

Universidad Politécnica de Aguascalientes

Computer Systems Engineering

Course: Mobile programming

Integrator Project Progress

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Product name

CLOUDY.

The application is called CLOUDY because it focuses on rainfall prediction by analyzing images of the sky. This name reflects its purpose: to analyze clouds and provide detailed weather information based on cloud classification, in addition to other atmospheric factors such as pressure, humidity and temperature. CLOUDY uses this information to provide more accurate forecasts, making it a useful tool for both casual users and specific sectors that need reliable weather data, such as agriculture or outdoor events.

Description

CLOUDY is a mobile application that allows users to predict rainfall by analyzing photographs of the sky, complemented with atmospheric pressure, humidity and temperature information. This approach allows to offer more accurate forecasts than traditional weather applications by focusing on cloud classification. Thus, CLOUDY becomes a unique and useful tool for both casual users and specific sectors that depend on accurate weather information, such as the agricultural sector or outdoor events.

Scalability of CLOUDY as a SaaS solution.

CLOUDY is designed to scale as a SaaS service through subscriptions and a multi-tenant architecture that allows multiple users to share the same infrastructure while keeping their data separate. This scalability allows CLOUDY to adapt to the needs of independent users and small businesses, providing options for climate monitoring across multiple locations, access to shared accounts and a centralized management interface for enterprise customers.

CLOUDY offers several subscription plans:

- **Basic Plan:** aimed at casual users, includes ads and a photo limit.
- **Paid Plan:** No ads and unlimited photos.
- **Enterprise Plan:** Includes all the advantages of the paid plan, plus the ability to manage multiple accounts.

This plan structure allows CLOUDY to serve a wide variety of users, from individuals to small businesses, ensuring an experience tailored to their specific needs.

Competitive Analysis

In the weather forecasting market, competitors such as ClimaCell, WeatherBug and Weather Google all have strengths and weaknesses that highlight CLOUDY's advantages.

ClimaCell:

- **Strengths:** ClimaCell specializes in high-accuracy forecasts using IoT data and advanced dashboards, making it a powerful option for enterprises.
- **Weaknesses:** However, this sophistication and its high cost make it less accessible to the common user.

WeatherBug:

- **Strengths:** WeatherBug offers a simple and accessible application for general forecasting.
- **Weaknesses:** Lacks the image analysis and cloud classification capabilities offered by CLOUDY.

Google Weather:

- **Strengths:** This app offers the option to select the time of day to search for the weather forecast for the selected time. It allows access to weather information quickly and easily through a search. It is only necessary to type "weather" followed by the location to obtain updated and relevant predictions.
- **Weaknesses:** Its interface can be unintuitive for the user as there is no reference to each aspect, as well as unpleasant to the eye. Although it provides general weather information, it lacks in-depth analysis and real-time pictures.

CLOUDY:

- **Advantages:** CLOUDY is positioned as an advanced yet affordable solution that provides customized predictions without requiring advanced technical knowledge. It offers detailed image analysis and accurate cloud classification, overcoming the limitations of its competitors.

Advantages and disadvantages

CLOUDY stands out for its accuracy, scalability and ease of access from an intuitive mobile application. Its combination of visual and atmospheric data allows for more reliable predictions, which sets it apart from traditional weather apps. However, it depends on the availability of clear sky imagery, which can be a limitation in low visibility conditions. In addition, image processing and cloud infrastructure can represent considerable costs, affecting the price of your subscriptions.

Advantages of CLOUDY:

- **Real-time accuracy:** uses real-time imagery to detect weather in the area, providing more accurate data.
- **Competitive comparison:** Unlike other applications that only provide estimates and may be inaccurate, CLOUDY constantly updates information.
- **Combined visual and atmospheric data:** This combination allows for more reliable forecasts.
- **Ease of access:** The mobile application is intuitive and easy to use.
- **Scalability:** It can be adapted to the needs of different users, from individuals to small companies.

Disadvantages of CLOUDY:

- **Dependence on the availability of clear images:** In low visibility conditions, accuracy may suffer.
- **Considerable costs:** Image processing and cloud infrastructure can represent considerable costs, which can affect the price of your subscriptions.
- **Geographic limitation:** Currently intended for users within Aguascalientes.

- **Lack of live simulations:** Cannot generate “live” simulations of wind or weather conditions, as these are simulations that often do not reflect real conditions.

Market Strategy and Monetization

CLOUDY's target market includes both individual users and small businesses that need accurate and affordable weather forecasts. Potential customers include motorcyclists and farmers, as both groups are significantly affected by the sudden onset of rain. For motorcyclists, it is crucial to know whether they should wear a raincoat, while farmers need to determine whether they should wait for rain or hire a pipe to irrigate their crops.

For the CLOUDY app, three types of tiered subscriptions are planned:

- **Free Subscription:** includes advertisements and a limit of in-app queries (3 per day). This plan is designed for casual users who need basic access to weather information.
- **Paid Subscription:** In this plan, no ads will be shown and the user will be able to make unlimited queries during the day. It is oriented to users who require constant and uninterrupted weather information.
- **Enterprise Subscription:** Offers the same advantages as the paid subscription, but with the additional capability of managing multiple users within the same company. This plan is ideal for small businesses that need to coordinate their activities based on accurate weather conditions.