RUAHA CATHOLIC UNIVERSITY (RUCU)

FACULTY OF INFORMATION COMMUNICATION AND TECHNOLOGY

DEPARTMENT OF COMPUTER SCIENCE AND SOFTWARE ENGINEERING

COURSE NAME : RESEARCH METHODS

COURSE CODE : RMS 311

INSTRUCTOR NAME : MS. TUMAINI EDGAR

NATURE OF WORK : INDIVIDUAL ASSIGNMENT

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QUESTION:

From the previous session, take any paper from Google Scholar of your choice and answer the following question

1. Summarize the Introduction

2. The name of the paper with the author's name

3. Summarize the problem statement

4 Provide the objectives

5. Provide the gap of the paper.

1. Name of the Paper with Authors

Title: The Design of an Electronic Voting System

Authors: G.O. Ofori-Dwumfuo & E. Paatey

Journal: Research Journal of Information Technology, 3(2), pp. 91–98, 2011.

2. Summary of the Introduction

The introduction explains that voting is a core democratic process, traditionally conducted using manual paper-based systems. Manual voting has several limitations: it is costly, time-consuming, error-prone, and difficult to manage for large electorates. Technological advances have made electronic voting (e-voting) feasible, offering the potential to simplify elections, reduce costs, and improve efficiency. However, e-voting systems must also address voter privacy, usability, accessibility, and integration with existing electoral procedures, particularly in Ghana. This paper aims to design an Online Voting System (OVIS) tailored to Ghana's election processes to solve these challenges.

3. Summary of the Problem Statement

Manual voting systems in Ghana (and similar contexts) are inefficient, costly, slow, and prone to errors. With increasing electorate sizes, these systems struggle to deliver timely and accurate results. There is therefore a need for an electronic voting system that:

- Reduces costs and administrative burdens
- Ensures efficiency and faster result compilation
- Protects voter privacy
- Is user-friendly and accessible to all voters

4. Objectives of the Paper

The main objectives of the study are:

i. To design an electronic voting system (OVIS) suitable for Ghana's electoral process.
ii. To reduce the cost and complexity associated with traditional manual voting.
iii. To ensure voter privacy and authentication so that each voter votes only once.
iv. To develop a user-friendly system that is accessible to the general populace.
v. To implement security features like access control and authentication within the system.

5. Gap of the Paper (the paper's own limitations)

Even though the paper proposes a working electronic voting system (OVIS), it still has several limitations:

i. No real-world deployment/testing: The system was designed but never tested in an actual election.
ii. Limited security evaluation: No analysis of resistance to hacking, insider threats, or tampering.
iii. Incomplete privacy mechanisms: Voter anonymity and confidentiality are not fully implemented or verified.
iv. No verifiability or auditability: Voters cannot verify their votes, and independent audits are not provided.
v. Limited comparison with other e-voting systems: The paper does not compare OVIS to existing systems globally.
vi. Technological limitations: Relies on older 2011 technologies, lacking modern security protocols, mobile integration, or multi-factor authentication.

REFERENCES

Ofori-Dwumfuo, G. O., & Paatey, E. (2011, September 30). The design of an electronic voting system. *Research Journal of Information Technology,*, 91-98. Retrieved December 11, 2025, from https://maxwellsci.com/print/rjit/v3-91-98.pdf