Guess Street

PREDICT. COMPETE. WIN.

Team Members

- Braxton
- Chris
- Ryan
- Elaine
- JD

Client Information

Erman Pattuk

Software Engineer at Google

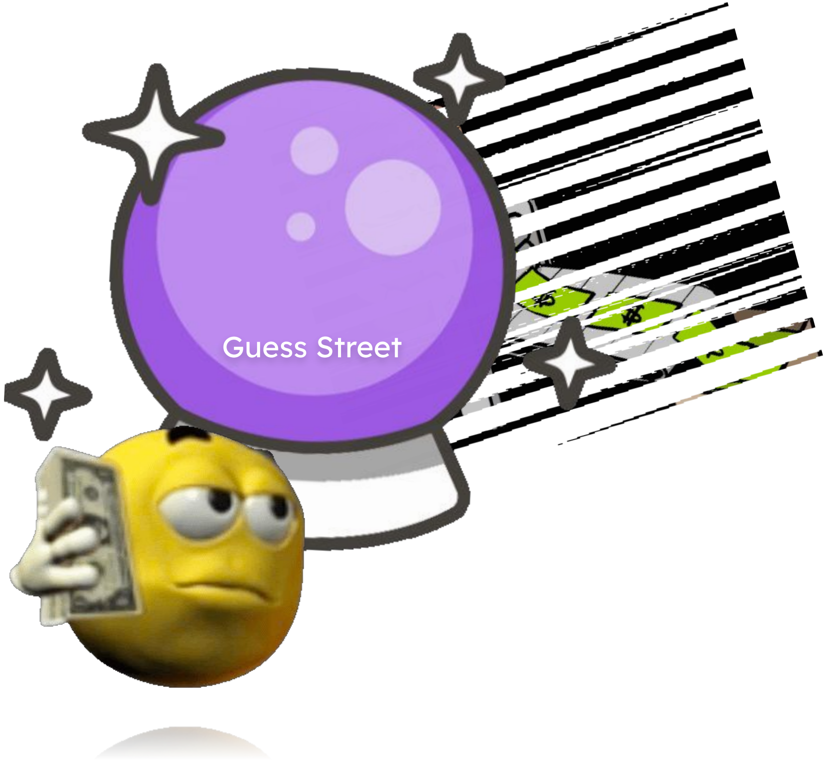
Business Requirements

BR1:

We want a predictor to be able to create a prediction on an asset and for these predictions and their accuracy to be tracked over time.

BR2:

A regular user of the system should be able to read the predictions and make financial decisions based on the credibility of the predictor.



Use Cases

Actors:

- **Authenticated Users**: those who are able to make predictions, registered with email and password, verified their account, and can log in.
- **Regular Users**: those who do not have accounts, cannot interact with the authenticated users, but can track predictions.
- **Administrators**: those who maintain the system and can perform commands that others cannot, such as banning users or deleting accounts.

Use Cases, cont.

UC1: Authenticated Users can make a prediction on a specific asset.

UC2: Authenticated Users can gain quantifiable credibility through successful financial predictions.

UC3: Regular Users can view all predictions made by a specific Authenticated User.

UC4: Regular Users can view all predictions made for a specific asset.

UC5: Admins can perform maintenance on technology of the platform to repair, maintain, and expand upon the software.

Use Cases, cont.

UC6: Administrators can enforce temporary or permanent bans for misuse of the platform.

UC7: Authenticated Users can follow other Authenticated Users.

UC8: Authenticated Users can use their account information to gain access to their profile.

UC9: Regular Users can create an account to become an Authenticated User.

UC10: Authenticated Users can turn on notifications for followed Authenticated Users.

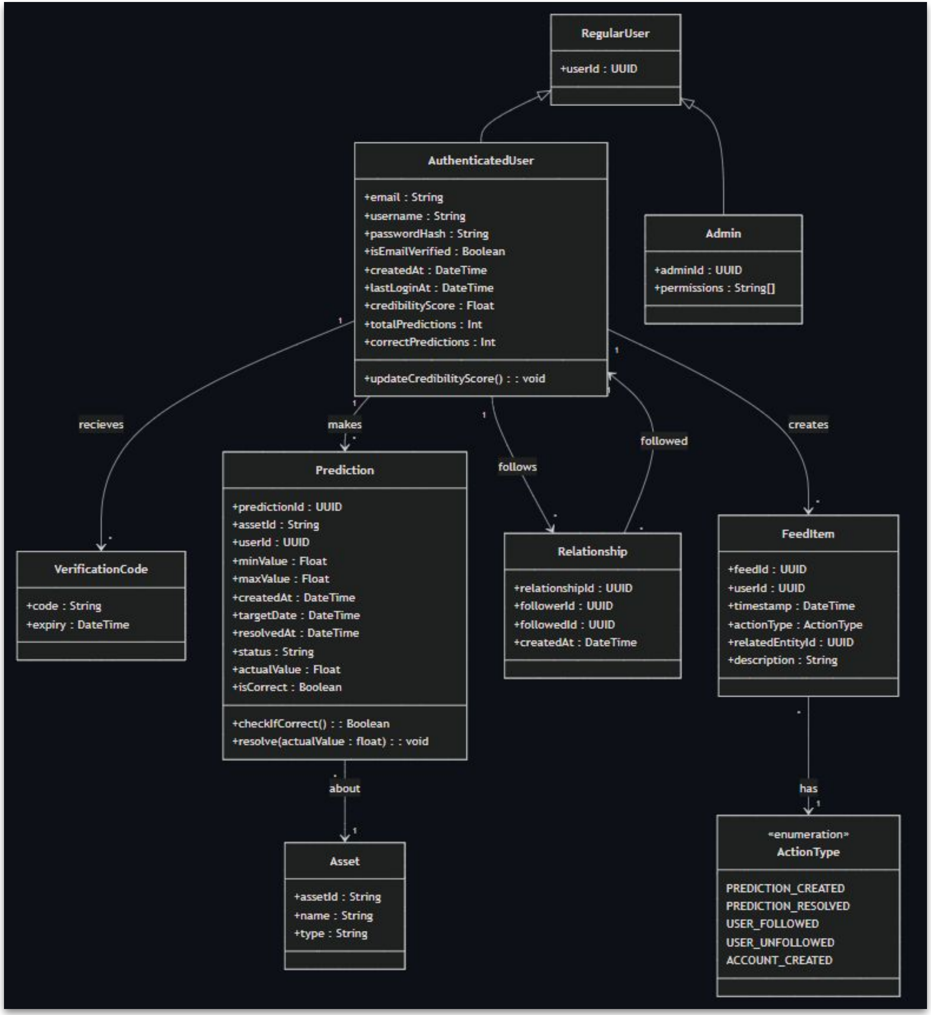
Functional Requirements:

- FR1: Authenticated users can make predictions —- UC1
- FR2: Authenticated users can turn notifications on/off for predictors — UC10
- FR3: Authenticated users should be notified for predictions for followed predictors - UC10
- FR4: Authenticated users can follow predictors - UC7
- FR5: Authenticated users can log in with their email and password - UC8
- FR6: Predictors should have their predictions recorded - UC1
- FR7: Regular users can create accounts and become authenticated users - UC8
- FR8: Users can see predictions made by a predictor - UC3
- FR9: Users can see the predictions made for a specific asset - UC4
- FR10: System will evaluate predictions against market outcomes - UC2
- FR11: User accounts can be banned by Admins - UC6
- FR12: User accounts can be suspended by Admins - UC6

Non-Functional Requirements

- NR1: Making a prediction makes the authenticated user a predictor - UC1
- NR2: Predictions should be traceable and verifiable - UC6
- NR3: Predictions can not be changed after they are submitted - UC1
- NR4: Predictions should be processed in a relatively quick manner - UC1
- NR5: Predictions should be securely stored after they are submitted - UC1
- NR6: Prediction results should be able to be filtered - UC4
- NR7: Banned users cannot bypass restrictions from ban - UC6
- NR8: Email verification has a set response time before expiring - UC8
- NR9: Brute-Force log in attempts should be prevented - UC9

Domain Model



TechStack

BackEnd

- **Python 3.11**
- **FastAPI** — main web API*
- **PostgreSQL** OR **DynamoDB** — relational DB
- **SQLAlchemy** — ORM *
- **Alembic** — migrations*
- **EventBridge**— scheduled job (close predictions daily)*
- **JWT auth** — built-in via fastapi-users or your own simple auth layer

Frontend

- **React**
- **Vite** (for bundling/dev server)
- **TypeScript** (safer typing, cleaner code)
- **React Query** (API calls)
- **React Hook Form + Zod** (form + validation) if needed

Prototype

Prototype

First Iteration Features

Functional in iteration 1 means a user can make a prediction and that prediction is stored and viewable later.

Functional Requirements to be completed in this iteration:

- FR1
- FR10

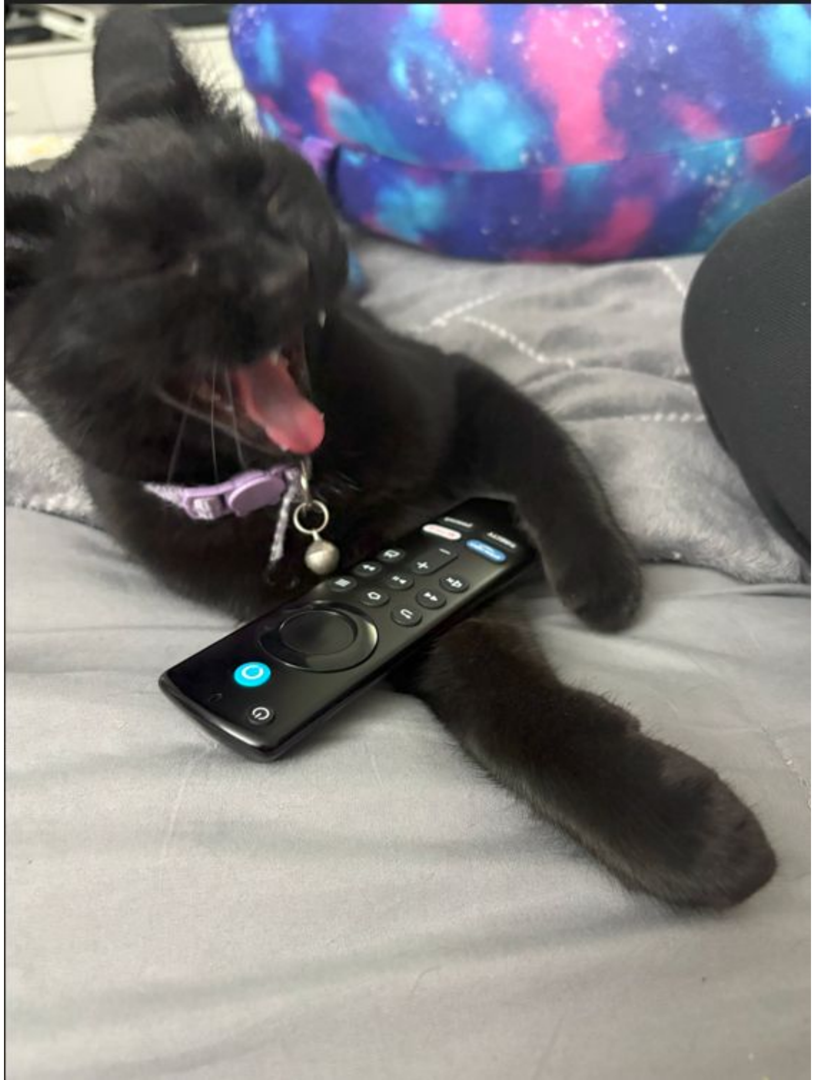
Details:

- An interactive command line interface.
- A user can create a prediction on an asset, providing the asset ID, min-max range, and target date (<= 2 years)
- Predictions can be printed out by asset ID (or user)

Client Feedback and what was changed

- Client was impressed with our prototype and was excited for the finished project
- We will have one version of profiles instead of predictors and regular users
- Add a cloud based service for security purposes.
- Regular users can follow other regular users

INTERESTING SLIDE



Questions?!?!?!?!?!?!?!??!?!?!?!?!??!?!?!?!?!