

Design and Implementation of UDINDER: A Tinder-inspired Dating Application

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Abstract—

I. INTRODUCTION

UDinder is a cutting-edge dating platform that leverages the power of object-oriented programming (OOP) to create a seamless and intuitive user experience. In UDinder, each user profile is represented as an object, encapsulating a wealth of information including personal interests, photos, and preferences. By utilizing OOP principles such as encapsulation, inheritance, and polymorphism, UDinder ensures efficient data management and facilitates smooth user interactions.

Encapsulation in UDinder ensures that user data is securely stored within profile objects, allowing for controlled access and manipulation. This promotes privacy and data integrity, crucial aspects of any modern dating platform. Additionally, inheritance enables the creation of specialized profile types, catering to diverse user preferences and demographics. Whether it's for casual hookups, meaningful relationships, or platonic connections, UDinder offers tailored experiences to suit every user's needs.

Polymorphism in UDinder allows for dynamic and adaptable interactions between users. By treating different profile types as instances of a common superclass, UDinder fosters a flexible matchmaking environment where compatibility is key. Whether it's through algorithmic matching or manual browsing, users can discover potential matches with ease, confident in the platform's robust architecture and intelligent algorithms.

UDinder is not just another dating app; it's a testament to the power of object-oriented programming in revolutionizing the way we connect and form relationships in the digital age. With UDinder, finding love has never been more intuitive, efficient, and fun.

II. DESIGN AND ARCHITECTURE

A. User Interface Design

The user interface of UDINDER is designed to be intuitive and visually appealing, with a focus on simplicity and ease of use. The main components include:

- User registration and profile creation
- Swiping interface for browsing potential matches
- Messaging system for communication between users

B. Backend Development

The backend infrastructure of UDINDER is built using a combination of technologies, including:

- Node.js for server-side logic
- Express.js for routing and middleware
- MongoDB for storing user data and preferences
- Firebase for real-time messaging functionality

III. METHODS AND MATERIALS

A. Methods

This project aims to develop a functional online store platform. For this purpose, the following technical decisions will be made. First, Python version 3.12.1 will be used for the development of the logical part of the software, and the FastApi framework will also be used for communication between the different layers of the platform. For the data layer, we will use an ORM tool, in this way the SQLAlchemy library is selected which will facilitate the connection of the database from the backend of the platform and thus be able to manage the database with a syntax similar to that of the python programming language. The softwares Html, CSS, and Javascript will be used for the development of the frontend, in the same way, the Apache server software will be used to deploy the application as localhost and the Django framework will be used to obtain a better graphical interface. Regarding the development process, we decided to use the GitHub hosting software to facilitate the cooperative development of the online sales platform and the management of its versions.

Class diagram decisions: It was decided to use a User class, because it contains the necessary attributes to identify the user, define their type of access (buyer or administrator) and the methods to create the account and log in.

Users can create and customize their profiles, including photos, bio, and preferences such as age range and location.

B. Matching Algorithm

UDINDER employs a matching algorithm similar to Tinder's, which uses swiping gestures to indicate interest or disinterest in potential matches. Matches are based on mutual likes and geographical proximity.

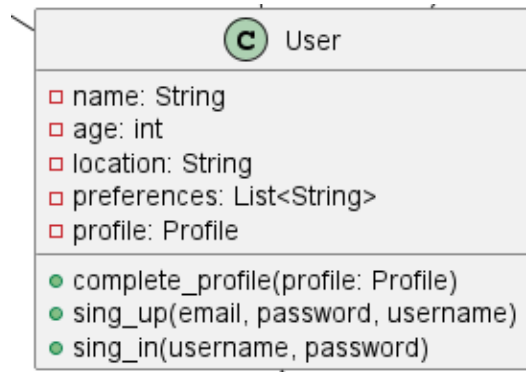


Fig. 1. USER

C. Messaging System

Once a mutual match is made, users can initiate conversations through the built-in messaging system, facilitating further interaction and connection.

IV. TESTING AND EVALUATION

Preliminary testing of UDINDER was conducted with a group of beta testers to assess usability, performance, and user satisfaction. Feedback was collected through surveys and interviews, and initial results indicate positive reception of the app's features and functionality.

V. CONCLUSIONS

In conclusion, UDINDER represents a successful implementation of a Tinder-inspired dating application, offering users a platform for connecting with potential romantic partners in their vicinity. Future work will focus on refining the app's features, optimizing performance, and expanding user base through marketing and outreach efforts.

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