REPUBLIQUE DU CAMEROUN

****

Paix - Travail - Patrie

****

INSTITUT AFRICAIN
D'INFORMATIQUE

REPUBLIC OF CAMEROON

****

Peace – Work -Fatherland

****

AFRICAN INSTITUTE OF
COMPUTER SCIENCE

**ADVANCE OBJECT
ORIENTED PROGRAMMING
(django , flask) REPORT**

LOCATION TRACKING SYSTEM
Group 12

Written by

RAINGOU NGOUYAP HERBERT.

HANS MANFRED NGALLE

TENDA TATHO PATRICK PHAREL

NANA KAMI DYLANDE

BISSOUKEN BAKONDA BORIS

DJOUMESSI DYLAN

MONJIE AMSTE RANCE

DJANI NANDA ROOSVELT PETRUS

NANDJOU TSANANG DANY FRANK

NDOMEI STEPHANE HARRY

Course Instructor

Mr PRINCE

Academic Year

2023 - 2024

TABLE OF CONNTENT

INTRODUCTION

This report outlines the design and functionality of a proposed web application aimed at improving location tracking for users who want to save and revisit interesting places they encounter. The application will provide users with the ability to save locations automatically, categorize them, and retrieve them efficiently. This document will cover the app's features, user interface design, and potential use cases. The primary objectives of the location tracking web app are to enable users to save their current location automatically, allow users to attach images, names, and categories to saved locations, provide a map view of saved locations with search and filter capabilities, and allow users to modify the details of saved locations.

The app will feature an intuitive interface for adding and managing locations, ensuring ease of use. Users can view all their saved locations on an interactive map, search for saved locations by name, and filter them by categories and specific areas. The app will also allow users to update the coordinates, name, category, and image of any saved location, and delete locations they no longer wish to keep. By offering these features, the app aims to enhance the way users save and recall locations, offering a practical solution to a common problem faced by many.

Problem Statement

While traveling or exploring new places, users often come across interesting locations they wish to revisit. However, remembering the exact location of these places can be challenging. This web app aims to solve this problem by allowing users to save locations with additional details, making it easier to find and revisit them later

OBJECTIVES

The primary objectives of the location tracking web app are:

1. Enable users to save their current location automatically.
2. Allow users to attach images, names, and categories to saved locations.
3. Provide a map view of saved locations with search and filter capabilities.
4. Allow users to modify the details of saved locations.

FEATURES

Location Saving

Automatic Location Capture

When a user decides to save a location, the app automatically captures the user's current GPS coordinates using the device's geolocation capabilities. This ensures that the exact position is recorded without any manual input required, reducing the likelihood of errors and ensuring accuracy. The use of real-time GPS data helps users save locations effortlessly, making the process quick and seamless

Custom Input

In addition to capturing the GPS coordinates, the app allows users to add additional details to each saved location. Users can provide a name for the location, helping them easily identify it later. They can also categorize the location into predefined types such as bar/restaurant, hotel, clothes shop, etc., which aids in organization and retrieval. Moreover, users can upload an image of the place, providing a visual reference that can enhance memory recall and make the saved location more recognizable

User-Friendly Interface

The app is designed with a focus on user experience, featuring an intuitive interface that simplifies the process of adding and managing locations. The interface includes clear, easy-to-navigate menus and prompts, ensuring users of all technical skill levels can use the app effectively. Interactive elements such as buttons and forms are designed to be responsive and accessible, allowing users to quickly save new locations, delete locations view their saved spots, and manage their data without confusion or difficulty. The goal is to make the entire experience straightforward and enjoyable, encouraging users to regularly use the app to track their favorite places.

Location Viewing

Map Integration

The app integrates with an interactive map, allowing users to view all their saved locations in a visual and intuitive manner. This map provides a geographical representation of all saved spots, making it easy for users to see where each location is relative to their current position and to other saved places. The map is zoomable and pannable, ensuring that users can explore different areas and get a detailed view of specific locations.

Detail Display

Each saved location on the map will display its name and category when selected. This feature provides users with essential information at a glance, helping them quickly identify and differentiate between various saved spots. The details are displayed in a pop-up or info window, which appears when a user clicks on a location marker. This way, users can access important information without leaving the map interface.

Search and Filter

To enhance usability, the app includes robust search and filter functionalities. Users can search for saved locations by name, making it easy to find specific places quickly. Additionally, they can filter locations by categories (e.g., bar/restaurant, hotel, clothes shop) and specific areas (e.g., Nkolbisson, Awae). This filtering capability allows users to narrow down their view to relevant locations, simplifying the process of finding the exact spot they are looking for.

List View Option

In addition to the map view, the app offers a list view option for users who prefer a textual representation of their saved locations. This list format provides an alternative way to browse and manage saved places, displaying them in a structured and organized manner. Each entry in the list includes the name, category, and image of the location, with options to view, edit, or delete the entry. This dual-view approach caters to different user preferences and ensures a versatile and flexible user experience.

Location Modification

- **Edit Saved Locations**: Users can update the coordinates, name, category, and image of any saved location.
- **Delete Functionality**: Users can delete locations they no longer wish to keep.

Class Diagram for Location Tracking System Web App

Below is a detailed class diagram for the proposed location tracking web app, illustrating the relationships between different classes and their attributes and methods
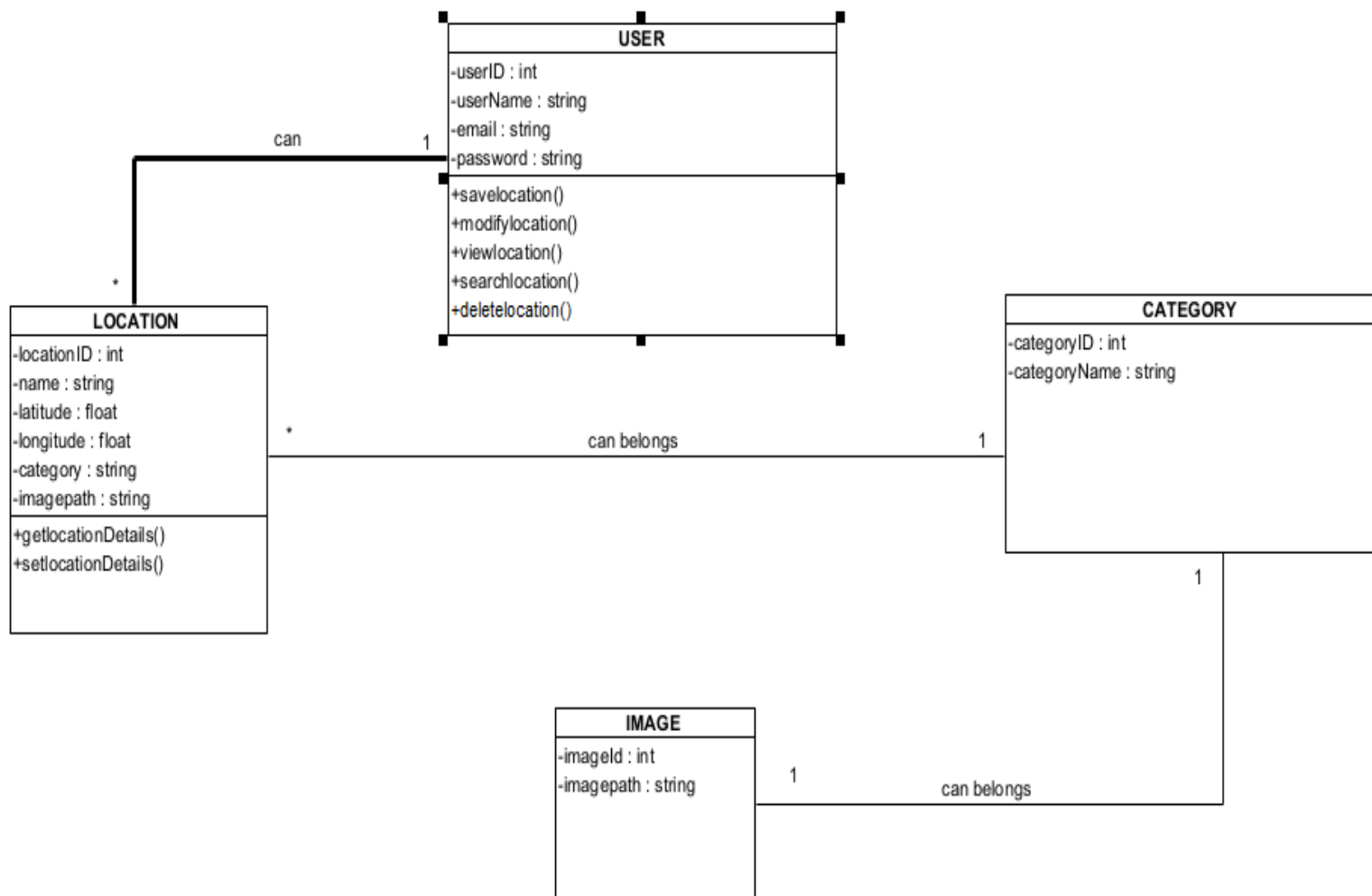

Figure 1CLASS DAIGRAM

-

CONCLUSION

The proposed web app addresses the common problem of forgetting interesting places discovered while traveling or exploring new areas. By providing features for saving, categorizing, viewing, and modifying locations, the app ensures users can easily manage and revisit their favorite spots. The use of modern web technologies and APIs ensures a seamless and efficient user experience.

This report provides a compehensive overview of the location tracking web app, detailing its features, design, use cases, and technical implementation. The app promises to be a valuable tool for travelers, locals, and professionals alike, ensuring that no memorable place is ever forgotten.