App to Support Blind People Riding Public Transport Outline

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I. Introduction
Background information on the issue of accessibility in public transportation tries to answer why we should care for blind people to be able to use public transportation independently, various ways in history to help blind people to ride public transportation, and the objectives of the literature review.

II. Overview of the needs of blind people using public transport
Discuss challenges faced by blind people in using public transport, looking for essential factors that could block users from accessing public transport and existing solutions to help guide blind people using public transport.

III. Literature review on existing mobile applications for blind people in public transport and discuss what new approaches could be applied.
Using comparative analysis on existing mobile applications. Based on the analysis that extracts what essential factors could help blind people, discuss what new technologies can be used to improve accessibility for blind people and what risks could be taken.

IV. Evaluation and recommendations
Discuss the future of the app to help blind people and make recommendations to developers.

V. Research method
Discuss If making a new app, design a way to collect user feedback to verify these new ideas.

VI. Conclusion
Summary and Implications for future research.

Overview

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Public transportation is vital for the independence of blind people as it enables them to engage in social activities and enhance their daily lives (Flores & Manduchi, 2018). It is also a fundamental human right to provide equal public transport accessibility (Flynn et al., 2018). In recent years, mobile applications (apps) have been developed to support blind people in using public transport.

This literature review focuses on using apps to support blind people using public transport. It aims to identify the barriers that blind people face and the essential factors to provide them with a smooth public transport experience. The review also compares the existing apps designed for blind people and analyzes their strengths and limitations. The goal is to highlight key features and design considerations for future app development to help blind people become more independent.

The first section provides an overview of the needs of blind people when using public transport. It discusses the difficulties they face, such as identifying the correct stop or bus number and the technologies developed to overcome these barriers. This section highlights the potential of mobile applications as the most promising solution for supporting blind people in using public transport.

The second section introduces recently popular mobile applications designed to support blind people in riding buses and subways. A comparative analysis is carried out to identify the strengths and limitations of these apps from different angles, such as cost, convenience, friendliness, and accuracy. The analysis reveals that many of the existing apps have significant usability issues and do not fully address the needs of blind people.

The third section summarizes the essential components/functionalities necessary to support blind people in using public transport. This section discusses the use of GPS, IoT with Bluetooth Low Energy (BLE), or Radio-frequency identification to provide real-time information about the bus and to help the user determine whether the bus is appropriate. Additionally, it discusses the potential of Artificial Intelligence (AI) and its ethical implications. The section also highlights the need to design apps that are user-friendly and accessible.

The fourth section discusses the gap between current solutions and ideal software and the potential study direction to improve blind people's accessibility to public transportation. The section provides recommendations for app developers to improve accessibility for blind people, such as incorporating speech recognition technology and exploring multimodal feedback systems.

The fifth section discusses the research methods that could be used to verify new ideas if developing a new app to support blind people. It highlights the importance of incorporating the feedback of blind people into the design process.

This literature review summarizes what should be considered and implemented to help blind people riding public transport and the new technologies that could be applied to reduce the gap between existing solutions and ideals. It emphasizes the importance of designing apps that are user-friendly and accessible and that take into account the feedback of blind people. The study also identifies the potential of AI and the need to address ethical considerations in developing apps for blind people.

Reference

Flores, G.H. and Manduchi, R., 2018. A public transit assistant for blind bus passengers. *IEEE Pervasive Computing*, *17*(1), pp.49-59

Flynn, C., Komissar, J., Panneton, J. and Paul, A., 2018. Improving accessibility of public transport information for the blind. *Preuzeto sa: https://web. wpi. edu/Pubs/E-project/Available/E-project-043018-182339/unrestricted/Improving_Accessibility_of_Public_Transport_Information_for_the_Blind. pdf [Pristupljeno: veljača 2021.]*.