

GUIDELINES FOR CREATING THE INITIAL DOCUMENT: HEART DISEASE PREDICTION PROJECT.

Initiating the Project

- 1. List all the stakeholders for the heart disease prediction case study:**
 - Identify all the individuals, groups, or organizations that have a stake in the heart disease prediction project.
- 2. Understand the different stakeholders for your case study:**
 - Analyze the roles and responsibilities of each stakeholder.
- 3. Understand and list the relationship between the case study and the stakeholders:**
 - Define how the stakeholders interact with the project, their influence, and their expectations.
- 4. Business goals and target users:**
 - Identify the primary business objectives of the heart disease prediction model.
 - Specify the target users (e.g., healthcare providers, patients, health organizations).
- 5. Key features to portray:**
 - What are the main functionalities of the heart disease prediction model?
 - Example: Real-time prediction, user-friendly interface, accuracy, and personalized risk assessment.
- 6. Challenges in the case study:**
 - Identify and list the challenges that might arise in the heart disease prediction project.
 - Example: Lack of data, data quality issues, privacy concerns, etc.
- 7. Practical need for the project:**
 - Why is this project necessary in a real-world context?
 - Example: Early detection of heart disease can save lives and improve health outcomes.

Alternatives and Competitors

- 8. Suggest alternatives where possible:**
 - Are there different methods or technologies that could be considered for heart disease prediction?
- 9. Competitor analysis:**
 - How does your project differ from others?

- How can your heart disease prediction model provide an edge over competitors in terms of accuracy, speed, or usability?

Risk and Risk Management

10. Key areas of risk and solutions:

- Identify key risks in the project (e.g., data privacy, model accuracy).
- Provide approaches to control or mitigate these risks.

11. Managing scope requests from clients:

- How will you handle additional scope requests from clients?

12. Preventing project failure:

- What measures will you take to avoid project failure? Example: Ensuring accurate data, involving stakeholders regularly, and maintaining flexibility.

Investigation, Design, and Technology Selection

13. Areas for investigation, solution design, and resource requirements:

- List the areas that need further research.
- Identify the necessary resources (e.g., data, algorithms, hardware) for solution development.

14. Available technologies and design comparison:

- Analyze the available technologies for heart disease prediction.
- Compare the pros and cons of different machine learning models and tools.

15. Technology choice justification:

- Justify your choice of technology for the project.
- Explain why the chosen method (e.g., XGBoost, Random Forest, Neural Networks) performs better than alternatives.

Breakdown Structure and Best Practices

16. Deconstructing the problem:

- Break down the heart disease prediction problem into smaller components: data collection, preprocessing, model development, testing, and deployment.

17. Discussing best practices:

- Outline the best practices in model development, testing, and deployment.
- Example: Using cross-validation, hyperparameter tuning, and continuous monitoring.

Defining Goals and Measuring Success

18. Project goals and success criteria:

- Clearly define the goals of the project (e.g., accuracy of 90% in heart disease prediction).
- Define the criteria to measure the project's success (e.g., feedback from healthcare professionals).

19. Client satisfaction and business alignment:

- How will you ensure that the final model meets the client's business needs?
- Discuss user feedback, accuracy improvements, and model usability.

Benefits and Business Case

20. Linking benefits to business case:

- Relate the benefits of heart disease prediction (e.g., early diagnosis, better patient care) to the business case.
- Why should this project proceed from a business perspective?

21. Measurement and metrics:

- Define key metrics for project success: accuracy, precision, recall, F1 score, and user adoption.

Understanding Vital Business Functions

22. Importance of listed features:

- Create a document explaining why each feature of the heart disease prediction model is vital for business operations.

23. Release and deployment:

- Understand and outline the release and deployment process, including version control, continuous integration, and deployment pipelines.

Project Objectives and Outcomes

24. Objectives:

- List the main objectives (e.g., build a predictive model with >90% accuracy, provide a user-friendly interface for healthcare professionals).

25. Expected outcomes:

- Define the expected outcomes for the project.
- Example: The prediction model should help in early diagnosis of heart disease, improve patient outcomes, and support preventive care.

Learning Statement (Individual Documents)

26. Learning outcomes:

- What have you learned from working on this heart disease prediction case study?

27. Current capabilities and learning relevance:

- How do the learning outcomes relate to your current skills?
- How will they enhance your development in the future?

28. Team contribution:

- If you are part of a team, explain how you will contribute.
- Example: Leadership in data analysis, support in model validation, or knowledge sharing during deployment.