. This feature helps in understanding market preferences.
5. **Comparison Metrics:**
   * A side-by-side comparison of current sales data against historical performance, enabling users to assess growth or decline in specific regions and make strategic decisions accordingly.
6. **Growth Opportunities:**
   * An area highlighting regions with the potential for growth, particularly Mymensingh, where marketing efforts could be increased to boost sales.
7. **Interactive Filters:**
   * Users can apply filters to view data by region, time period, or product category, allowing for personalized insights tailored to specific interests or needs.
8. **Key Performance Indicators (KPIs):**
   * Display of critical KPIs such as sales targets, conversion rates, and customer acquisition costs, providing a comprehensive view of sales effectiveness.

## Conclusion:

The Sales Dashboard serves as a powerful tool for stakeholders to monitor sales performance, uncover insights, and inform strategic decisions. By visualizing data in an accessible manner, the dashboard enhances understanding of market dynamics and aids in driving business growth.

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