**USER STORIES**

**Authentication & Account Management**

1. **As a user**, I want to **create an account** so that I can access the system and manage my stock portfolio.
   * *Acceptance Criteria*: The system allows me to sign up with a username, email, and password.
2. **As a user**, I want to **log in securely** so that I can access my account without unauthorized access.
   * *Acceptance Criteria*: I can log in using valid credentials, and I am denied access with invalid credentials.
3. **As a user**, I want to **recover my account password** so that I can regain access if I forget it.
   * *Acceptance Criteria*: I receive a password reset link upon request, and it works as expected.
4. **As an admin**, I want to **manage user accounts** so that I can add, update, or remove users to maintain system integrity.
   * *Acceptance Criteria*: I can perform CRUD (Create, Read, Update, Delete) operations on user accounts.

**Portfolio Management**

1. **As a user**, I want to **view my portfolio** so that I can see the current status of my stock holdings.
   * *Acceptance Criteria*: The system displays all my stocks, their current values, and overall performance.
2. **As a user**, I want to **edit my portfolio** so that I can add, update, or remove stocks as needed.
   * *Acceptance Criteria*: I can make changes to individual stocks, and the changes are reflected immediately in my portfolio.
3. **As a user**, I want to **fetch reports** so that I can analyze trends and performance of my portfolio.
   * *Acceptance Criteria*: The system provides clear and accurate reports based on my stock data.
4. **As a user**, I want to **download reports** so that I can review my portfolio performance offline.
   * *Acceptance Criteria*: Reports are available for download in common formats like PDF or Excel.

**Stock Data Management**

1. **As a user**, I want to **view stock data** so that I can analyze market trends and make informed decisions.
   * *Acceptance Criteria*: The system provides up-to-date stock data with relevant details (e.g., price, change, and volume).
2. **As an admin**, I want to **add stock data** so that the system includes new stocks for user portfolios.
   * *Acceptance Criteria*: I can input stock details, and they become available for users.
3. **As an admin**, I want to **edit stock data** so that incorrect or outdated information can be updated.
   * *Acceptance Criteria*: Changes to stock data are updated in real-time across the system.
4. **As an admin**, I want to **remove stock data** so that irrelevant stocks are no longer visible to users.
   * *Acceptance Criteria*: Deleted stock data is no longer accessible by users or reflected in their portfolios.

**Stock Prediction & Machine Learning**

1. **As a user**, I want to **generate stock data predictions** so that I can make better decisions based on future trends.
   * *Acceptance Criteria*: Predictions are generated accurately and are presented with a confidence level.
2. **As an admin**, I want to **manage the ML model** so that stock data predictions are accurate and up-to-date.
   * *Acceptance Criteria*: I can update or retrain the machine learning model without affecting system availability.

**FAILURE CRITERIA**

**Authentication & Account Management**

1. **Signup Failure:**
   * The system fails to create an account if:
     + Required fields (e.g., username, email, password) are missing.
     + An email or username already exists in the system.
     + Password does not meet security requirements (e.g., length, complexity).
   * **Impact**: Users cannot access the system.
2. **Login Failure:**
   * The system does not authenticate valid credentials or allows unauthorized access.
   * **Impact**: Users cannot access their accounts or the system is compromised.
3. **Password Recovery Failure:**
   * Users do not receive a password reset link after requesting it.
   * The reset link is invalid or expired.
   * **Impact**: Users are locked out of their accounts.
4. **Account Management Failure (Admin):**
   * Admin cannot add, update, or remove users due to:
     + System errors or database connection issues.
     + Incorrect validation of input fields.
   * **Impact**: User account data becomes outdated or inconsistent.

**Portfolio Management**

1. **Portfolio Viewing Failure:**
   * Users cannot view their portfolio because:
     + Data fails to load from the database.
     + The interface displays incomplete or incorrect information.
   * **Impact**: Users are unable to analyze their portfolio performance.
2. **Portfolio Editing Failure:**
   * Users cannot add, edit, or remove stocks from their portfolio because:
     + Stock data fails to update in the database.
     + Invalid or unsupported inputs are not handled gracefully.
   * **Impact**: Users' portfolios remain outdated or inconsistent.
3. **Report Generation Failure:**
   * The system fails to generate accurate reports due to:
     + Missing or incomplete stock data.
     + System errors in the report generation logic.
   * **Impact**: Users cannot analyze performance trends effectively.
4. **Report Download Failure:**
   * Users cannot download reports due to:
     + Unsupported file formats.
     + Errors in generating downloadable files.
   * **Impact**: Users are unable to access reports offline.

**Stock Data Management**

1. **Stock Data Viewing Failure:**
   * Users cannot view stock data because:
     + The system fails to fetch real-time or stored stock data.
     + Outdated or incorrect stock data is displayed.
   * **Impact**: Users make uninformed investment decisions.
2. **Stock Addition Failure (Admin):**
   * Admin cannot add new stock data due to:
     + Validation errors in the input fields.
     + Database connection failures.
   * **Impact**: New stocks are unavailable for users.
3. **Stock Editing/Removal Failure (Admin):**
   * Admin cannot edit or remove stock data because:
     + Changes are not reflected in the database.
     + Dependencies on existing user portfolios prevent removal.
   * **Impact**: Users see inaccurate or irrelevant stock data.

**Stock Prediction & Machine Learning**

1. **Prediction Failure:**
   * The machine learning model fails to generate predictions due to:
     + Missing or incorrect input data.
     + Errors in the model's logic or outdated algorithms.
   * **Impact**: Users receive inaccurate or unreliable predictions.
2. **ML Model Management Failure (Admin):**
   * Admin cannot update, retrain, or manage the ML model due to:
     + Incompatibility with new data inputs.
     + System errors during retraining or deployment.
   * **Impact**: Predictions become outdated or ineffective.

**System-Wide Failures**

1. **Performance Issues:**
   * The system becomes slow or unresponsive under high traffic or large data loads.
   * **Impact**: Users experience frustration and may abandon the platform.
2. **Security Failures:**
   * Unauthorized access to user accounts or data.
   * Data breaches expose sensitive user or stock information.
   * **Impact**: Loss of trust in the system and potential legal consequences.
3. **Database Failures:**
   * Any operation fails due to database downtime, corruption, or inconsistencies.
   * **Impact**: All user and admin functionalities are disrupted.
4. **System Downtime:**
   * Unexpected system outages prevent access for users and admins.
   * **Impact**: Users cannot manage portfolios, and admins cannot maintain the system.