Universiti Teknologi MARA

GiftlyGet: A Mobile Application For Environmental Sustainability Through Gifting and Receiving Reusable Items

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ABSTRACT

The fast advancement of mobile technology has changed the way human interact, access to resources, and eases our daily life actvities. This project "GiftlyGet A Mobile Application for Environmental Sustainability through Gifting and Receiving Reusable Items" focuses on developing an item gifting and receiving platform, which indirectly can support government's efforts to reduce waste production and simultaneously promote sustainability by enabling individuals to give away and receive reusable items at no cost. The research was first carried out to identify key user requirements essential for enabling a convenient and accessible item donation experience. The platform leverages mobile technology to develop an accessible platform, connecting donors and the potential item recipients nearby, fostering a resource sharing among community. Core features of the application include user registration, item showcasing, geolocation for proximity-based matching within Machang community, and in-app communication tools such as messaging, voice, and video calls. These functionalities ensure the application is effective, trusted, and easy to be used. To assess the application's effectiveness, user testing was conducted to evaluate its usability, user satisfaction, and ability to streamline the donation process. Android Studio and Firebase are the core software tools used in the development of the mobile application. The platform also incorporates a robust database to store user profiles, item listings, and transaction details, ensuring seamless operations. With a well-defined project's requirements, the project adopts SDLC's Waterfall Methodology in developing an item gifting platform. Usability Testing and functional testing are carried out to collect users' feedback and improvise the system for better usability and reliability. Usability testing results indicated high user satisfaction, with a mean score of 4.7 for ease of uploading items, 4.5 for location auto-detection, and 4.8 for the video call verification feature. System Usability Scale (SUS) results indicated that most testers were willing to use the application frequently and 90% agreed it was easy to use. Additionally, 70% believed most people could learn to use the app quickly, and 80% felt confident using it. These results validate the app's usability and its effectiveness in solving the identified problems. In summary, by preventing usable items from ending up in landfills and encouraging sustainable resource-sharing practices, GiftlyGet significantly contributes to environmental prevention aligning with SDGs and promoting a culture of reuse among community.

ACKNOWLEDGEMENT

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CHAPTER 1

INTRODUCTION

The growing concern over sustainability and waste reduction has urged the innovative solutions in promoting responsible consumption. Hence, one such effort involves the creation of a geolocation-based mobile application that is able to facilitate the donation and receiving of reusable items, acting as a bridge between donors and recipients of reusable items. This study was initiated with the aim of addressing several challenges that arise from traditional donation methods. This chapter lays the foundation by outlining the study's background, a discussion of specific problems addressed, the formulation of research questions, followed by the research objectives, and an exploration research's scope and significance.

1.1 Background

The 2030 Agenda for Sustainable Development, aimed at ending poverty and addressing deprivations as outlined in the Sustainable Development Goals (SDGs), has been proactively adopted by each United Member States in 2015. Malaysia is no exception in embracing the 2030 Agenda for Sustainable Development, demonstrating its commitment in implementing the SDGs and addressing inequalities, and promoting environmental sustainability locally (United Nations, n.d.). An alarming growing production of consumer goods and their disposal in the future has emphasized the necessity in adopting sustainable practices in waste management. Moreover, living in today's highly consumerist society, most of the consumer goods are composed of plastic materials contributing to the fact that plastics are now the world's third-largest production material, second only to concrete and steel (Watts, 2019 as cited in Maitlo, Ali, Unar, Ahmad, Bhutto,