2024

Hawai’i Annual Code Challenge (HACC)

Challenge Title	Aloha Birds
Department / Organization	Hui Manu o Kū
Subject Matter Contact	Rich Downs
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The Challenge	
Describe situation to be solved	Our Challenge is to develop a game similar to Pokémon Go that runs on mobile devices that has players searching for birds in Hawaii. Players will be rewarded for virtually photographing various bird species as they move about in a manner similar to Pokémon Go. The game, tentatively called "Aloha Birds," is a mobile augmented reality (AR) adventure that invites players to explore the lush landscapes of Hawaii in search of native and non-native bird species.
Preconditions *(How does it work now)*	This is a new capability that seeks to build on the Pokemon Go model to connect people with the birds of Hawaii.
Assumptions/Issues *(list any conditions that could impact the solution)*	The AR piece of the solution assumes availability of a suitable AR engine.
Current Approach *(how is situation currently being handled)*	There currently are no comperable capabilities.
Users *(Who would use the application - employees or constituents or both? How many users would there be?)*	Players will use their smartphones to move through real-world environments, uncovering and photographing virtual birds that are superimposed on their surroundings via AR.
Business Rules	Key Features: 1. Birdwatching Adventures: a. As players move through different Hawaiian ecosystems (beaches, forests, mountains, urban areas, etc.), they encounter various bird species found in the islands, such as the ‘Iʻiwi, Nēnē, and Pueo. b. The game uses GPS to place these birds in locations that mimic their natural habitats. For example, seabirds might be found near coastal areas, while forest birds could appear in nature reserves or parks. 2. Augmented Reality Encounters:

	a. When a bird is nearby, players can use their phone's camera to view the bird in AR. They'll need to carefully approach the bird and "capture" it by photographing it by doing a screenshot ("snapture") within a designated time frame. b. Each bird has unique behaviors and movements, making some more challenging to photograph than others. Players need to be quick and accurate to get the best shot. c. Bonus points can be awarded by taking photos and correctly identifying actual bird species occuring nearby. 3. Bird Encyclopedia: a. Every bird photographed is added to the player's in-game avidex or bird encyclopedia, which includes detailed information about the species, its habitat, and conservation status. b. Players can learn about Hawaii's unique birdlife and the importance of conservation efforts. c. The avidex is organized by ecosystem, with birds assigned to the relevant ecosystem. 4. Challenges and Achievements: a. The game offers daily and weekly challenges, such as photographing a certain number of birds, photographing rare species, or visiting specific locations. b. Players earn achievements for milestones like completing each ecosystem in their avidex, visiting all the islands, or capturing particularly elusive birds. 5. In-Game Events: a. Special events tied to real-world seasons and bird migrations could be hosted in the game. For instance, during certain times of year, players might encounter a greater variety of seabirds, or migratory species could appear for a limited time. b. Players can team up for events, participating in cooperative challenges to earn group rewards. 6. Customization and Social Features: a. Players can customize their avatar, binoculars, and other gear with items earned from challenges or purchased with in-game currency. b. The game has social features allowing players to share their bird captures on social media, join birdwatching clubs, or compete in leaderboards based on their birding achievements. 7. Conservation Efforts: a. To raise awareness about endangered species, the game could include educational content about conservation efforts in Hawaii. Players might even have the option to donate to local conservation organizations directly through the app. b. Virtual conservation initiatives might also be incorporated, where players can participate in activities like "planting trees" or "cleaning beaches" in-game to help preserve bird habitats.

Special Requirements	App must be able to download and interact with data about bird species player is likely to encounter based on their physical location. Ideally the app will be able to download the data for use in an offline mode when the player enters locations with limited cell service. This functionality not critical for proof of concept.
Technical Platforms *(in use or desired to be used)*	Augmented Reality game engines like Unity or Unreal and develop some kind of "proof of concept".
Data set to be used or collected	Species occuring in the game will be based on data obtained from eBird. Bird sightings by players will be collected for offline review and submission to eBird.
Data set calculations or reporting needs	Actual sightings reported via the app will need to include the GPS location of the player, date and time of the sighting, species names and number of individuals of each species seen. Actual sightings would result in bonus points and the ability of the app to provide this functionality is not core.
Solution Road Map	
Basic Flow *(steps of user action/system response)*	1. Explore: Players walk around real-world locations, with their phones acting as a birdwatcher's guide. Notifications alert them when a bird is nearby. 2. Capture: When close to a bird, the player uses AR to spot and photograph it. The better the photo (in terms of angle, focus, and proximity), the more points they earn. 3. Collect and Learn: Each captured bird is added to the player's collection, along with educational information. Players aim to complete their bird encyclopedia by finding all the species. 4. Compete and Collaborate: Players can participate in global leaderboards or join teams to complete collaborative challenges.
Goal of Solution	"Aloha Birds" combines the thrill of exploration with the joy of discovering Hawaii's unique avian life, making it both a fun and educational experience for players of all ages.
Business Value *(potential financial or time savings)*	The goal of the game is to connect people with birds in a novel way, leveraging the demonstrated ability of the Pokemon Go model to motivate all ages to get out and engage with their surroundings.
Success Scenario *(how you know a solution is working)*	Success will be measured in terms of players gaining an increased awareness and appreciation for Hawaii's birds through use of the game.
To be completed by the HACC Planning Committee	
Community/Industry Data Available	
Potential Community/ Industry Co-Sponsors	