Research Exhibition in Mathematics and Computer Sciences (REMACS 6.0)/
ISBN: 978-629-97440-5-4

CHILD-CYBERCARE MOBILE APPLICATION FOR SECURED BROWSING

Nurfarah Hani Che Ismail, Ros Syamsul Hamid and Hafizah Hajimia
College of Computing, Informatics and Mathematics,
Universiti Teknologi MARA, Perlis Branch
farahhani218@gmail.com, rossyamsul@uitm.edu.my and hafizah.hajimia@uitm.edu.my

ABSTRACT- Mobile phone use has skyrocketed worldwide over the past decade. Due to parental disconnection, youth internet addiction is rising. Internet addiction is more likely in children who feel unsupervised, have their privacy violated, or have poor parent-child relationships, according to research. Parental supervision, involvement, and meaningful connections reduce these risks and protect children from excessive internet use. To protect young children, especially those under 10, this project will create a mobile app. Parents can track their children's online activity, detect unwanted Keywords in Google searches, and receive pop-up alerts. The app's search history lets parents address concerns. SQLite manages keyword lists and search history efficiently. Usability testing and user feedback showed app effectiveness. Participating in their children's online activities teaches responsible digital behavior and creates a safe and supportive online environment.

Keywords: Unwanted Keywords detection, Parent, Child, Google Search, SQLite Database.

1. INTRODUCTION

Mobile phones enable instantaneous communication and online activities. Smartphones are introduced to children early, raising concerns about addiction and unhealthy use. Essential mobile apps are available in app stores. Children can learn on the Internet, but unsupervised use is dangerous. Age-appropriate, engaging content is needed for kids to enjoy the internet. Smartphone and internet dangers are underestimated by parents. Children need safe browsing to avoid viewing harmful content. This project will create a secure browsing mobile app for parents to monitor and detect unwanted Keywords in their children's online activity. Parents can look for inappropriate Keywords in their kids' search history.

2. METHODOLOGY

This project uses the seven-phase waterfall SDLC model. Planning used journal articles and Google Scholar. ACM Digital Library, ScienceDirect, and IEEE Xplore collected and analyzed project requirements. Canva, Lucidchart, and Diagram.net visualized system architecture, database design, and user interface layout during the design phase. The Android Studio emulator tested functionality, Apptim tested network performance, and Google Form tested usability and user acceptance. Java and Android Studio were used for development. The documentation phase recorded the project's results, while the maintenance phase used Android Studio to fix bugs.

3. RESULTS AND DISCUSSION

During the application development, functional testing yielded exceptional results, with a 100% success rate. Usability testing with 15 parent respondents resulted in an average satisfaction rating of 4.1 out of 5. User Acceptance Testing (UAT) with five experts provided an average rating of 3.6 out of 5 for design and user interface. Network performance testing demonstrated low average download and upload sizes of 0.19 MB and 0.01 MB, respectively. Figure 1 below indicates the comprehensive testing conducted during the development process.

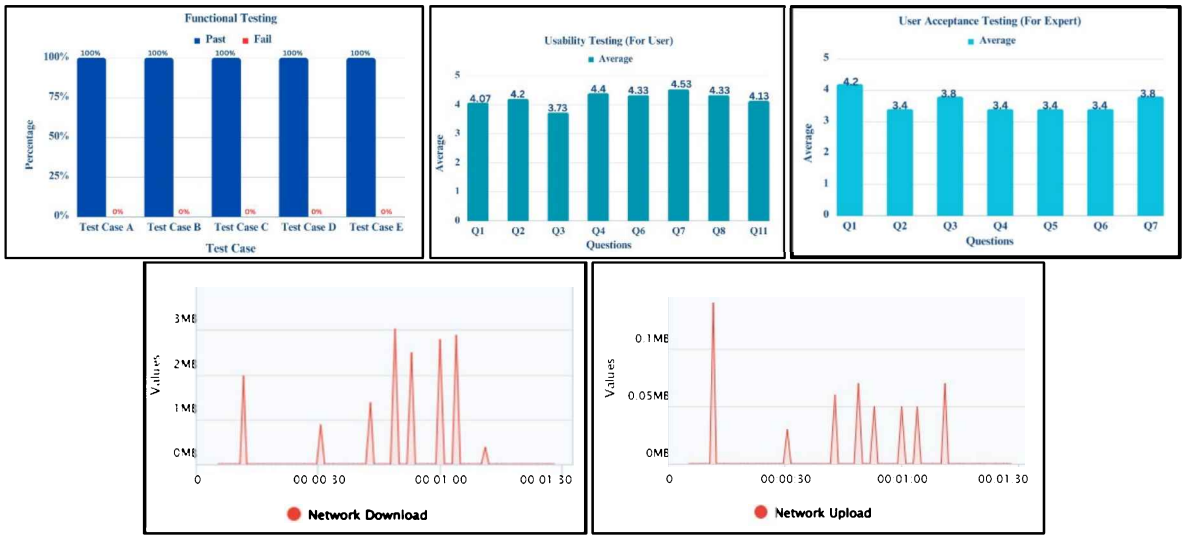

Figure 1 Functional, Usability, User Acceptance, Network Performance Testing

4. NOVELTY OF RESEARCH / PRODUCT

This project's novelty lies in focusing on the online safety of children under 10 years old, a group often neglected by existing parental control apps. The Child-CyberCare app offers unique features like keyword detection during Google searches within the app, promoting parental supervision. It empowers parents to be actively involved in their children's digital lives, fostering responsible online behavior. By addressing specific needs, it fills a gap in existing solutions for their safety and well-being.

5. CONCLUSION

The Child-CyberCare app ensures online safety for young children by enabling parental monitoring and keyword detection on Google Search. It underwent comprehensive testing and had a user-friendly interface. The app fills a crucial gap in parental control solutions for younger children, contributing to a safer digital environment. Future work may involve enhancing functionality and collaborating with educational institutions for responsible digital behavior.

REFERENCES

Awaluddin SMB, Ying Ying C, Yoep N, Paiwai F, Lodz NA, Muhammad EN, Mahmud NA, Ibrahim Wong N, Mohamad Nor NS, Nik Abd Rashid NR. The Association of Internet Addiction and Perceived Parental Protective Factors Among Malaysian Adolescents. Asia Pac J Public Health. 2019 Nov;31(8_suppl):57S-64S. https://doi.org/10.1177/1010539519872642

D. Patel, V. Khan, R. K. Shukla and M. Kherajani, "A Customized Children Friendly and Secure Search Engine," 2nd International Conference on Data, Engineering and Applications (IDEA), Bhopal, India, 2020, pp. 1-5, https://doi.org/10.1109/idea49133.2020.9170716

Zhen, R., Liu, R. de, Hong, W., & Zhou, X. (2019). How do interpersonal relationships relieve adolescents' problematic mobile phone use? The roles of loneliness and motivation to use mobile phones. International Journal of Environmental Research and Public Health, 16(13). https://doi.org/10.3390/ijerph16132286