Chiropractic Scheduling and Management System Prototype

Enhancing Resource Optimization and Decision-Making for Multi-Location Practices

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Introduction to the Prototype

- **Objective:** Optimize scheduling, enhance patient satisfaction, and reduce missed revenue opportunities.
- **System Overview:** Combines predictive analytics, data management, and software systems for operational efficiency.
- **Core Focus Areas:**
  - Identify high-demand slots and locations.
  - Capture unmet demand to inform staffing and scheduling decisions.

Key Challenges in Chiropractic Scheduling

- **Issues Faced by Multi-Location Practices:**
  - Fluctuating demand and inefficient scheduling.
  - Missed revenue opportunities.
  - Patient dissatisfaction due to unavailability of preferred slots.
- **Goal:** Provide data-driven insights to resolve these challenges.

Prototype Development Approach

- **Data Generation:** Simulate synthetic data reflecting demand patterns and preferences.
- **Algorithms:**
  - Predict slot availability.
  - Assess revenue impact.
  - Classify missed opportunities.
- **System Integration:** Deliver actionable insights to decision-makers.

How the System Works

- **Input:** Customer preferences and system availability.
- **Analytics:**
  - Predict high-demand periods.
  - Analyze unmet demand and revenue impact.
- **Insights:** Automated reports for management.
- **Feedback Loop:** Refine scheduling based on insights.

Integration of Core Areas

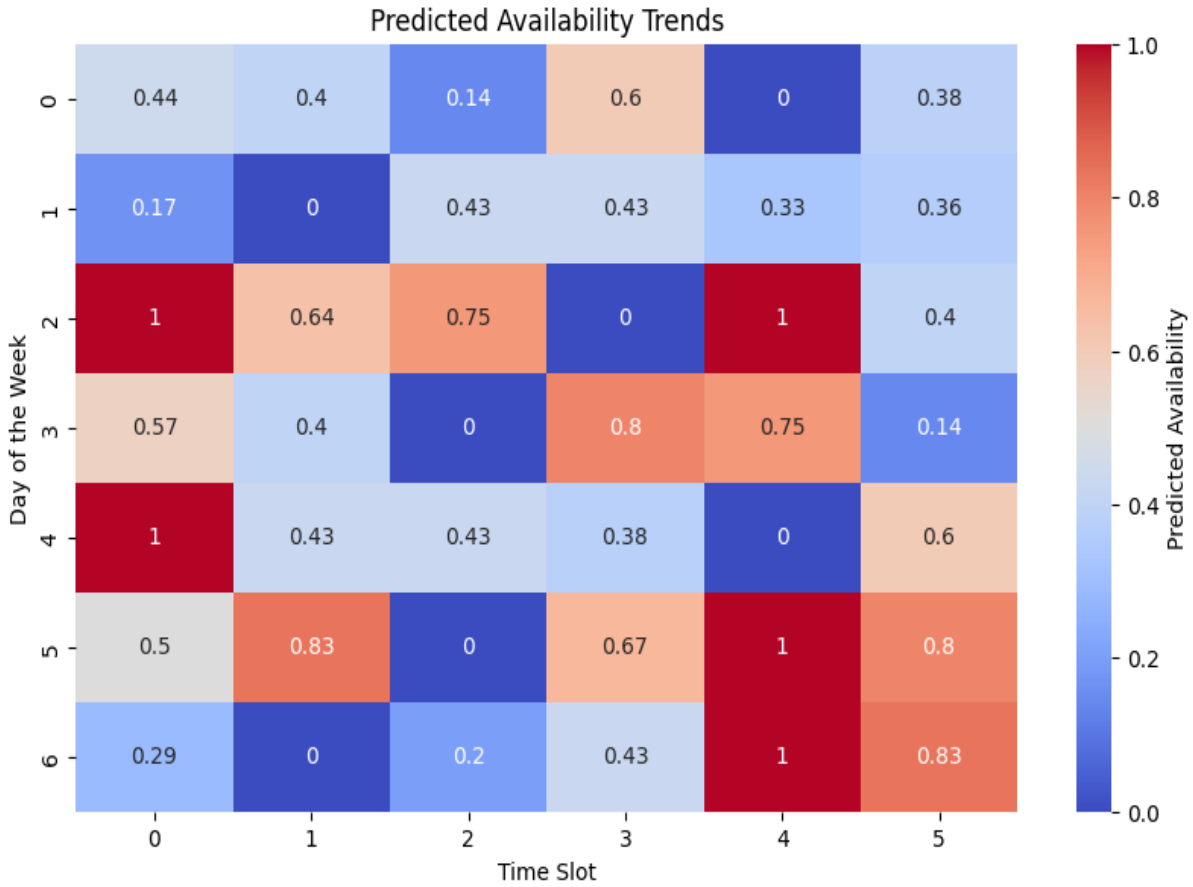
- **Data Management (DM):** Captures customer preferences and identifies unmet demand.
- **Software Systems (SS):** Implements algorithms for predictive analytics.
- **Business Analytics (BA):** Analyzes patterns in demand and financial impact.

Prototype Insights and Findings

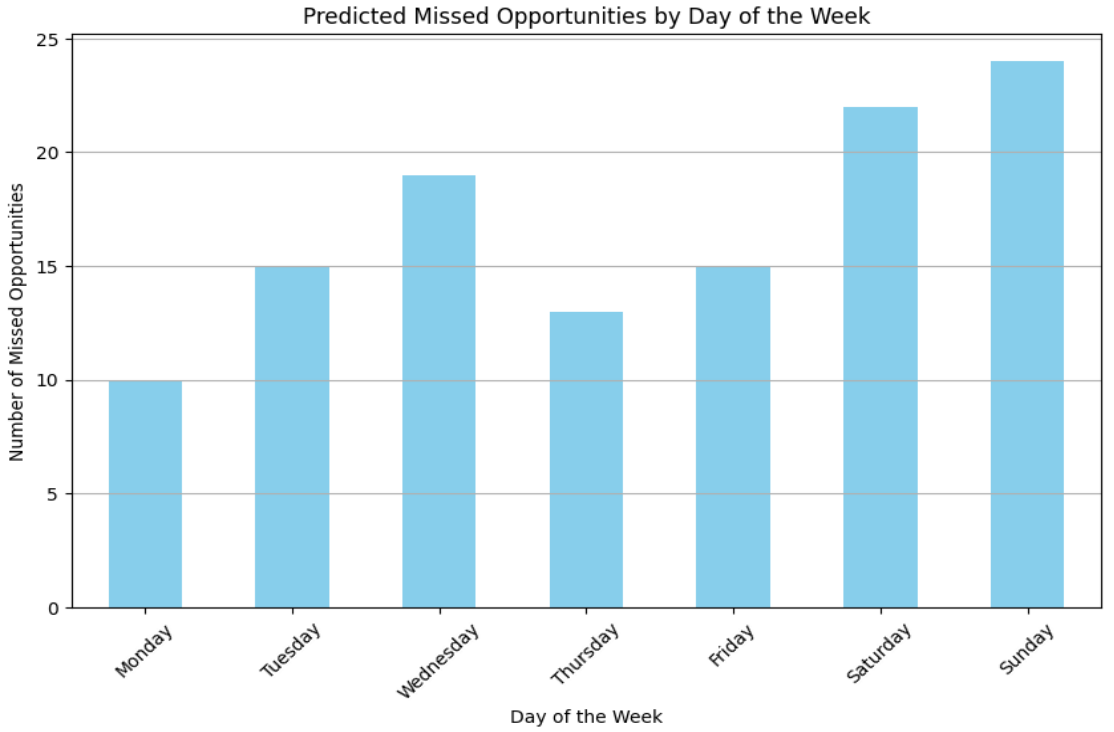
- **High-Demand Slots:** Pinpoints peak periods needing extra staffing.
- **Revenue Impact**: Highlights the financial implications of missed opportunities, estimated at $18,000.
- **Missed Opportunities:** Identifies unmet demand trends by day and time.

Insights Visualized

Heatmap: Predicted availability trends by day and time.



Bar Chart: Missed opportunities by day of the week.



Recommendations Based on Insights

- Adjust chiropractor scheduling to prioritize high-demand slots and reduce unmet opportunities.
- Reevaluate staffing levels to reduce unmet demand.
- Use insights to refine scheduling strategies during peak periods.

Next Steps for Full System Development

- Integrate real-world data for model validation.
- Enhance security with encryption for sensitive insights.
- Expand functionality to include:
  - Real-time updates.
  - Interactive interfaces for patients and staff.

Key Takeaways

- Demonstrates the potential of predictive analytics to optimize scheduling.
- Integrates multiple curriculum areas into a cohesive solution.
- Future iterations will focus on real-world data and expanded system capabilities.
- The prototype lays the foundation for scalable, data-driven decision-making systems.

Thank You

- Thank you for watching this presentation.
- I hope it has provided valuable insights into the potential of this prototype.