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Digital Helper System for Senior Citizens

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***Abstract*—**In today's fast-paced society, many elderly and differently-abled individuals often face difficulties in managing daily tasks such as purchasing medicines, shopping, or receiving home support, especially when they are alone. Current volunteer assistance methods are largely unorganized, relying on informal networks or offline coordination, which leads to delayed help, inefficient task allocation, and lack of accountability. To address these challenges, the Volunteer Assistance Platform implements a robust, secure, and scalable web-based system designed to facilitate seamless interaction between individuals in need and volunteers. The system incorporates a dual-mode incentive mechanism: volunteers may receive travel reimbursements or service charges for paid tasks, while altruistic volunteers can contribute freely, with both categories earning reward points based on task completion and client satisfaction.

***Keywords*—**Volunteering, Elderly Care, Web Platform, Incentive Mechanism, Community Support.

I. INTRODUCTION

Volunteering is defined as unpaid time spent to benefit others, rooted in altruism and a genuine desire to make a positive impact on the community. While it offers numerous personal benefits, including personal growth and improved mental well-being, current systems for managing these services are often decentralized and inefficient.

The primary objective of this project is to develop a secure platform for connecting volunteers with individuals in need, facilitating services like shopping, medicine purchase, and home help. This is achieved through a verification system to ensure trust and a credit-based incentive system to maintain volunteer motivation.

II. SYSTEM ANALYSIS

A. Problem Statement

The Volunteer Assistance and Coordination System faces challenges such as the absence of a centralized platform, which leads to delays and a lack of proper documentation. Security is a critical concern due to the lack of formal verification for both volunteers and recipients. Furthermore, the lack of structured incentives often results in low volunteer retention.

B. Existing System

The traditional setup relies on manual coordination via phone calls or emails, which often results in miscommunications and missed tasks. Recruitment is typically informal, lacking a verification process, which raises safety concerns.

C. Proposed System

The proposed platform addresses these issues through:

- Admin Verification: Admins verify profiles to ensure trust and safety.
- Assistance Categories: Services are organized into categories like telephone support, meal preparation, and home assistance.
- Incentive System: Volunteers earn credits for tasks, which can be redeemed for digital certificates.
- Feedback Loop: A built-in rating system allows for service quality improvement.

III. SYSTEM DESIGN AND REQUIREMENTS

A. Feasibility Study

The platform is technically feasible using a Python-based backend (Flask) and a MySQL database. It is economically viable as it utilizes open-source technologies, keeping development and maintenance costs minimal.

B. System Requirements

The hardware requirements include an Intel Core i5 processor with 8 GB of DRAM. Software requirements involve Python 3.7.4, Flask 1.1.1, and Wampserver for local server hosting.

C. System Architecture

The architecture facilitates a workflow where recipients post requests, and verified volunteers can browse and accept them. Admins oversee the entire process, including user verification and task management.

IV. IMPLEMENTATION AND TESTING

A. Module Descriptions

The system is divided into several modules: Admin Module for managing user verification; Volunteer Module for task management; Recipient Module for posting requests; and a Notification Module to keep users informed.

B. System Testing

Comprehensive testing was conducted, including unit, integration, functional, and performance testing. The platform confirmed an average response time under 2 seconds for most tasks.

V. RESULT AND DISCUSSION

The Volunteer Assistance Platform successfully met its goals, with over 90% of tasks completed on time. High user engagement was recorded, with 75% of recipients expressing satisfaction. The credit-based system effectively motivated volunteers for long-term engagement.

CONCLUSION AND FUTURE ENHANCEMENT

The platform provides a structured and secure way to connect volunteers with those in need. Future enhancements will include a mobile application and a real-time chat system.

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