Problem-Solution Fit Template

Project Name: HematoVision – Blood Cell Classification
Team ID: LTVIP2026TMIDS47037
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1. Problem Identification

Problem ID	Problem Description	Target User	Evidence / Pain Points
P01	Manual blood cell classification is slow	Lab Technicians	30–40 minutes per sample, high chance of human error
P02	Delay in diagnosis due to manual reporting	Doctors / Patients	Slow report generation, treatment delays
P03	Difficulty in detecting rare/abnormal cells	Hematologists	Rare cells may be missed, leading to misdiagnosis
P04	Limited access to labs in remote areas	Rural Clinics	Patients travel long distances for testing

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2. Proposed Solution

Solution ID	Solution Description	How it Solves Problem	Key Benefits
S01	AI-based blood cell classification software	Automates identification of RBC, WBC, Platelets	Faster, accurate, reduces errors
S02	Cloud-based reporting system	Generates and shares reports instantly	Reduces delay, accessible remotely
S03	Abnormality detection module	Flags rare or abnormal cells automatically	Reduces misdiagnosis, improves patient care
S04	Mobile app for remote clinics	Enables upload of blood samples from rural areas	Expands accessibility for remote diagnostics

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3. Problem-Solution Fit Matrix

Problem	Solution	Fit (High/Medium/Low)	Notes
Manual classification is slow	AI-based blood cell classifier	High	Saves time and improves accuracy
Delay in diagnosis	Cloud-based reporting system	High	Doctors get instant access to results
Rare/abnormal cells missed	Abnormality detection module	High	Improves detection of critical cases
Limited access in rural areas	Mobile app for remote clinics	Medium	Requires internet access

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4. Assumptions & Constraints

- Blood smear images are properly captured with standard microscopes.
- Users have basic computer skills to operate the system.
- Internet connectivity is available for cloud-based operations.
- AI model requires periodic updates to maintain accuracy.