

**JOMO KENYATTA UNIVERSITY OF AGRICULTURE**

**AND TECHNOLOGY**

**DEPARTMENT OF ELECTRICAL AND ELECTRONIC ENGINEERING**

**BSc Electronic and Computer Engineering**

**PROJECT PROPOSAL ABSTRACT**

**PROJECT TITLE:**

**VOICE CONTROLLED ASSISTANT.**

**Submitted by:**

**MARK ODHIAMBO- ENE212-0154/2017**

**PROJECT SUPERVISOR**

**MR. ALOO**

*A Final Year Project Proposal submitted to the Department of Electrical and*

*Electronic Engineering in partial fulfillment of the requirements for the Award of a*

*Bachelor of Science Degree in Electronic Engineering.*

**JULY 2022**

**DECLARATION**

This project proposal is my original work, except where due acknowledgement is made in the text, and to the best of my knowledge has not been previously submitted to Jomo Kenyatta University of Agriculture and Technology or any other institution for the award of a degree or diploma.

**TITLE OF PROJECT:**

**VOICE CONTROLLED ASSISTANT**

**SUPERVISOR CONFIRMATION:**

This project proposal has been submitted to the Department of Electrical and Electronic Engineering, Jomo Kenyatta University of Agriculture and Technology, with my approval as the University supervisor:

**NAME OF SUPERVISOR………**MR. ALOO**………………**

**SIGNATURE: ……………………………… DATE: ……………………………………….**

**ABSTRACT**

Everyone who works has several tasks to do and sometimes can be overwhelming leading to burn out, stress and incomplete work. It is tedious to schedule, remember and manage a schedule especially when multiple tasks are involved it creates a tangled mess which can be frustrating. The aim of this project is to help solve this through a voice controlled assistant.

The voice controlled assistant is going to be used in scheduling, managing and setting reminders through voice commands. This will make work easier and ease the workload of an individual, through proper planning and management it aims to make people more productive and reduce stress.

This project will be implemented through the use of python programming for voice recognition and detection, and use of raspberry pi as the hardware for the project.

**TABLE OF CONTENTS**

[ABSTRACT ii](#_1fob9te)

[1.](#_3znysh7) INTRODUCTION. 1

[1.2](#_2et92p0) Problem statement 3

[1.3](#_tyjcwt) Project justification. 3

[1.4](#_3dy6vkm) Objectives 4

[2.](#_4d34og8) LITERATURE REVIEW 6

[3.](#_23ckvvd) METHODOLOGY 17

[4. EXPECTED RESULTS 28](#_46r0co2)

**LIST OF FIGURES**

**LIST OF TABLES**

**CHAPTER ONE**

1. **INTRODUCTION.**
   1. **Background Information**

Task and schedule management has been a concern in numerous industries for years, including finance, health care, administration, and retail. In the current technological age, it is not only necessary to manage the existing tasks, but it is also important to boost productivity. This problem is faced with many people. Therefore, this project suggests that using a Voice controlled assistant can boost productivity in the workforce.

Scheduling tasks is one of the most important activities in today's fast based work environment. Productivity can be boosted with a well designed voice controlled assistant. The implementation of a voice controlled assistant will help a person to plan, schedule and manage tasks.

* 1. **Problem statement**

## People who work will always schedule, manage and plan their tasks. At some point, everyone will need to boot their productivity. A properly made schedule is critical and a poorly made one will end up causing harm, confusion and stress. The majority of either follow a timetable which is static and not ideal for a flexible work schedule. People require a platform that will enable them to be able to be more dynamic and allow them to be flexible in their planning. The voice controlled assistant aims to achieve this.

In reality, most people rarely understand the benefits of time management and proper planning and scheduling. We rely on a time table and setting appointments which can lead to conflict of different tasks at the same time and leading to misunderstandings , which is a sort of inconvenience. As a result, a lot of time is wasted that could be spent on more important activities. Implementing a voice controlled assistant would aid in this.

The proposed voice controlled assistant aims to improve creativity and help with time management. They won't have to spend as much time on setting appointments through different software or worse an analogue system of writing things down which can be misplaced or lost, when they could be doing something more productive.

* 1. **~~Project~~ justification.**

The project is significant because it will assist to schedule and set tasks through this will increase productivity with the use of a voice controlled assistant. Productivity is important because it will help one accomplish more tasks in less time and more efficiently. This will also help in reducing stress and making one more organized.

* 1. **Objectives**

~~The objectives of this project are to use the voice controlled assistant to boost productivity.~~

* + 1. **Main objectives**

To design, implement and test a voice controlled assistant, with a real-time update of setting tasks and reminders to boost creativity..

* + 1. **Specific objectives**

1. To design and implement an application.
2. To design and implement an electronic system for voice detection, synthesize and processing so as to be able to query tasks.
3. To design and implement an electronic system for voice output.

**CHAPTER TWO**

**LITERATURE REVIEW**

**CHAPTER THREE**

**METHODOLOGY**

**CHAPTER FOUR**

**EXPECTED RESULTS**

**TIME-PLAN**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **ACTIVITIES** | **MAY** | **JUNE** | **JULY** | **AUG** | **SEP** | **OCT** | **NOV** | **DEC** |
| **Documentation** |  |  |  |  |  |  |  |  |
| **Proposal Writing** |  |  |  |  |  |  |  |  |
| **Literature Review** |  |  |  |  |  |  |  |  |
| **Proposal Presentation** |  |  |  |  |  |  |  |  |
| **Design and coding** |  |  |  |  |  |  |  |  |
| **Hardware** configuration**, testing and adjustment** |  |  |  |  |  |  |  |  |
| **Final Report writing** |  |  |  |  |  |  |  |  |
| **Final Presentation** |  |  |  |  |  |  |  |  |

**REFERENCES**

[1] Duff, W.S., Hodgson, D., 2002. A simple high efficiency solar water purification system. In: Proceedings of the 2002 Annual Conference of the American Solar Energy Society, 15–20, Reno, Nevada, American Solar Energy Society, Boulder, Colorado.

[2] W. S. Duff and D. Hodgson, “Solar Water Purification by Pasteurization,” *Solar Energy*, 2006.

[3] K. Song, M. Mohsen, and F. Taghipour, “Application of ultraviolet light-emitting diodes (UV-LEDs) for water disinfection: A review,” *Water Research*, vol. 94, pp. 341–349, 2016.

[4] Jarvis, Autin, Goslan, and Hassard, “Application of Ultraviolet Light-Emitting Diodes (UV-LED) to Full-Scale Drinking-Water Disinfection,” *Water*, vol. 11, no. 9, p. 1894, 2019.

[5] K. Song, F. Taghipour, and M. Mohseni, “Microorganisms inactivation by continuous and pulsed irradiation of ultraviolet light-emitting diodes (UV-LEDs),” *Chemical Engineering Journal*, vol. 343, pp. 362–370, 2018.

[6] Y. A. Pachepsky and D. R. Shelton, “Escherichia Coliand Fecal Coliforms in Freshwater and Estuarine Sediments,” *Critical Reviews in Environmental Science and Technology*, vol. 41, no. 12, pp. 1067–1110, 2011.

[7] W. A. M. Hijnen, E. F. Beerendonk, and G. J. Medema, “Inactivation credit of UV radiation for viruses, bacteria and protozoan (oo)cysts in water: A review,” *Water Research*, vol. 40, no. 1, pp. 3–22, 2006.

[8] A.-C. Chevremont, J.-L. Boudenne, B. Coulomb, and A.-M. Farnet, “Fate of carbamazepine and anthracene in soils watered with UV-LED treated wastewaters,” *Water Research*, vol. 47, no. 17, pp. 6574–6584, 2013.

[9] Autin, O., Romelot, C., Rust, L., Hart, J., Jarvis, P., MacAdam, J., Parsons, S.A. and Jefferson, B., 2013. Evaluation of a UV-light emitting diodes unit for the removal of micropollutants in water for low energy advanced oxidation processes. Chemosphere.

[10] O. Autin, C. Romelot, L. Rust, J. Hart, P. Jarvis, J. MacAdam, S. A. Parsons, and B. Jefferson, “Evaluation of a UV-light emitting diodes unit for the removal of micropollutants in water for low energy advanced oxidation processes,” *Chemosphere*, vol. 92, no. 6, pp. 745–751, 2013.

[11] M. Asif Khan, M. Shatalov, H. P. Maruska, H. M. Wang, and E. Kuokstis, “III–Nitride UV Devices,” *Japanese Journal of Applied Physics*, vol. 44, no. 10, pp. 7191–7206, 2005.

[12] Y. Taniyasu, M. Kasu, and T. Makimoto, “An aluminium nitride light-emitting diode with a wavelength of 210 nanometres,” *Nature*, vol. 441, no. 7091, pp. 325–328, 2006.

[13] M. A. Würtele, T. Kolbe, M. Lipsz, A. Külberg, M. Weyers, M. Kneissl, and M. Jekel, “Application of GaN-based ultraviolet-C light emitting diodes – UV LEDs – for water disinfection,” *Water Research*, vol. 45, no. 3, pp. 1481–1489, 2011.

[14] S. Wengraitis, P. McCubbin, M. M. Wade, T. D. Biggs, S. Hall, L. I. Williams, and A. W. Zulich, “Pulsed UV-C Disinfection of Escherichia coli With Light-Emitting Diodes, Emitted at Various Repetition Rates and Duty Cycles,” *Photochemistry and Photobiology*, vol. 89, no. 1, pp. 127–131, 2012.

[15] N. Hancock, “Ultrafiltration, Nanofiltration and Reverse Osmosis,” *Safe Drinking Water Foundation*, 15-Aug-2018. [Online]. Available: https://www.safewater.org/fact-sheets-1/2017/1/23/ultrafiltrationnanoandro. [Accessed: 13-Jul-2021].

[16] “Advantages and Disadvantages of Ultrafiltration,” *BIOTECH*, 30-Oct-2016. [Online]. Available: https://biotechwater.com/advantages-disadvantages-ultrafiltration/. [Accessed: 13-Jul-2021].

[17] L. Baker, Y. Choi, and C. Martin, “Nanopore Membranes for Biomaterials Synthesis, Biosensing and Bioseparations,” *Current Nanoscience*, vol. 2, no. 3, pp. 243–255, 2006.

[18] A. W. Mohammad, N. Hilal, H. Al-Zoubib, N. A. Darwish, and N. Ali, “Modelling the effects of nanofiltration membrane properties on system cost assessment for desalination applications,” *Desalination*, vol. 206, no. 1-3, pp. 215–225, 2007.

[19] “Microfiltration,” *Membrane Technology and Applications*, pp. 303–324, 2012.

[20] M. C. Tombs, “John C. Crittenden, R. Rhodes Trussell, David W. Hand, Kerry J. Howe, George Tchobanoglous: MWH Water Treatment Principles and Design. Third Edition,” *Chromatographia*, vol. 77, no. 5-6, pp. 527–528, 2013.

[21] “Advantages and Disadvantages of Reverse Osmosis,” *BIOTECH*, 30-Oct-2016. [Online]. Available: https://biotechwater.com/advantages-disadvantages-reverse-osmosis/. [Accessed: 13-Jul-2021].

[27] “Solar Drinking Water Disinfection (SODIS) to Reduce Childhood Diarrhea,” *Recent Advances and Issues in Environmental Science*, pp. 205–225, 2011.

[28] V. Meera and M. M. Ahammed, “Solar disinfection for household treatment of roof-harvested rainwater,” *Water Supply*, vol. 8, no. 2, pp. 153–160, 2008.

[29] “Water, sanitation and hygiene,” *UNICEF Kenya*. [Online]. Available: https://www.unicef.org/kenya/water-sanitation-and-hygiene. [Accessed: 02-Aug-2021].