

OPSC 7312

# Poe Part 1 Planning and Design

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## Introduction:

In a realm where technology gracefully converges with the natural world, BirdWise takes flight as a groundbreaking mobile application tailored explicitly for impassioned birdwatching enthusiasts. As we stand at the crossroads of technological ingenuity and a deep reverence for the avian realm, BirdWise emerges to enrich the tapestry of birdwatching experiences. This visionary app seamlessly weaves together cutting-edge tools and features, offering an intricate dance between intelligent bird identification, immersive species exploration, vibrant community interaction, and bespoke recommendations, all harmonising within the confines of a handheld screen.

Within the pages of this planning and design opus, we embark on an odyssey to unveil the nuanced layers of BirdWise—an expedition that navigates through its myriad attributes and the artistry of its meticulous design. From harnessing the prowess of machine learning for instant bird identification to crafting captivating gamified challenges, BirdWise embodies a symphony of technological mastery and the warmth of community spirit. It provides users with an intuitive means to identify avian species, a portal into comprehensive species profiles, a platform to share sightings, and a curator of personalised birdwatching journeys. BirdWise stands as an indispensable companion for both seasoned birding connoisseurs and curious initiates, eager to unfurl the vibrant narratives of the avian realm.

This document serves as our navigational chart, guiding us through the creation of BirdWise—an expedition that fuses imaginative features with an interface that breathes seamless. As we voyage through project requisites, chart the course of development, and illuminate data management strategies, the vision of BirdWise crystallises. It envisions an app that artfully intertwines the digital and natural worlds, nurturing an ecosystem where knowledge blossoms, appreciation flourishes, and a community of avian enthusiasts finds not only a hub but a sanctuary of shared passion.

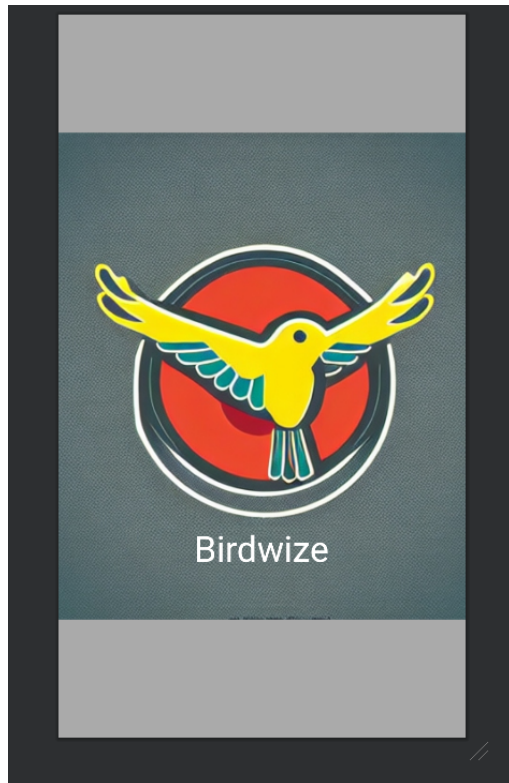
## Logo



For the creation of our logo, we utilised Silhouette Studio, a powerful design software specifically tailored for designing with Silhouette cutting machines. The logo design process took place on August 24, 2023. Silhouette Studio proved to be an exceptional tool, offering a user-friendly interface and a wide range of features. We leveraged its capabilities to create and manipulate shapes, incorporate custom text with various fonts, and apply colours and effects to bring our logo to life. The software's precise alignment and arrangement tools ensured a professional and visually appealing composition.

## Features and designs

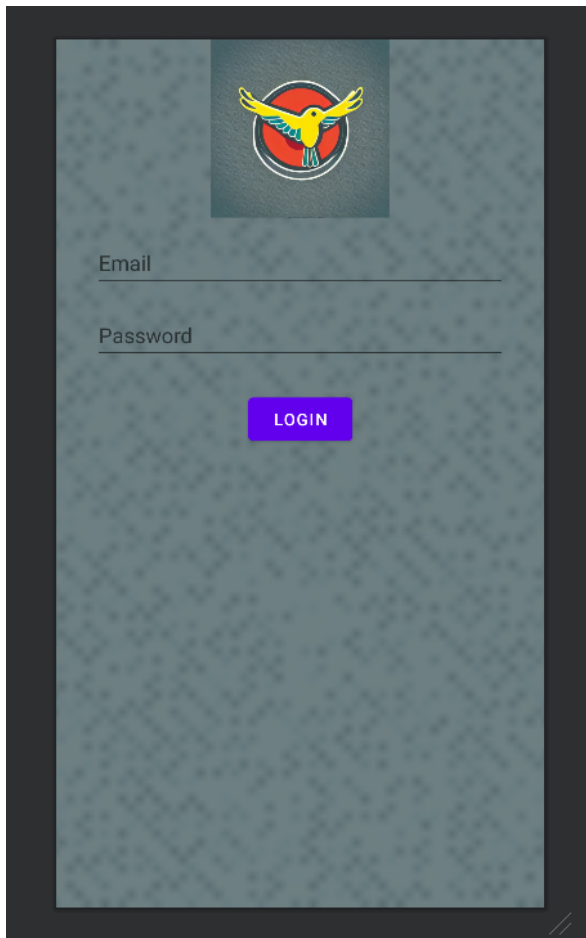
### Splash Screen / Logo



The splash screen welcomes users upon app launch, featuring the BirdWise logo and app name. It creates an engaging transition from the user's tap to the app's interface, leaving a memorable first impression. The logo embodies the ethos of birdwatching and the app's identity.(Android Developers, 2023a)

The splash screen serves as the initial greeting for users when they launch the BirdWise app, captivating their attention with the captivating BirdWise logo and prominently displaying the app's name. This carefully crafted screen facilitates a seamless transition from the user's tap to the app's interface, setting the stage for an immersive bird watching experience. The logo itself encompasses the very essence of birdwatching and embodies the core values and identity of the BirdWise app. Its design reflects the awe-inspiring beauty of birds, capturing their grace, elegance, and vibrant colours. By combining artistic elements with symbolic representations of avian life, the logo establishes an instant connection with bird enthusiasts and conveys the app's commitment to fostering a deeper appreciation for the avian world. The splash screen, with its visually striking logo and impeccable attention to detail, leaves an indelible impression on users, igniting their curiosity and anticipation as they embark on their birdwatching journey with BirdWise.

## Login/Registration

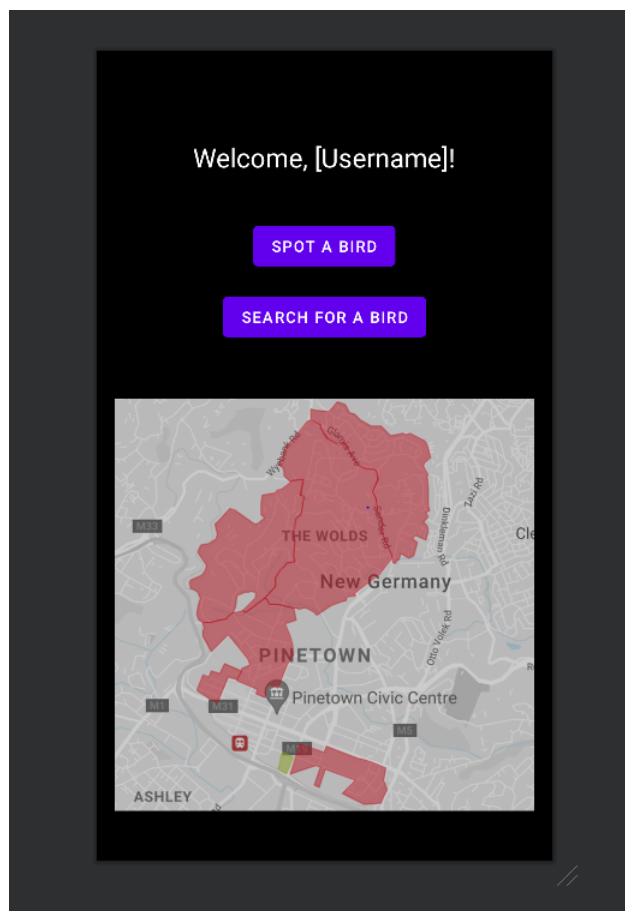


Utilising the robust Firebase Authentication service, the login and registration screens offer a trusted and reliable mechanism for user verification and access control. With Firebase Authentication seamlessly integrated into the app's login process, users can confidently log in using their existing credentials, such as email and password, or opt for a hassle-free authentication method like social media sign-in. This not only enhances convenience but also ensures the security and privacy of user data. (Android Developers, 2023a)

For new users, the registration page follows a similar user-friendly approach, guiding them through the process of creating an account securely. By leveraging Firebase Authentication's capabilities, the registration page incorporates necessary validation checks, such as password strength requirements and email verification, to guarantee the authenticity and integrity of user accounts. This instils confidence in users that their personal information will be safeguarded and that they will have a smooth onboarding experience.

The combination of the Firebase Authentication service and thoughtfully designed login and registration screens establishes a robust framework that grants authorised individuals access to their personalised experiences within the app while protecting their data from unauthorised access. This ensures a secure and trustworthy environment for users to interact with the BirdWise community and explore the app's features and functionalities.

## Dashboard



The dashboard in the BirdWise app serves as a personalised hub for bird watching activities. Leveraging the power of Firestore and SQLite, it offers users seamless access to a range of features. Users can effortlessly spot birds, search for specific species, and explore a map highlighting birdwatching hotspots. The combination of Firestore and SQLite ensures efficient storage and retrieval of relevant information, enabling users to access their data quickly and enjoy a smooth and immersive bird watching experience within the app.

## SQLite and Firebase Integration

The app seamlessly integrates SQLite for local data storage and retrieval, guaranteeing a smooth user experience even when offline. It leverages the power of Firebase for real-time synchronisation and cloud-based storage of user settings, bird observations, and other dynamic data. This combination of technologies allows for efficient management of both local and cloud-based data, enabling users to access and update information in real-time while ensuring data consistency and reliability across devices. (Android Developers, 2023a)

## Requirements of the App

The functional requirements of the app are centred around its core features and user experience. These requirements include:

- **Mapping:** The app should integrate mapping capabilities to display birdwatching hotspots, user locations, and routes. This feature will enable users to easily identify and explore bird watching locations on a map.(Ellis, 2023)
- **Tracking:** The app needs to utilise location services to track users' real-time movements. By tracking their location, users can record their bird watching activities, monitor their progress, and gather valuable data about their bird watching experiences.
- **Design:** The app's user interface should be designed to be intuitive and visually appealing. It should prioritise ease of use, allowing users to navigate the app seamlessly and enjoy a pleasing visual experience while engaging in bird watching activities.
- **Bird Identification:** The app should include a bird identification feature that allows users to identify bird species they encounter during their bird watching activities. This feature can utilise image recognition technology or user input (such as describing the bird's characteristics) to provide accurate bird species identification. It will enhance the app's educational aspect and help users expand their knowledge of different bird species.

By incorporating these functional requirements, the app will provide users with a comprehensive and user-friendly tool for birdwatching. It will offer mapping functionality, real-time tracking of their movements, and an aesthetically pleasing design, enhancing their overall bird watching experience.

## Species Database & Profiles

BirdWise utilises a combination of APIs and Firebase to create a comprehensive database of bird species. Through the integration of APIs from reliable and authoritative sources, such as scientific databases and ornithological organisations, BirdWise fetches detailed information about bird species including their habitat, behaviour, migration patterns, and conservation status. The fetched data is then stored and maintained in Firebase, a cloud-based platform that offers real-time synchronisation and storage capabilities. By leveraging Firebase's NoSQL database, the bird species data can be efficiently stored, accessed, and updated. This enables BirdWise to provide users with educational and awareness-building features, such as detailed bird profiles, fostering a deeper understanding of different bird species and promoting conservation efforts.

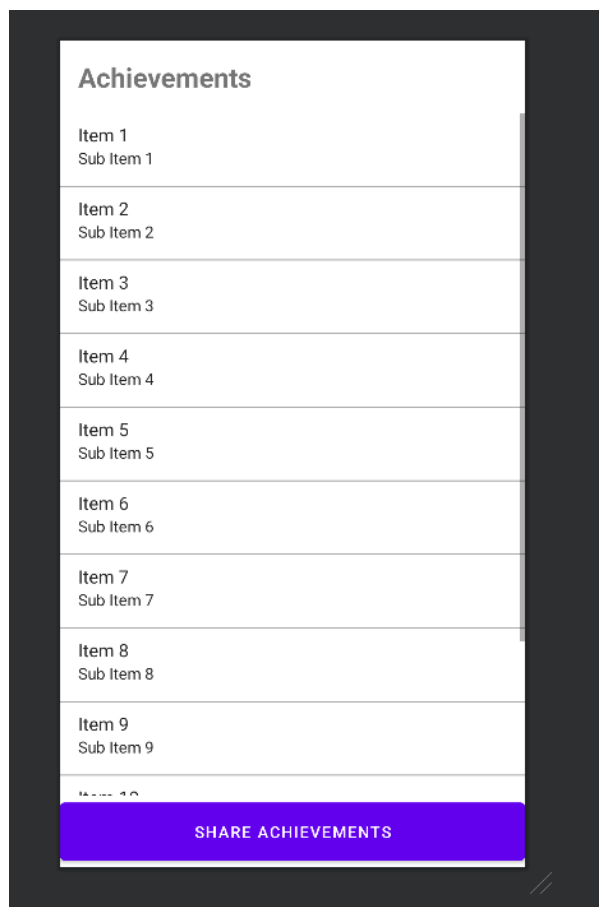
## Community Interaction & Sharing

The app includes a community interaction and sharing feature that encourages users to actively engage with fellow enthusiasts and contribute to citizen science initiatives. Users have the ability to share their bird sightings with the community by pinpointing the locations, uploading photos, and adding notes or descriptions to their sightings. This fosters a sense of



community among birdwatching enthusiasts, allowing them to connect, share experiences, and learn from each other. By contributing their sightings, users also contribute valuable data to citizen science initiatives, aiding in bird population monitoring and research efforts. The feature promotes collaboration, knowledge-sharing, and a deeper appreciation for birds and their habitats within the BirdWise community.

## Birdwatching Challenges & Achievements:

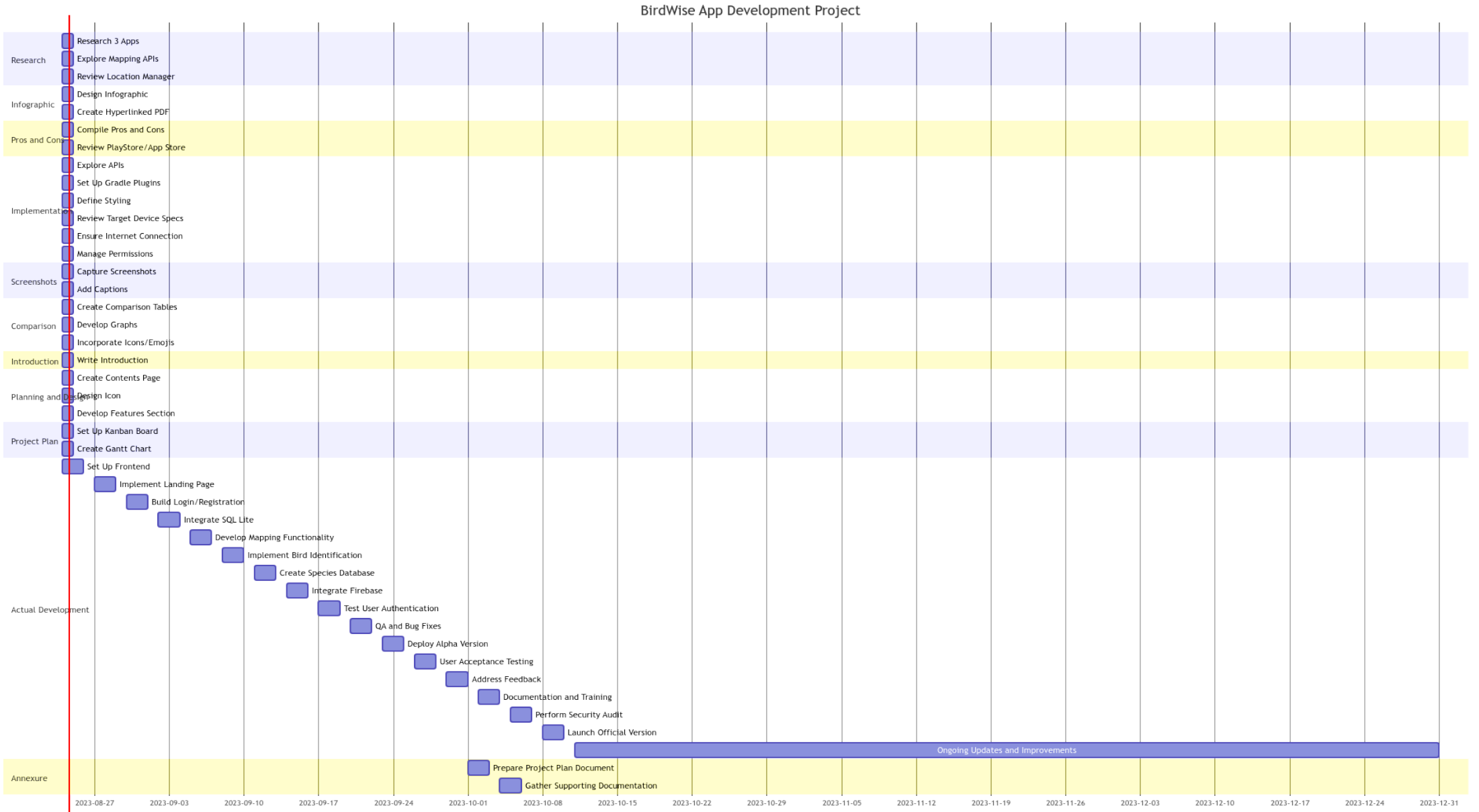


BirdWise incorporates a gamification aspect by offering birdwatching challenges and achievements to users. These challenges can vary from spotting specific bird species to recording a certain number of sightings within a given timeframe. Users are motivated to explore new locations, observe different species, and actively participate in bird watching activities to unlock achievements and complete challenges.

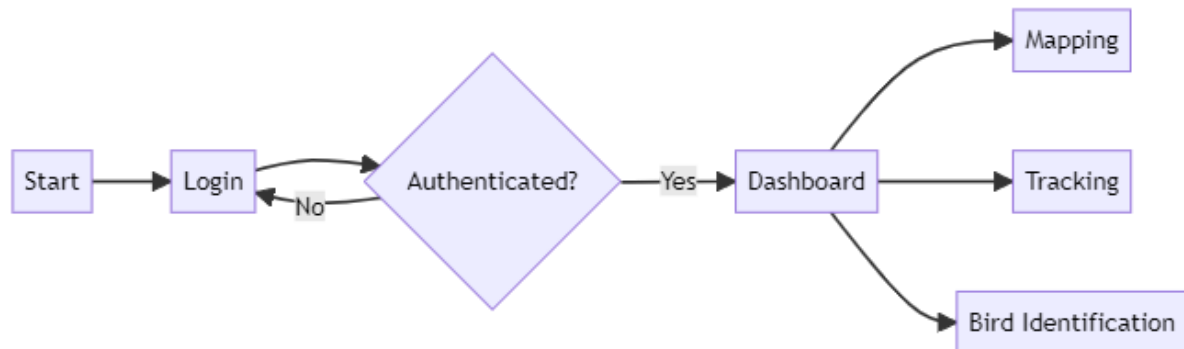
The challenges and achievements feature adds an element of fun, excitement, and motivation to the user experience. It encourages users to set goals, strive for accomplishments, and continuously expand their birdwatching skills and knowledge. By engaging in these challenges, users can challenge themselves and celebrate their progress as they discover and document various bird species.

This gamified approach not only enhances user engagement but also fosters a sense of accomplishment and satisfaction. It inspires users to explore new areas, learn about different bird species, and contribute to their own personal growth as birdwatching enthusiasts.

By incorporating birdwatching challenges and achievements, BirdWise creates an immersive and captivating experience that combines education, community engagement, and entertainment. It encourages users to actively participate in birdwatching, deepen their understanding of avian life, and share their achievements with the community, further enhancing the overall bird watching experience within the app.



## flow of logic



The flow diagram represents the logical sequence of actions in the app. It begins with the user starting the app and being directed to the login screen. After entering their login credentials, the app checks if the user is authenticated. If they are authenticated, they are directed to the dashboard screen.

The dashboard screen serves as a central hub for the user's bird watching activities. From the dashboard, the user can access various features. The "Mapping" feature enables the user to view birdwatching hotspots, their own location, and routes on a map. The "Tracking" feature utilises location services to track the user's movements in real-time, allowing them to record their bird watching trails and gather data about their activities.

The "Bird Identification" feature allows the user to identify bird species they encounter during their bird watching activities. This feature can utilise image recognition or user input to provide accurate identification, enhancing the user's knowledge of different bird species.

## KanBan

<https://github.com/users/keaganTomlinson/projects/2>

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