This project is a web3 DeFi application that implements a continuous (distribution-based) prediction market. Unlike traditional prediction markets—where users bet on binary outcomes—this platform lets users submit predictions as normal (Gaussian) distributions over potential numeric outcomes (e.g., predicting the BTC/USDT price at a specified date). The platform is EVM-compatible, intended to be built on a Polkadot ecosystem EVM parachain (such as Moonbeam), and will ultimately settle outcomes using price data from an Ethereum-based oracle (e.g., Chainlink), relayed securely via a cross-chain bridge (such as Hyperbridge).

Key Features
Continuous Prediction Submission:
Users can submit a prediction as a normal distribution, specifying the mean (expected value) and standard deviation (uncertainty width) for an outcome (e.g., BTC/USDT price).

Minimal Interface:
For MVP, users interact with a single market via a front-end form to set mean, std deviation, and stake; a live chart previews the distribution.

Cross-Chain Settlement:
At market close, the real outcome is set using price data from a Chainlink oracle on Ethereum, relayed to the Polkadot/Moonbeam smart contract via a cross-chain protocol (initially manual, later using Hyperbridge).

Payout Calculation:
Payouts are based on whose predicted distribution aligns closest to the actual outcome, rewarding more informative and precise forecasts.

Technical Stack
Layer Tech/Approach Purpose
Frontend Next.js + React User interface, chart rendering
Charting react-chartjs-2 or Chart.js Visualizes the normal distribution
Blockchain Solidity, EVM Parachain (Moonbeam) Smart contracts, market logic
Oracle Chainlink (Ethereum mainnet/testnet) Price feed for settlement
Bridge Hyperbridge (or manual for MVP) Cross-chain price relay
Wallet MetaMask (future, optional for MVP) User authentication & contract interaction
Core User Flow
View Market:
User sees a market prompt (e.g., “Predict BTC/USDT price for [date]”).

Input Prediction:
User sets mean and standard deviation using sliders or inputs, enters a stake.

Visualize Prediction:
Live line chart previews the resulting normal curve over the price domain.

Submit Prediction:
For MVP, clicking "Submit" only simulates submission (later: sends values to back end/smart contract).

Market Resolution (settlement):
On target date, outcome is sourced from Chainlink's oracle and set on-chain (initially admin/manual, later automated via Hyperbridge).

Payout:
Platform calculates whose prediction curve best matches the outcome and distributes rewards accordingly.

MVP Requirements
Frontend:

Single MVP page: market details, sliders for mean/stddev, stake input, preview chart, and a submit button (no blockchain/wallet logic required for phase 1).

No multi-market support, login/authentication, or unnecessary features.

Backend/Smart Contract:

(Future/next step) Solidity contracts supporting basic market creation, user prediction storage, and settlement function synced to an outcome.

Cross-Chain Oracle:

(For demo) Allow manual admin setting of the closing price.

(Next phase) Integrate a cross-chain solution to automatically fetch and relay Chainlink oracle data.

Value Proposition
First DeFi-native prediction market supporting full probability distributions for numeric outcomes, not just binary bets.

Enables richer information aggregation, smarter risk modeling, and more advanced trading/hedging strategies for DeFi, DAOs, and researchers.

Built for rapid deployment on Polkadot's EVM-compatible infrastructure, leveraging robust cross-chain protocols for true Web3 composability.

Example Caption/Blurb
"A DeFi prediction market where users forecast the entire outcome curve, not just a win/lose bet. Submissions are normal distributions, not just numbers—unlocking probabilistic forecasting natively on the blockchain. Designed for Moonbeam with cross-chain oracle integration."

Deliverables Summary
Next.js/React front end as described above, with mean/stddev sliders, stake input, live preview chart, and submit button.

(Optionally as next step) EVM smart contract for submitting and settling prediction markets.

(Optionally as next step) Manual or gradually automated cross-chain price fetching for settlement.

Here is research and maths for this type of predictions that you can read on:
@https://www.paradigm.xyz/2024/12/distribution-markets