ImpactMatch - Complete Local Implementation Workflow (Hackathon-Ready Guide)

This document provides a detailed 10-step guide to build the ImpactMatch platform locally,

with AI matching, blockchain proof of impact, gamified impact scoring, and a polished UI - all without paid

services.

1. Tech Stack

Frontend: React, Tailwind, Framer Motion, react-tinder-card, react-leaflet, Chart.js, Ethers.js

Backend: Node.js, Express, MongoDB (local), Mongoose, bcrypt, JWT

AI: TF-IDF (no-cost) or OpenAI (optional)

Blockchain: Hardhat, Solidity, Ethers.js

2. Folder Structure

impactmatch/

 - backend/

 - frontend/

 - hardhat/

3. Implementation Workflow

A. Setup local environment (Node, MongoDB, Hardhat)

B. Backend setup with Express + MongoDB + TF-IDF AI

C. Frontend setup (React + Tailwind + Swipe UI)

D. Dashboard + badges + ImpactScore logic

E. AI Chatbot (TF-IDF or GPT-based)

F. Map integration (react-leaflet + OpenStreetMap)

G. Local Blockchain setup (Hardhat + Solidity)

H. Proof-of-Impact contract integration

I. Testing + Polish (animations, toasts, responsiveness)

J. Demo Script preparation

4. Tech Flow Summary

Frontend -> Backend API -> MongoDB -> Hardhat Blockchain -> AI Matching -> Dashboard

5. Smart Contract Overview

Contract: ProofOfImpact.sol

Functions: recordImpact(), getRecord(), totalRecords()

Deployed locally with Hardhat and Ethers.js

6. Impact Features

- Swipe to match causes

- AI recommendations (TF-IDF / embeddings)

- Proof-of-Impact blockchain verification

- ImpactScore and badges

- Impact Map visualization

- AI Chatbot for conversational discovery

7. Local Run Commands

Backend: npm run dev

Frontend: npm run dev

Hardhat: npx hardhat node / npx hardhat run --network localhost scripts/deploy.js

MongoDB: docker run -d -p 27017:27017 --name impact-mongo mongo:6

8. Demo Script for Judges

1. Problem statement (10s)

2. Swipe demo (20s)

3. Join + ImpactScore update (10s)

4. Blockchain proof popup (10s)

5. Dashboard & badges (10s)

6. Chatbot suggestion (10s)

7. Closing line: "AI matches you. Blockchain proves it."

9. 24-Hour Execution Plan

0-1h: Setup

1-4h: Backend APIs

4-7h: Swipe UI

7-11h: Dashboard

11-13h: Blockchain verify

13-15h: Map + Chatbot

15-19h: UX polish

19-24h: Deck + demo prep

10. Final Checklist

- Working local demo

- Clean swipe & dashboard

- Blockchain verification UI

- AI recommendation flow

- ImpactScore visible

- Polished pitch with visuals