DiabetWise AI

Indonesia Healthcare AI Hackathon 2025

Smart Food Detection for Diabetes Management

Theme: Diabetes

TEAM MEMBERS

ADIM
Team Lead & AI Developer

AAA
Medical Expert & Clinical Advisor

BBB
Research Assistant

CCC
Operations Assistant

Executive Summary

Smart Food Detection for Diabetes Management

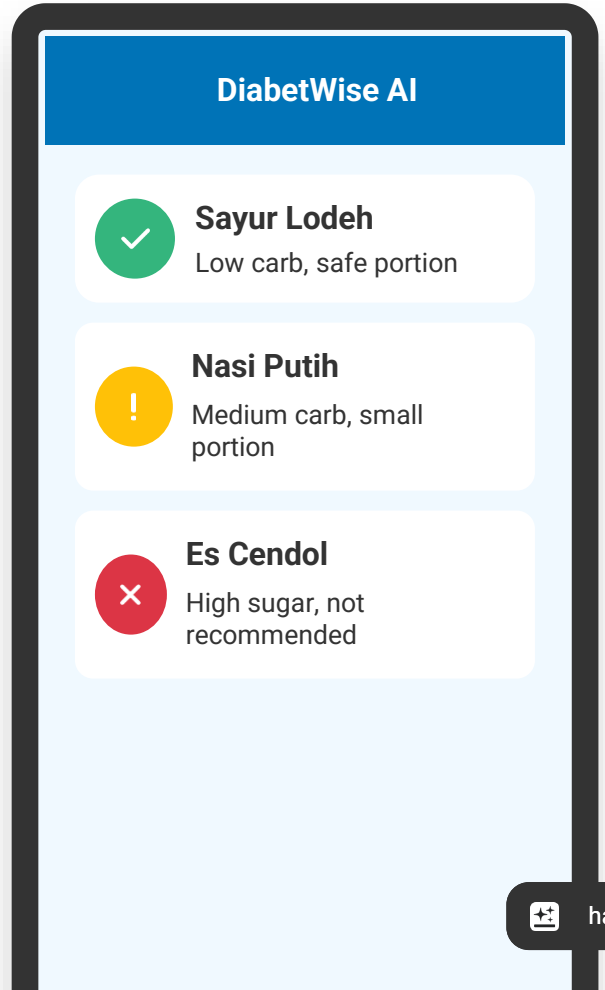
DiabetWise AI is a mobile app leveraging dual artificial intelligence (food detection + calorie estimation) to help Indonesians with diabetes make safer food choices in real-time through smartphone camera detection.

Key Value Propositions

- Real-time food detection with traffic light warning system
- Indonesia-specific food database with 2,000+ items
- 90%+ detection accuracy, ±15% calorie estimation
- Offline capability for remote areas
- Integration-ready with Puskesmas health centers
- Educational insights and personalized recommendations

Target Impact

Address diabetes management for 10.7 million Indonesians



Problem Statement

Indonesia's Diabetes Crisis & Current Challenges

Indonesia faces a growing diabetes epidemic with significant health and economic consequences. Current solutions are inadequate for the unique needs of the Indonesian population.

Diabetes Crisis Statistics

10.7 million
Indonesians with diabetes

#7 worldwide
In diabetes prevalence

73%
Cases remain undiagnosed

$2.3B
Annual healthcare costs

Current Pain Points

- **Manual food tracking** is time-consuming and error-prone
- **Limited nutritional knowledge** among patients leads to poor food choices

Impact of Diabetes in Indonesia

60%

of diabetes complications are caused by poor diet management

Market Gap:

Indonesian Diabetes Statistics

A Growing Healthcare Challenge

Indonesia faces a rapidly growing diabetes crisis, ranking #7 worldwide

in prevalence. With limited awareness and healthcare access, many cases go undiagnosed until serious complications develop.

10.7M

Indonesians currently diagnosed with diabetes (IDF Atlas 2021)

15M+

Pre-diabetic individuals at risk of developing full diabetes

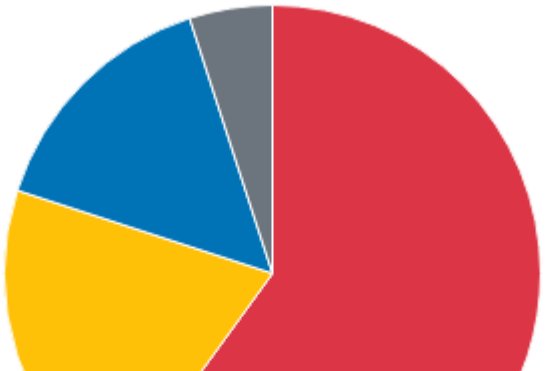
73%

Cases remain undiagnosed until serious complications develop

60%

Diabetes complications are directly related to poor diet management

Projection of diabetes prevalence in Indonesia (2020-2045)



Key Pain Points

Manual food tracking is time-consuming and error-prone

Market Gap & Unmet Needs

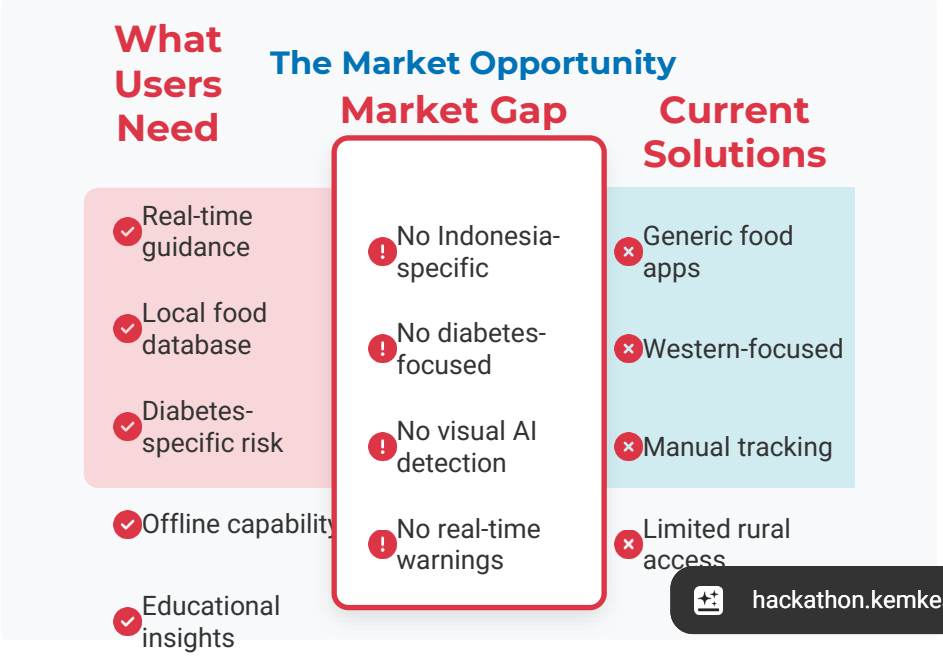
Current Solutions & Their Limitations

No existing application specifically addresses
Indonesian food detection and diabetes risk assessment
with a comprehensive local database. This creates a significant market gap for real-time visual food safety guidance for diabetics.

Current Solution Limitations

MyFitnessPal	⚠ No diabetes-specific warnings or Indonesian food database
Foodvisor	⚠ Limited Indonesian food database, no diabetes risk level
	⚠ Time-consuming, error-prone, lacks real-time guidance
	⚠ Not real-time, expensive, limited access in remote areas

Key Pain Points



Proposed Solution: DiabetWise AI Overview

Smart Food Detection for Diabetes Management

"One Snap → Instant Diabetes-Safe Analysis"

DiabetWise AI is a mobile application that uses your smartphone camera to identify food and provide real-time assessment of its safety for diabetes management, complete with nutritional information and personalized portion recommendations.

Key Features

- Real-time camera food detection in 2 seconds
- Offline capability for remote areas
- Educational insights on food safety
- Personalized recommendations
- Daily progress tracking
- Puskesmas integration ready

Smart Warning System

1. Snap Food Photo

Simply take a picture of any food with your smartphone camera

2. Dual AI Processing

Food detection + calorie estimation models analyze the image

3. Safety Assessment

Instant traffic light warning system for diabetes safety

4. Smart Recommendations

Dual AI System Architecture

Powering Real-Time Food Detection & Risk Assessment

Food Detection AI

- YOLOv8 + EfficientNet
- 50,000+ Indonesian food images
- 2,000+ foods with diabetes risk levels
- 90%+ recognition accuracy

Calorie Estimation AI

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- Depth detection for portion size
- ±15% calorie estimation accuracy
- Carbs, sugar, protein, fat output

AI Processing Workflow

Image Capture

User takes photo of food item

Food Detection

AI identifies food & ingredients

Nutrient Analysis

Calculate calories & nutrients

Risk Assessment

Generate diabetes safety rating

Technical Implementation

Technology Stack, Data Sources & Architecture

Technology Stack

Mobile Development
Flutter (iOS & Android)

AI Framework
TensorFlow Lite

Backend
FastAPI + Firebase

Database
PostgreSQL + Redis

Data Sources

TKPI 2020
Tabel Komposisi Pangan Indonesia

Food-101 & UEC-Food100
Standard food detection datasets

Custom Dataset
50,000+ Indonesian food images

App Architecture

User Interface (Flutter)
Camera detection, results display, recommendations

AI Models (TensorFlow Lite)
Food detection + calorie estimation on-device

Local Database (SQLite)
Offline food database + user preferences

Cloud API (FastAPI)
Model updates, syncing, Puskesmas integration

Master Database (PostgreSQL)
Food database, nutritional profiles, user data

On-device AI processing enables offline capability with cloud sy
when availab

Key Features & User Experience

Smart, Accessible, Personalized

DiabetWise AI delivers an intuitive, accessible user experience designed specifically for Indonesian diabetes patients, with user-centric features that work anywhere, anytime.

Key User Features

Real-time Detection
: Instant analysis in 2 seconds

Offline Mode: Works in remote areas

Smart Warning System
: Safe/Caution/Danger

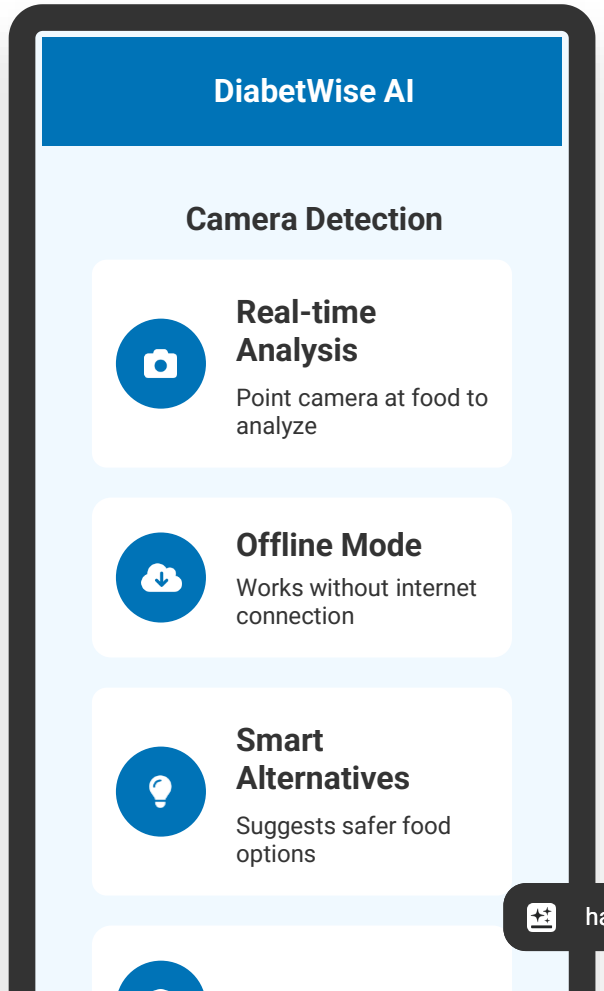
Educational Insights
: Why foods are safe/dangerous

Personalized Recommendations
: Tailored advice

Progress Tracking
: Monitor dietary patterns

User Benefits

Empowers users to make informed decisions



Target Market & User Segments

DiabetWise AI's addressable market in Indonesia

DiabetWise AI targets 25 million+ Indonesians affected by diabetes directly and indirectly, addressing a critical healthcare gap in both urban centers and rural communities across the archipelago.

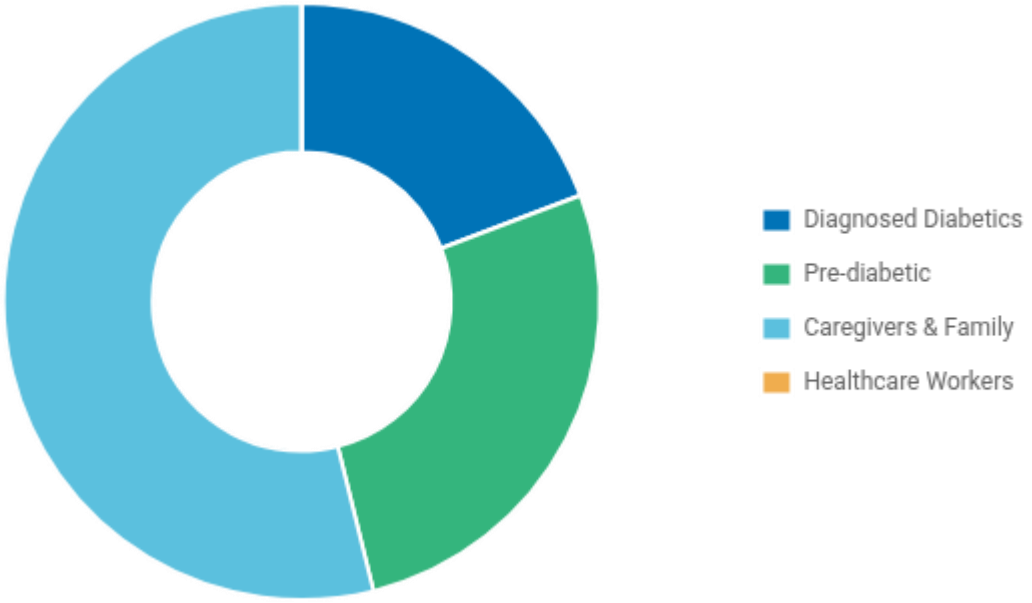
Primary User Segments

- **10.7M** Diagnosed diabetes patients
- **15M** Pre-diabetic individuals
- **30M+** Family members & caregivers
- **10K+** Healthcare workers at Puskesmas

Market Opportunity

$2.3 billion annual healthcare spending on diabetes

Addressable Market



Urban-Rural Distribution

Competitive Analysis

How DiabetWise AI Outperforms Existing Solutions

Current Solutions & Limitations

MyFitnessPal

- No specific diabetes risk warnings

Foodvisor

- Limited Indonesian food database

Manual Food Tracking

- Time-consuming, error-prone, not real-time

- Not real-time, expensive, limited accessibility

Why DiabetWise AI?

DiabetWise AI is the only solution offering Indonesia-specific food database with real-time diabetes risk assessment, offline capability, and Puskesmas integration, validated by healthcare professionals

Features	Competitors	DiabetWise AI
Indonesia-specific food database	✗	✓
Real-time diabetes risk assessment	✗	✓
Dual AI system for high accuracy	✗	✓
Offline capability for rural areas	✗	✓
Educational component	✓	✓
Puskesmas integration	✗	✓
Medical expert validation	✗	✓

First Indonesian-specific diabetic food AI

Business Model & Sustainability

DiabetWise AI - Revenue Streams and Financial Projections

DiabetWise AI utilizes a multi-tiered business model combining consumer and healthcare institution revenue streams to ensure sustainability while maximizing social impact.

Revenue Streams

Freemium Mobile App
: Core features free, premium analytics $2/month

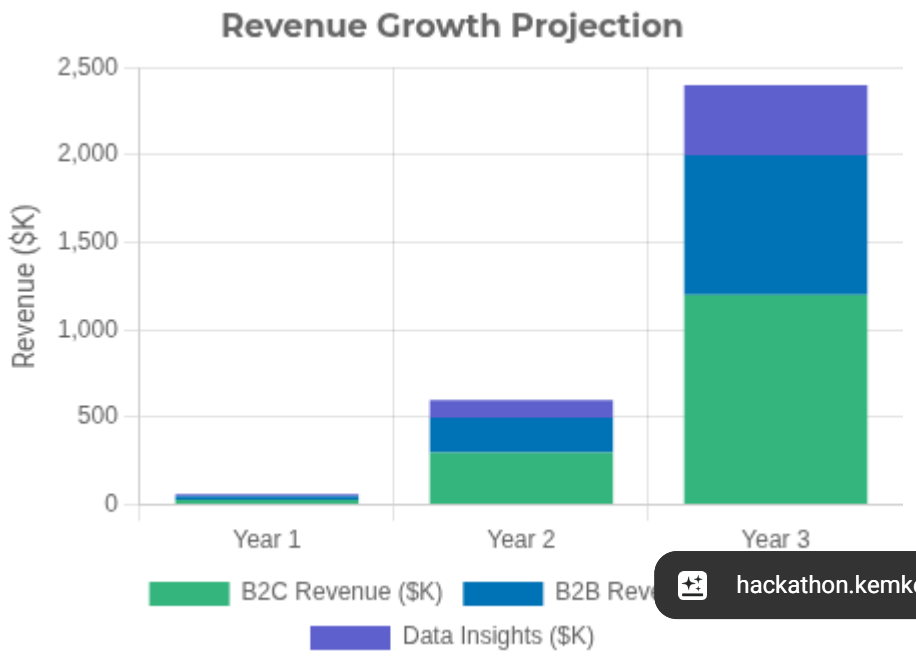
B2B Healthcare
: Puskesmas integration at $50/month per facility

API/SDK Licensing
: Third-party app integration at $0.01 per API call

Data Insights
: Anonymized health trends for research at $5-10K per report

Financial Projections

Timeline	Users	Revenue	Key Milestone
Year 1	50,000	$60,000	10 Puskesmas pilot
Year 2	500,000	$600,000	100+ Puskesmas integration



Implementation Roadmap

From 48-Hour Hackathon to National Scale

48-Hour Hackathon Phase

Day 1 (24 Hours)

Hours 1-4: Setup & data preprocessing

Hours 5-12: AI model training (Food detection + Calorie estimation)

Hours 13-20: UI/UX design & mobile app development

Hours 21-24: Basic API integration & testing

Day 2 (24 Hours)

Hours 1-8: AI model optimization & accuracy improvement

Hours 9-16: Complete mobile app development & testing

Hours 17-20: Integration testing & bug fixes

Hours 21-24: Pitch preparation & demo setup

Success Milestones

12-Month Scale-up Plan

Months 1-2

MVP Refinement

User feedback integration, model accuracy improvement, UI/UX optimization

Goal: 90% accuracy

Months 3-4

Beta Testing

1,000 beta users recruitment, clinical validation with 100+ patients, partnership discussions

Goal: 1,000 active users

Months 5-6

Pilot Program

10 Puskesmas pilot implementation, integration with health systems, staff training

Goal: 50,000 users

Meet the Team

The DiabetWise AI Team: Medical Expertise + Technical Innovation

A

M. IKRAR YAMIN

Team Leader & AI Developer

- AI, Computer Vision, IoT expert
- Model development, system architecture
- Multiple AI computer vision implementations
- Mobile app deployment experience

A

DAYAN HISNI S.Kep

Medical Expert & Clinical Advisor

- Experienced Nurse at Puskesmas
- 5+ years handling 500+ diabetic patients
- Medical validation & user requirements
- Licensed healthcare professional

B

ARIMAN

- Data collection and labeling
- UI/UX research expertise
- TAM analysis and user surveys
- Market research methodology

C

Dini F. dan Linda N.

Operations Assistant

- Data preparation and testing
- Community outreach activities
- Survey and operational support
- Stakeholder communication

Why This Team Works

- Medical + Technical expertise combination
- Real-world healthcare experience from the field

Expected Outcomes & Impact

Transforming Diabetes Management in Indonesia

In Year 1, DiabetWise AI aims to revolutionize diabetes management across Indonesia, preventing thousands of complications through early intervention and smart food choices, while delivering significant healthcare cost savings.

Year 1 Targets

500K+
Active Users

10,000+
Complications Prevented

$150M
Healthcare Costs Saved

100+
Puskesmas Integrated

60%
Improvement in Food Awareness

Long-term Social Impact

- Rural healthcare accessibility enhancement
- Digital health literacy improvement
- National diabetes prevention program enabler
- Research data for preventive studies

DiabetWise AI Impact Map:

- Urban areas: Immediate adoption
- Semi-urban: Progressive rollout
- Rural: Offline mode deployment
- Remote: Puskesmas integration

Financial Projections, Risks & Call to Action

DiabetWise AI - Smart Food Detection for Diabetes Management

Financial Projections

Year 1	50K users → $60K revenue
Year 2	500K users → $600K revenue
Year 3	2M users → $2.4M revenue
ROI	Break-even in Month 8

Risk Assessment

- AI accuracy - mitigated via expert validation & continuous learning
- Data privacy - addressed with local processing & compliance
- User adoption - solved via Puskesmas partnerships & free tier

Call to Action

Support DiabetWise AI for the Hackathon Finale in Jakarta Oct 13-14, 2025. Together, we can empower 10.7M Indonesians with diabetes to make safer food choices and prevent complications through accessible AI technology.

Contact Information

Team Lead
ADIM - AI/Tech Lead

Medical Advisor
AAA - Experienced Nurse

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Demo
[Available during hackathon]

GitHub
[Repository link]

Social Media

@DiabetWiseAI

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Indonesia's Diabetes Crisis & Current Challenges

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