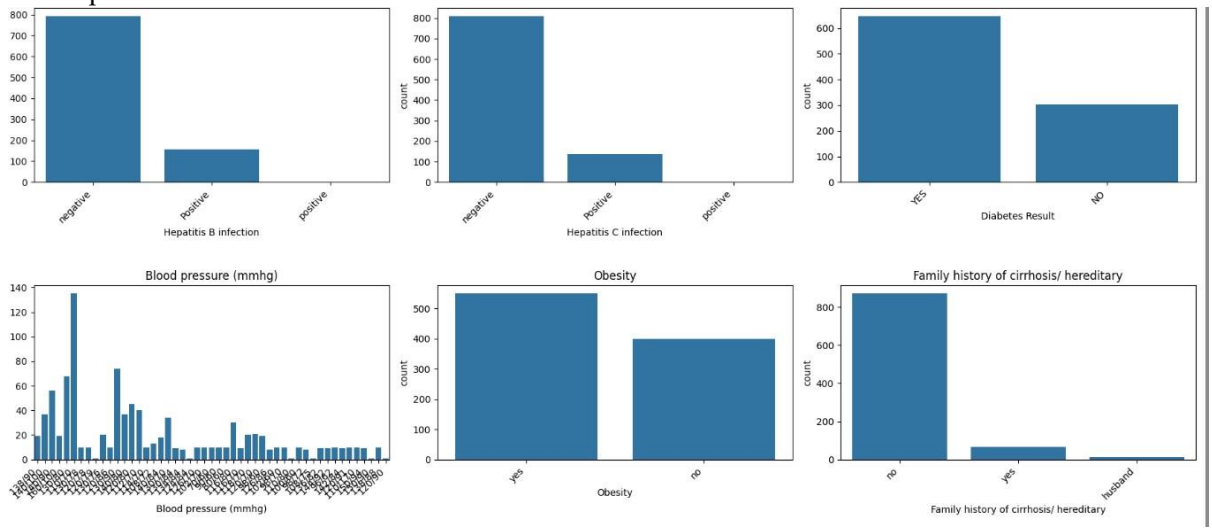
Project Report Format

1. **INTRODUCTION**
   1.1 Project Overview
   This project aims to build a machine learning-based web application that predicts the likelihood of a patient suffering from liver cirrhosis using clinical features such as blood values, alcohol consumption patterns, and more. It provides early-stage alerts for medical professionals and patients.
   1.2 Purpose
2. **IDEATION PHASE**
   2.1 Problem Statement
   2.2 Empathy Map Canvas
   2.3 Brainstorming
3. **REQUIREMENT ANALYSIS**
   3.1 Customer Journey map
   3.2 Solution Requirement
   3.3 Data Flow Diagram
   3.4 Technology Stack
4. **PROJECT DESIGN**
   4.1 Problem Solution Fit
   4.2 Proposed Solution
   4.3 Solution Architecture
5. **PROJECT PLANNING & SCHEDULING**
   5.1 Project Planning
6. **FUNCTIONAL AND PERFORMANCE TESTING**
   6.1 Performance Testing
7. **RESULTS**
   7.1 Output Screenshots



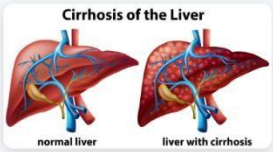
Revolutionizing Liver Care

Your personal assistant for early detection and awareness of liver cirrhosis.

Predict Now

About Liver Cirrhosis

Liver cirrhosis is a chronic condition in which healthy liver tissue is gradually replaced by scar tissue, severely impacting the liver's ability to function properly. Common causes include chronic alcohol abuse, hepatitis B or C infections, and non-alcoholic fatty liver disease. If left undiagnosed, cirrhosis can lead to life-threatening complications such as liver failure, internal bleeding, and liver cancer.



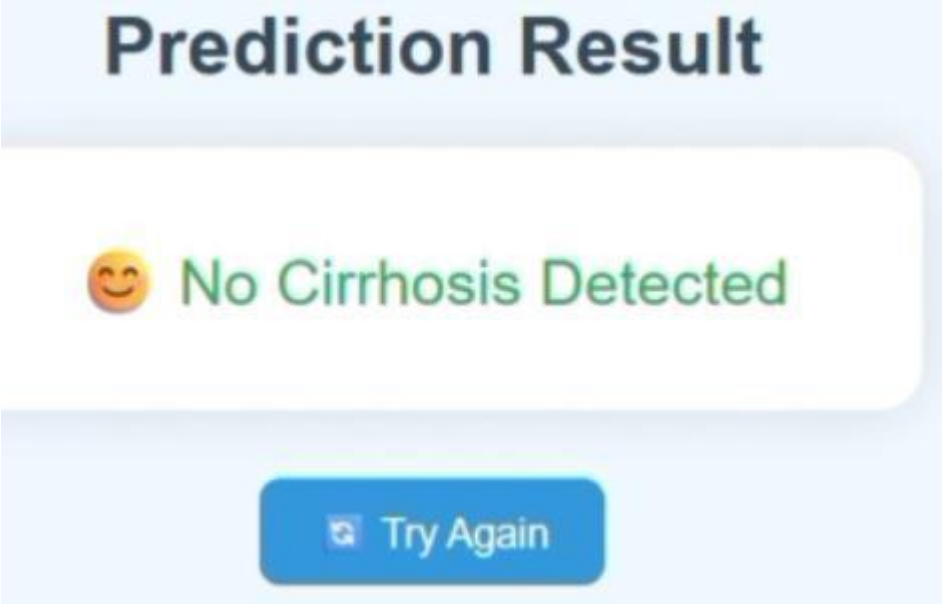
Liver Cirrhosis Prediction

AGE: 52	Gender: Male	Place(location where the patient lives): Rural	Duration of alcohol consumption(years): 13
Quantity of alcohol consumption (quarters/day): 2	Type of alcohol consumed: Country Liquor	Blood pressure (mmhg): 32	Obesity: Yes
Family history of cirrhosis/ hereditary: Yes	Hemoglobin (g/dl): 2	PCV (%): 1	RBC (million cells/microliter): 2
MCV (femtoliters/cell): 1	MCH (picograms/cell): 5	MCHC (grams/deciliter): 3	Total Count: 12000
Polymorphs (%): 6	Lymphocytes (%): 4	Monocytes (%): 2	Eosinophils (%): 23
Basophils (%): 6	Platelet Count (lakhs/mm): 6	Direct (mg/dl): 32	Indirect (mg/dl): 2
Total Protein (g/dl): 6	Albumin (g/dl): 8	Globulin (g/dl): 7	AL.Phosphatase (U/L): 2
SGOT/AST (U/L): 6	USG Abdomen (diffuse liver or not): 3	Lymphocytes (%): 5	Hemoglobin (g/dl): 8

Predict

Output 2:

With Different values



8. ADVANTAGES & DISADVANTAGES

Advantages:

- Early detection of liver cirrhosis
- Non-invasive and cost-effective
- Supports faster clinical decisions
- Scalable and user-friendly
- Useful for data-driven insights **Disadvantages:**
- Accuracy depends on data quality
- May not generalize to all populations
- Requires strong data privacy measures

- Some models lack interpretability

9. CONCLUSION

- ML helps in early, efficient liver cirrhosis prediction
- Reduces diagnostic time and cost
- Improves patient care and supports doctors
- Shows promise for AI in healthcare

10. FUTURE SCOPE

- Connect with hospital databases (EHR)
- Real-time mobile prediction app
- Extend to other liver diseases
- Add explainability to model results
- Deploy on cloud with multilingual support

11. APPENDIX

Dataset Link : https://www.kaggle.com/datasets/bhavanipriya222/liver-cirrhosisprediction

GitHub & Project Demo Link : **https://github.com/DurgabhavaniMirla/Liver-cirrhosos-using-ML-Techniques**