

# ■■ Decentralized Insurance dApp

A blockchain-based decentralized insurance platform built on Ethereum using Solidity and Hardhat. This dApp enables users to buy policies, file claims, and receive claim approvals transparently — without centralized intermediaries.

## ■ Live Deployment

Environment: Localhost (Hardhat)

Status: ■ Live

Contract Address: 0xe7f1725E7734CE288F8367e1Bb143E90bb3F0512

## ■ Features

- Policy Creation and Purchase
- Claim Filing and Claim Status Tracking
- Owner-Only Claim Approvals/Rejections
- Access Control with Role-based Restrictions
- Solidity Smart Contracts (v0.8.25)
- Web3 Wallet Integration (MetaMask support)
- Modular frontend with Ethers.js

## ■ Tech Stack

Frontend: HTML, CSS, JavaScript, Ethers.js

Backend: Solidity (v0.8.25), Hardhat

Testing: Mocha, Chai, Hardhat Network

Deployment: Hardhat CLI + Local Blockchain

## ■ Project Structure

ethereum-decentralized-insurance/

■■■ contracts/

■ ■■■ DecentralizedInsurance.sol

- scripts/
- ■■■■ deploy.js
- frontend/
- ■■■■ index.html
- ■■■■ style.css
- ■■■■ script\_new.js
- ■■■■ new\_abi.json
- test/
- ■■■■ Insurance.test.js
- hardhat.config.cjs
- package.json
- README.md

## ■■ Getting Started

### 1. Clone the Repository

git clone <https://github.com/fbanks5/ethereum-decentralized-insurance.git>

### 2. Install Dependencies

npm install

### 3. Run Local Hardhat Node

npx hardhat node

### 4. Deploy Smart Contract

npx hardhat run scripts/deploy.js --network localhost

### 5. Launch Frontend

cd frontend

Open index.html in browser

## ■ Running Tests

npx hardhat test

## ■ Wallet Setup

Ensure MetaMask is:

- Connected to localhost:8545
- Using one of the generated test accounts

## ■ Roadmap

- Local development and deployment
- Full frontend integration with MetaMask
- Deployment to Goerli / Sepolia testnet
- Add premium-based policy tiers
- Off-chain claim validation via Oracles
- Production launch & frontend hosting

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## ■■ Disclaimer

This project is for educational and demonstration purposes only.

Do not use in production without proper audits.