Research Plan

Project Name or Identification

CDI - Viz Dashboard

Prepared by:

Montana Data Consultants

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Introduction

On behalf of Morton Analytics, Montana Data Consultants will be building a data visualization dashboard containing information about chronic diseases and chronic disease indicators. This dashboard will be publicly available and used by Morton Analytics in the bidding process for potential clients as a representative of services available. Three categories of research will happen for this project: content research, design research, and technical research. This plan will help form an appropriate technology strategy and acquire the basic public health knowledge necessary for the project.

Research

Within the three research categories…

Content Research

- Gather information on prevalent chronic disease types (respiratory, cardiac, etc.): Research common chronic diseases, their causes, risk factors, prevalence rates, mortality rate, disability-adjusted life years, risk factor prevalence, and health-related quality of life.
- Identify relevant chronic disease indicators: Determine key indicators used to measure and monitor chronic diseases such as prevalence rates and incidence rates.
- Public health and disease-specific terminology

Design Research

- UI/UX best practices: Research design principles for effective data visualization and user interface design, considering accessibility and user engagement.
- Competitive analysis: Analyze existing data visualization dashboards focusing on the healthcare industry to identify design trends, strengths, and weaknesses.
- Present the positive aspects of the research findings (e.g. successful outcomes, promising trends, or beneficial implications) and the negative aspects or challenges identified in the research (e.g. limitations, unexpected obstacles, or unfavorable trends).
- Reflect on the positives and negatives identified in the findings section and recommend the best alternative while taking into consideration the potential risks and benefits of each alternative.

Technical Research

- Software
- Packages
- Coding languages
- Hosting platforms
- Technology platforms: Investigate suitable technologies and platforms for building the dashboard, considering factors like compatibility and ease of maintenance.
- Analytics: Investigate algorithms for analyzing health data to identify patterns.

Research Plan

Technical and Design Research Plan

The research responsibility will fall primarily on the individual task owners. For example, data analytics-related research (plugins, coding languages, types of analysis, etc.) will be the responsibility of the data analysts. Morton Analytics will be consulted for technology research and decision making. All research will be completed by March 16.

All technology decisions should be communicated to team members and Morton Analytics.

Research Questions

Questions will be first asked among team members. If they cannot find adequate information, the problem can be escalated up to Morton Analytics, Dr. Clouse, or any of the mentors listed in the Technology Plan.

Protocol for Evaluating Information Systems for a Data Analytics Capstone Project

This protocol outlines a framework for evaluating various information systems (IS) commonly used in data analytics projects. This framework can be applied to languages, text editors, plugins, data visualization tools, and hosting methods within the context of a graduate business program capstone project.

1. Define Evaluation Criteria:

    Technical Capabilities:

- Functionality: Does the IS offer the necessary features and functionalities for your specific project needs? How efficient and fast is the IS in terms of processing data, handling complex tasks, and responsiveness?
- Integration: Does the IS integrate seamlessly with other tools and software you plan to use?

    Usability:

- User Interface (UI): Is the UI intuitive, user-friendly, and easy to learn for individuals with varying levels of technical expertise?
- Documentation: Is comprehensive and accessible documentation available for learning and troubleshooting?
- Community Support: Does the IS have a supportive community offering resources, tutorials, and forums for assistance?

    Business Considerations:

- Cost: What are the licensing fees, subscription costs, or any other associated financial expenses?

- Vendor Support: What level of support does the vendor offer, including technical assistance, training, and updates?

2. Weighting the Criteria:

Criteria	**Functionality**	**Integration**	**UI**	**Documentation**	**Community Support**	**Vendor Support**
Weight	.3	.2	.15	.15	.1	.1
Score (1-5)						

3. Information Gathering:

- Research individual IS options: Explore available options within each category (languages, text editors, etc.) and gather information about their features, functionalities, and specifications.
- Consult online resources: Utilize online reviews, user forums, and vendor websites to gain insights into user experiences, performance benchmarks, and potential limitations.
- Consider expert opinions: Seek guidance from professors, advisors, or industry professionals familiar with different information systems and their suitability for data analytics projects.

4. Evaluation Process:

- Develop evaluation matrix: Create a matrix using your defined criteria and assigned weights. Populate the matrix with relevant information for each IS option being considered.
- Score each IS: Based on the gathered information and your understanding of the project requirements, assign scores to each IS option for each criterion using a standardized scale (e.g., 1-5).
- Calculate weighted scores: Multiply each score by its corresponding weight and sum the products for each IS option. This will provide a final weighted score for each option.

Additional Considerations:

- Pilot testing: For critical decisions, consider conducting pilot tests with shortlisted IS options to gain hands-on experience and assess their real-world performance within your specific project context.

- Flexibility: Remain adaptable throughout the evaluation process. New information or unforeseen challenges might necessitate revisiting your criteria, weighting, or even reopening the evaluation for alternative options.