IT314-Software Engineering

G-22 Weather Prediction System

LAB03 Use Case Modeling
And Product Backlog(Task-2)

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1. Product Backlog

Format: Front Card, Back Card and their Priority along with Acceptance Criteria.

FRONT	BACK
1.As a user, I want to view the current weather for my location so that I can make informed decisions about my day. Priority: High	Acceptance Criteria: - The user should be able to view recent temperature and weather conditions. - The location should be determined via user input.
2.As a new user, I want to create an account, so that I can have access to premium features. Priority: High	Acceptance Criteria: - The user should be able to register on the website. - The user, once registered, must be able to access premium features.
3.As a user, I want to view a 5 to 7 day weather forecast so that I can plan for the upcoming week. Priority: High	Acceptance Criteria: - The website should display daily forecasts for the next 5-7 days. - The user must be able to view the displayed forecasts.
4.As a registered user, I want to set alerts for severe weather conditions so that I am notified of extreme weather events. Priority: High	Acceptance Criteria: - Registered users must be able to enable alerts for unusual weather conditions such as heatwaves, thunderstorms, hurricanes, or blizzards. - Alerts must be sent to the registered users via emails to the email id mentioned by them during account creation.

5. As a registered user, I want to search for weather information by entering a location so that I can check the weather for any place. Priority: High	Acceptance Criteria: - Registered users must be able to input a location name or zip code. - The website should display the correct weather forecast for the entered location.
6. As a registered user, I want to view a weather map to see weather patterns and conditions visually. Priority: High	Acceptance Criteria: - The website must display a map with weather overlays, such as precipitation, temperature, and storm warnings. - Registered users must be able to view, zoom and span the map.
7. As a software developer, I want to implement an API to integrate external weather data sources into the system. Priority: High	Acceptance Criteria: - The API must be integrated with external weather data providers. - Data must be fetched, parsed, and stored in the system's database efficiently.
8. As a registered user, I want to customize the units of measurement for temperature, wind speed, and precipitation, so that I can view the forecast details in my preferred unit convention. Priority: Medium	Acceptance Criteria: - Registered users must be able to switch between metric (Celsius, meters per second) and imperial (Fahrenheit, miles per hour) units. - The website must display weather data in the selected units.
9.As a registered user, I want to save multiple locations to quickly check their weather forecasts. Priority: Medium	Acceptance Criteria: - Users must be able to add and remove locations from a list of favorites. - The saved locations must be easily accessible from the home page.

10. As a registered user, I want to receive tips and useful recommendations based on the current weather conditions. Priority: Medium	Acceptance Criteria: - The system must display advice or suggestions, such as "Wear sunscreen" on sunny days or "Carry an umbrella" on rainy days.
11. As a registered user, I want to view the air quality index for my location so that I am aware of the pollution levels in my region. Priority: Medium	Acceptance Criteria: - The site must display the air quality index along with a color-coded scale, min & max Temperature, Humidity, Precipitation.
12. As a data scientist, I want to train and test different weather prediction models to enhance forecast accuracy. Priority: Medium	Acceptance Criteria: - The system must support training and evaluation of machine learning models using historical weather data.
13. As a weather department representative, I want to provide official weather reports and updates so that I can ensure that accurate information is disseminated to the public. Priority: Medium	Acceptance Criteria: - The system must be able to integrate with weather department feeds for official reports. - Updates must be automatically pushed to the website.
14. As a registered user, I want to share weather information with friends or family through social media or messaging apps. Priority: Low	Acceptance Criteria: - Registered users must be able to share weather updates via social media platforms or messaging apps. - Shared content must include a link or screenshot of the weather information.

15. As a registered user, I want to switch to dark mode to reduce eye strain in low-light conditions. Priority: Low	Acceptance Criteria: - The registered user must be able to toggle between dark and light mode.
16. As a registered user, I want to provide feedback on the accuracy of weather forecasts so that it helps the system to improve. Priority: Low	Acceptance Criteria: - Registered users must be able to submit their feedback on forecast accuracy directly through their account on the website.
17. As a farmer, I want to receive crop-specific weather alerts so that I can take necessary precautions to protect my crops from adverse weather conditions. Priority: High	Acceptance Criteria: - The system allows the farmer to specify the type of crops they are growing. - The system sends tailored weather alerts (e.g., frost warnings, heavy rain forecasts) based on the crop type and location. - Alerts include actionable advice, such as covering crops or adjusting irrigation.
18. As an admin, I want to manage user roles and permissions within the weather prediction system to ensure that different types of users (e.g., farmers, data scientists, etc) have appropriate access levels. Priority: High	Acceptance Criteria: - The admin interface allows creating and managing user roles (e.g., farmer, data scientist, general user). - Permissions can be set for each role, determining what data and features each user type can access. - The admin can update or remove roles and permissions as needed.