IT314 - Software Engineering

Lab 3 - Task 3

Group 25 - Portfolio Management

INVESTALYZE

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Product Backlog:

Front card	Back card
User Stories	**Confirmation**
As a user, I want to log into the portfolio management system using my email/phone number and password, so that I can securely access my account.	**Acceptance Criteria:** • User can log in using their registered email/phone number and password. • System verifies the credentials and redirects the user to their portfolio dashboard. **Failure Criteria:** • User receives an appropriate error message if the email or password is incorrect. • The system crashes or does not load after login attempts. • Credentials are valid, but the user is not directed to the dashboard.
As a user, I want to log into the system using my social media accounts (Google, LinkedIn, Facebook etc.), so that I can quickly and easily access my portfolio without remembering another password.	**Acceptance Criteria:** • User can log in using supported social media accounts and is redirected to the portfolio dashboard upon successful login. • System securely integrates with social media authentication providers. **Failure Criteria:** • Login through social media fails due to integration issues. • User is unable to select his/her preferred social login option.

	After successful authentication, the user is not directed to the dashboard.
As a user, I want to reset my password if I forget it, so that I can regain access to my portfolio, and also I want the option to enable two-factor authentication for my account , so that I can ensure an additional layer of security when logging in.	**Acceptance Criteria:** - User receives a password reset link via his/her registered email and is able to reset his/her password using the link and log in with the new password. - User can enable/disable multi-factor authentication from his/her profile. - If enabled multi-factor authentication , after login, the user receives a one-time code (via SMS, email). **Failure Criteria:** - Password reset email is not sent to the user after request or the reset link is invalid, expired, or does not work. - User resets his/her password but still cannot log in with the new password. - User does not receive the MFA code after login or MFA setup fails due to system errors or misconfigurations.
As a user, I want to view and edit my personal details on my profile page, so that I can keep my profile up to date.	**Acceptance Criteria:** - User can view, update and save changes to his/her personal details (name, email, phone number, etc.) from his/her profile. - System displays a confirmation message once changes are successfully saved.

	Failure Criteria: • User's changes are not saved or reflected in his/her profile after updating. • Error message appears when trying to edit or save personal information. • System fails to retrieve the user's information upon viewing the profile.
As a user, I want to view a summary of my portfolio (assets, performance, diversification, etc.) from my profile page, so that I can quickly assess the status of my investments.	**Acceptance Criteria:** • User can view a summary of his/her portfolio, including assets, performance, and diversification. • The portfolio overview data is accurate, up-to-date, and presented clearly. • User can navigate from the overview to other detailed sections of the portfolio. **Failure Criteria:** • The system displays outdated or incorrect portfolio information. • The portfolio overview fails to load, showing errors or incomplete data. • User experiences slow loading times or crashes when viewing the portfolio overview.
As a user, I want to see a simplified view of my stock portfolio,	**Acceptance Criteria:** • The dashboard visually represents my portfolio using pie charts or bar graphs.

so I can easily understand my investments without being overwhelmed by complex data.	- Users can view basic information such as stock name, number of shares, and current value. - The interface is simple with limited metrics, avoiding advanced technical indicators. **Failure Criteria:** - The dashboard fails to represent the portfolio visually, or the visual representation is unclear. - Basic information such as stock name or number of shares is missing or incorrect.
As a user, I want to have access to detailed performance metrics, technical indicators, and trading history on my dashboard, so that I can make informed trading decisions.	**Acceptance Criteria:** - The dashboard shows advanced metrics like moving averages, RSI, MACD, and volume. - Users can view historical price charts for daily, weekly, and monthly time ranges. - Filters are available to customize the data by stock, date range, and performance. - Users can set alerts for price changes or other technical indicators. - Detailed trade history and performance analysis are accessible. **Failure Criteria:** - Advanced metrics are missing or not functioning correctly. - Historical price charts are unavailable or incorrect. - Filters are not present or do not function as expected.

	- Alerts cannot be set or do not trigger as intended. - Trade history and performance analysis are missing or incomplete.
As a user, I want to set and track investment goals, so that I can monitor my progress towards achieving my financial objectives.	**Acceptance Criteria:** - The dashboard allows setting specific investment goals (e.g., saving for retirement, buying a house). - Users can see their progress toward each goal as a percentage. - Visual representations like progress bars show how close users are to reaching their goals. **Failure Criteria:** - The ability to set specific investment goals is missing or not functioning. - Progress tracking towards goals is incorrect or not displayed. - Visual representations like progress bars are absent or unclear.
As a user, I want to have a streamlined trading interface on my dashboard, so that I can quickly execute trades for stocks I'm interested in.	**Acceptance Criteria:** - The dashboard provides a quick-access trading panel where users can buy or sell stocks directly. - Users can view real-time price updates and market depth for selected stocks. - Options to set up and manage limit orders, stop-loss orders,

<table>
<tr><td></td><td>and other order types are available.
Failure Criteria:
The trading panel is not accessible or is slow to load.
Real-time price updates and market depth are inaccurate or not displayed.
The functionality to set up and manage different order types is missing or faulty.</td></tr>
<tr><td>As a user,
I want to categorize my stocks into high-risk and low-risk segments,
so that I can easily manage and balance my portfolio based on my risk tolerance.</td><td>Acceptance Criteria:
The dashboard allows users to label and categorize stocks as high-risk or low-risk.
Users can view a breakdown of their portfolio by risk category with visual aids like pie charts or bar graphs.
The dashboard provides insights and recommendations for balancing risk within the portfolio.
Users receive alerts if the proportion of high-risk stocks exceeds a certain percentage of the portfolio.
Failure Criteria:
The ability to label and categorize stocks by risk is not available or is inaccurate.
The portfolio breakdown by risk category is missing or unclear.
Insights and recommendations for risk balancing are absent or incorrect.</td></tr>
</table>

	• Alerts for high-risk stock proportions are not triggered or are incorrect.
As a user, I want to optimize the tax impact of my stock transactions, so that I can minimize my tax liability and maximize my returns.	**Acceptance Criteria:** • The dashboard includes a tax optimization tool that suggests strategies for minimizing taxes, such as tax-loss harvesting or holding stocks for long-term capital gains. • Users can view the potential tax implications of their trades before executing them. • A feature tracks tax-related metrics like realized and unrealized gains/losses and provides a year-end tax summary. **Failure Criteria:** • The tax optimization tool is missing or not functioning correctly. • Potential tax implications are not displayed or are incorrect. • Tracking of tax-related metrics is incomplete or inaccurate. • The year-end tax summary is unavailable or incorrect.
As an admin, I want to disable a user's account temporarily, so that it allows me to restrict access without permanently deleting the user's data.	**Acceptance Criteria:** • A disabled user is notified via email about the account status. • The admin can re-enable the account at any time, restoring full access for the user.

	Failure Criteria: • If the account remains active after attempting to disable it, the system informs the admin with a specific error message, and the disable action is logged as failed
As an admin, I want to add a new user manually, so that it allows me to onboard users who may not have registered themselves, ensuring everyone who needs access can have it.	**Acceptance Criteria:** • The admin can manually create a new user account by entering essential details. • The new user receives a welcome email with login instructions and a link to set up their profile. • The new user account is immediately active, and the user can log in with their credentials. **Failure Criteria:** • If the email address is already associated with an existing account, the system prevents the creation of a duplicate account and informs the admin with a specific error message. • If the new user account fails to activate due to a system issue, the admin is informed, and the account remains inactive.
As an admin, I want to delete a user's account because it allows me to remove inactive or non-compliant users, keeping the platform secure and user data up to date.	**Acceptance Criteria:** • The admin can select a user and choose to delete their account by confirming the username and email. • A confirmation prompt appears before the account is deleted, detailing the

	username and associated data that will be removed. **Failure Criteria:** • If the deletion fails due to a system error, the admin receives an error message, and the account remains active.
As an admin, I want to log in with admin privileges, so that it allows me to manage and access the administrative features and tasks that are crucial for platform maintenance.	**Acceptance Criteria:** • The admin can log in using a special admin account with enhanced privileges, entering username, password • The admin is redirected to the admin dashboard upon successful login. **Failure Criteria:** • If the login attempt fails due to incorrect credentials, the system displays a clear error message and prompts the admin to retry.
As an admin, I want to view all registered users, so that it allows me to monitor and manage the platform's user base effectively	**Acceptance Criteria:** • The admin can access a list of all registered users, displaying essential details such as username, email, registration date and account status (active, disabled). **Failure Criteria:** • The trending posts section does not reflect actual popular content. • Posts with little or no engagement are incorrectly displayed as trending.

	• Students are unable to interact with the trending posts (e.g., like, comment).
As an admin, I want to add a new stock to the database because it allows users to track and invest in the most up-to-date stocks, so that the platform remains current and valuable to its users.	**Acceptance Criteria:** • Club members can search for posts tagged with their club's events. • Search results accurately reflect the events organized by the club. • Members can review feedback and coverage easily. **Failure Criteria:** • Search results do not include relevant event posts. • The search function does not recognize the club's events or tags. • Members are unable to access past event coverage or feedback.
As an admin, I want to be able to search for a user by his email/username, so that I can find a particular user.	**Acceptance Criteria:** • The user details are displayed if the admin enters the correct username/email. **Failure Criteria:** • If the user does not exist then a message saying that is shown.
As a user, I want the application to assess the risk level of my portfolio using an ML model, So that I can make informed decisions about risk management.	**Acceptance Criteria:** • The model correctly classifies portfolio risk. • Risk results are explained clearly to the user. **Failure Criteria:** • Incorrect risk classification. • Lack of clarity in the results.

As a user, I want the application to predict future stock prices using an ML model, So that I can decide when to buy or sell stocks.	**Acceptance Criteria:** • The model provides accurate price predictions. **Failure Criteria:** • Significant errors in predictions.
As a user, I want the application to suggest optimal asset allocation using an ML model, So that I can maximize returns based on my risk tolerance.	**Acceptance Criteria:** • The model suggests allocation that improves portfolio performance. **Failure Criteria:** • Suggested allocations lead to poor portfolio performance.
As an admin, I want to schedule or trigger retraining of ML models, So that the models remain up-to-date with recent market data.	**Acceptance Criteria:** • The admin can easily initiate model retraining based on new data. **Failure Criteria:** • Models cannot be retrained as needed, leading to outdated predictions.
As an admin, I want to control which users or roles have access to ML model outputs, So that sensitive model predictions are only available to authorized users.	**Acceptance Criteria:** • The admin can set clear permissions for users to access or modify model results. **Failure Criteria:** • Unauthorized users accessing sensitive model data.
As a user, I want to search latest stock prices and their basic upward-downward trend on the current day so that I can make the most profit from my trade.	**Acceptance Criteria:** • Traders can successfully search for stocks using its ticker symbol or company name. • Stock details should be accurate and latest (real time).

	• Upward- Downward symbol is displayed alongside percentage to show current trend. • Each stock result should display detailed information like trend analysis, financial metrics, price history etc. **Failure Criteria:** • The system fails to return stocks using company name or ticker symbol. • Stock details are not accurate or updated in real time. • Current trend symbol is incorrect or not displayed. • Stock information is incomplete or inaccurate.
As an user, I want to learn about historical patterns (2-5 years) and current trends of a specific stock and the overall market so that I can make informed decisions about purchasing or selling stock at the right time.	**Acceptance criteria:** • Historical data is displayed for the specified time range by the user accurately. • System displays up-to-date current trends and indicators. • The system provides an overall summary on market conditions and changes in a sector that affect the specific stock. • The data should be displayed in user-friendly format such as charts, graphs, tables, different filters and comparisons. • Navigation and understanding data should be easy. **Failure Criteria:**

	• The system is unable to return historical data or current trends and indicators (outdated info.) • Data is not displayed in user friendly format like charts, tables, graphs etc. • Navigation through the search section and understanding data is cumbersome.
As a user, I want to search for trending and stable (low risk) stocks so that I can confidently start learning and investing to build my portfolio.	**Acceptance Criteria:** • The system categorizes stocks based on risk level and current trend and explains the criteria for risk level and trends correctly to the user. • The search results correctly display currently trending and stable stocks. • User friendly interface and explanations for technical and financial terms to make beginners equipped with information. • A help tool for beginners for guided tutorials or FAQs. **Failure Criteria:** • The search results are not of relevant, trending or stable stocks. • Explanations or definitions of financial and technical terms are incorrect or complex to understand, or poorly displayed.

As an user, I want to filter stocks based on categories(e.g.,market-sectors, net growth range, price, risk level) so that I can efficiently browse and diversify my portfolio according to my requirements.	**Acceptance criteria:** • There should be a range of filtering options like market sectors, net growth range,price,risk level etc. and each criteria should be clearly explained to users. • Users can select one or multiple filters according to the needs of the user. • The filter interface is user friendly for users to easily add/adjust filtering criterias. • Sorting and grouping functions should be available to sort or group results based on filters. • Results of the filtered search should display an accurate list of stocks and its related data. **Failure Criteria:** • Sorting and grouping functions do not work correctly, leading to disorganized or incorrect displays of search results. • The system does not provide clear or accessible explanations for each filtering criterion. • The system fails to provide a range of filtering options.
As an user, I want to save my custom filters, so that I can easily identify my potential investments.	**Acceptance criteria:** • System provides a clear option to save a custom filter and is able to save an unlimited amount of such filters. • Users can label or name a custom filter. • An interface for saving, editing, renaming these saved filters.

	- Users can access information of stocks applying the filters in a single click. - A confirmation from the system if the filter is saved or is there any error and clear rectification of error should be provided. **Failure Criteria:** - There isn't a clear option to save a filter or it is difficult to find them. - The filters are not stored securely. - Editing or storing filters is slow and inefficient. - Users can't apply stored filters on a single click.
As an user, I want to browse stocks that have recently gone public or are going to go public (IPOs), so that I can evaluate and invest in potentially emerging companies.	**Acceptance criteria:** - A dedicated filter option or an interface for searching recently gone public stocks and upcoming IPOs. - Users can sort and filter IPOs based on various features like market capitalisation, IPO date, company size, industry sector etc. - The system updates the list of IPOs in real time. - Detailed and accurate information about IPOs should be available **Failure Criteria:** - The system does not provide a dedicated filter or interface for searching recently gone public stocks and upcoming IPOs.

	• The system displays inaccurate or outdated information about IPOs. • Users cannot sort or filter IPOs based on important features. • The list of IPOs is not updated in real-time.