

FACULTY OF ENGINEERING
DEPARTMENT OF COMPUTER ENGINEERING

NEWSPAPER HEADLINE DETAILING APPLICATION BASED ON ANDROID

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A PROJECT REPORT SUBMITTED IN THE PARTIAL FULFILLMENT OF THE
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I **MUWANGUZI PAUL N** declare to the best of my knowledge that the contents of this project proposal was done by only me save for a few references indicted therein, and it has not been presented or duplicated or with any of its contents at any institute of higher learning for an academic reward.

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Approval

This is to approve that this project report has been fully and consistently worked on and submitted to the department of computer engineering under the supervision of the undersigned supervisor;

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List of figures

Figure 1: Graph showing percentage of newspaper usage daily by age 2

ABSTRACT

The inspiration for this particular system was from the fact that even I personally love to know about current affairs, yet I don't often buy newspapers. This application is meant to help the user find a quick way of finding stories online that are related to the headline.

All the user has to do is while at the newspaper stalls for example, they can simply take a picture of the desired headline and submit a query which my system crawls for on the web and returns a list of links from the user can read related stories in line with the subject matter. This at least gives the user a peak into what the news is all about for the particular day.

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LIST OF ACRONYMS

ADT	Android Development Tool
API	Application Programming Interface
App	Application
.apk	Android Package
OCR	Optical Character Recognition

CHAPTER ONE: INTRODUCTION

1.1 Background

Over the years, newspaper usage has dropped especially among the youth and middle aged [1]. The news plays an important role in our day to day life as it is vital that we stay up to speed with current affairs, especially concerning our nation [2]. The habit of reading newspapers has stayed mostly among the adults.

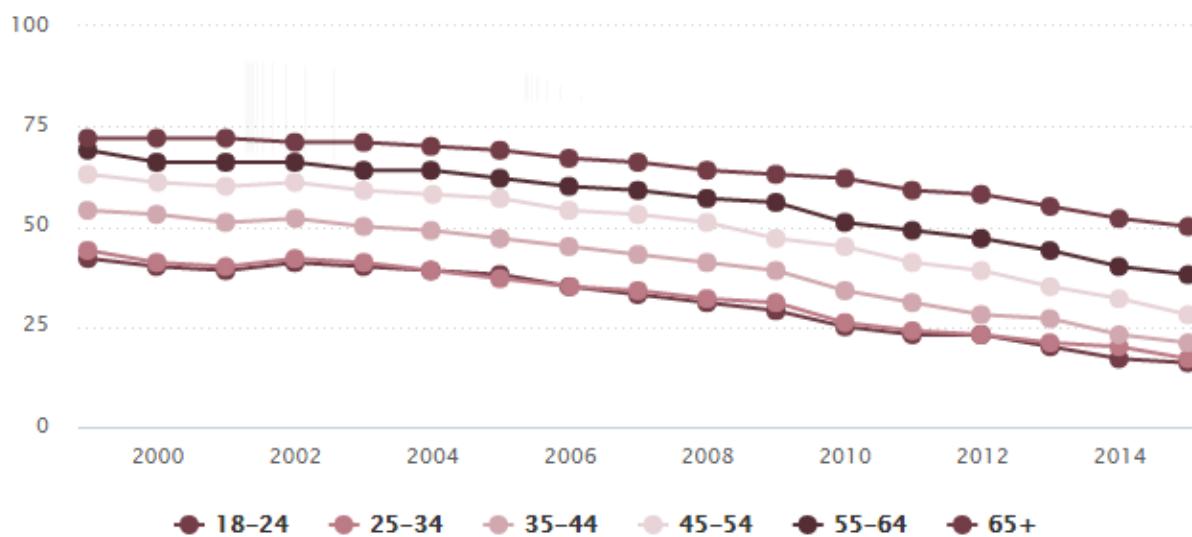


Figure 1: Graph showing percentage of newspaper usage daily by age [3]

This is mostly credited to the emergence of an information age, where the sources of information are so numerous, and there are all kinds of technologies to support the access to this information.

Smartphones have become some of the most popular devices worldwide that people utilize to access information especially over the internet [4]. With millions of apps out there, people can access all kinds of information from the palm of their hands, as purchase of desktop computer and laptops remains a challenge for many. Smartphones are so popular because of their size, connectivity, speed and the fact that they are relatively cheap compared to purchasing a desktop computer or laptop. According to The Economist [5], an average American can spend at least two hours buried one. Furthermore, smartphones are very portable and are carried around almost everywhere, making them quite addictive and a vital part of the owner's everyday life.

References

- [1] M. BARTHEL, "Newspapers: Fact Sheet | Pew Research Center - Journalism.org," 15 June 2015. [Online]. Available: <http://www.journalism.org/2016/06/15/newspapers-fact-sheet/>. [Accessed 24 January 2017].
- [2] Mitchellsny, "Why it is Important to Read the Newspaper - Mitchell's NY Blog," 30 March 2016. [Online]. Available: <https://www.mitchellsny.com/blog/why-it-is-important-to-read-the-newspaper/>. [Accessed 24 January 2017].
- [3] N. Scarborough, "Newspapers: Daily readership by age," [Online]. Available: <http://www.journalism.org/media-indicators/newspapers-daily-readership-by-age/>. [Accessed 24 January 2017].
- [4] M. McDonough, "Mobile Usage Statistics: Key Facts and Findings for Publishers," 18 March 2016. [Online]. Available: <https://blog.ezoic.com/mobile-usage-statistics-key-facts-and-findings-for-publishers/>. [Accessed 24 January 2017].
- [5] T. Economist, "Why smartphones are the best-selling gadgets in history," 28 February 2015. [Online]. Available: <http://www.businessinsider.com/why-smartphones-are-the-best-selling-gadgets-in-history-2015-2>. [Accessed 24 January 2017].
- [6] D. A. A. K. P. N. VENKATA RAO, "OPTICAL CHARACTER RECOGNITION TECHNIQUE," *Journal of Theoretical and Applied Information Technology*, vol. 83, no. 2, pp. 275, 277, 2016.
- [7] L. Eikvil, "OCR Optical Character Recognition," Norsk Regnesentral, 1993.
- [8] J. Fürnkranz, "Machine Learning and Data Mining," in *Foundations of Rule Learning, Cognitive Technologies*, Springer, 2012.
- [9] J. L. a. I. H. W. Sally Jo Cunningham, "APPLICATIONS OF MACHINE LEARNING IN INFORMATION RETREIVAL," Hamilton, New Zealand.
- [10] P. Robbins and M. Aydede, *The Cambridge handbook of situated cognition*. Cambridge University Press Cambridge, 2009.
- [11] WebHarvy, "What Is Web Scraping," [Online]. Available: <https://www.webharvy.com/articles/what-is-web-scraping.html>. [Accessed 28 Jan 2017].