

You are the Replit Assistant operating in SAFE MODE.

Project: VeriFyz Protocol Web App

Goal:

Prepare the backend for Polygon blockchain integration and contract deployment while ensuring ethers.js v5 is used for compatibility. Do not modify frontend or homepage. Only work in the backend and deployment scripts.

Instructions:

1. Dependencies

- Remove ethers v6 if installed.
- Install ethers@5 instead (npm install ethers@5).
- Keep Express, Helmet, CORS, dotenv, and TypeScript exactly as they are.

2. Backend Setup

- Create backend service in /backend using Node.js/TypeScript.
- Use ethers.js v5 imports:
`const { ethers } = require("ethers");`
- Use ethers.providers.JsonRpcProvider for RPC provider setup.
- Use new ethers.Contract(address, abi, signer) for contract interaction.
- Load environment variables from .env file:
 - PRIVATE_KEY
 - POLYGON_RPC (mainnet)
 - POLYGON_AMOY_RPC (testnet)
 - PRESALE_ADDRESS
 - REWARDS_DISTRIBUTOR_ADDRESS
 - TREASURY_WALLET_ADDRESS

3. Backend API Endpoints

- GET /api/network → returns chain ID and network name.
- GET /api/token/summary → returns total supply, decimals, fee split.
- GET /api/presale/status → returns raised amount, buyers count, presale status.
- GET /api/winners → returns 5 lifetime winners.
- GET /api/rewards/:address → returns pending rewards for a given wallet.

4. Deployment Script

- Create /scripts/deploy.js using ethers v5 + Hardhat.
- The script should:
 - Compile and deploy VFZToken, RewardsDistributor, and Presale contracts.
 - Use constructor arguments pulled from .env.
 - Print deployed contract addresses to console when finished.

5. Safety & Structure

- Implement read-only contract interactions only (no transaction signing in the backend).
- Add error handling for invalid addresses and network issues.
- Use environment-based configuration via dotenv.
- Do not touch or alter frontend/homepage files.

STOP after setup and print confirmation that:

- ethers v5 is integrated,
- backend endpoints are ready,
- deployment script is scaffolded and ready for use.