**CHAPTER ONE**

**INTRODUCTION**

**1.1 Background of the Study**

Voting is the process that allows the general public or the people to choose their leaders and articulate views on how they will be governed.

Real-time refers to a system in which input data is processed within milliseconds so that it is available virtually immediately as feedback to the process from which it is coming.

E-voting refers to the application of electronic technology to cast and count votes in an election. One of the fundamental mechanisms for democracy is election. It is the way to collect the public opinions to form a democratic government. The traditional process of election is quite tedious, time-consuming and has a cumbersome procedure in the preparation and collation phases. To overcome these difficulties Real-time Electronic voting system (REVS) is introduced. REVS continues to grow as long as the world becomes more dependable on the new technologies. REVS provides a lot of benefits than traditional voting systems. It tries to enable efficient and secure elections, inexpensive because its resources are reusable and does not require any geographical proximity of voters, and it provides better scalability for large elections. Visalakshi et al (2020).

In various Nigerian tertiary institutions, student elections are carried out every session. There are basically three arms of government in which student representatives or executives are usually elected; the Students Union Government (SUG), Departmental and Hostel levels. They are elected by students only. In other words, for any students-election, students of any giventertiary institution vote their fellow students who have shown interest in the above-listed posts. Elections have been in use to resolve various questions in the past 2000 years. Through the participation of a population, election allows public decisions to be made. Okpara R. et al (2018)

Election first started from the oral voting system to raising of hands, to the Kudavolai system (formerly utilized in the ancient India). In the ancient Greece, people would put either a white or a black ball/stone in a bucket. Oral voting was then substituted by the paper ballot first in Rome (139 BC) according to Douglas Jones.

And Nigeria still makes use of this paper-based voting system. The voting systems had experienced continuous innovation which started as early as 1892 with the introduction of voting technology like the lever arch machine, the Optical-scan machine, and the punch card systems. Recent innovations saw evolutionary technology like Direct Recording Electronics (DREs), kiosks, Telephones, internet voting systems, and most recently is mobile phone voting systems. Okpara R. et al (2018).

Most student electoral bodies since inception, still make use of obsolete paper-based voting systems characterized by filling manual forms.

**1.2 Statement of the Problem**

The voting/polling process by students of a computer science Kaduna Polytechnic seems to be cumbersome since there are thousands of students. So many cases of authentic students not participating in the voting process due to unfavorable voting time, conditions, environment, unbearable queues, or the mammoth crowd at the voting place which is not accommodated in the period scheduled for voting. There are also scenarios where non-academic students flock to the polling centres to participate in the voting process adding to the unbearable queue. Before anyone can vote, he must be accredited. Such a scenario could be totally avoided if students (voters) vote online using a real-time e-voting application. This, allows the voters to vote from anywhere in the globe and see the result almost immediately after the votes are casted, saving time and avoiding the cost of moving to the polling area.

**1.3 Aim and Objectives of the Study**

**The aim of this project is to build a** mobile-based real-time e-voting application

**Objectives**

The objectives of this research work are as follows:

1. The student data set will be extracted from the department based on criteria involving payment of school fees, as registration is not performed on the site since the registration is automated.
2. Modern technology like Flutter will be employed in creating interactive user interfaces and experiences.
3. To ensure effectiveness and efficiency several system tests will be carried out.

**1.4 Scope of the Study**

This project pays close attention to the voting system in the Nigeria Tertiary Institutions already in existence, to ensure the students’ votes count, for transparency and fairness in the elective positions. Due to a large number of institutions, we will be limiting the scope of this work to the computer science department, at Kaduna Polytechnic. A brief description of the institution and its voting methods are given in the preceding subsections.

**1.5 Limitations of the Study**

Core limitations in carrying out the work include those related to logistics. The very major one includes:

1. Financial constraints
2. Time constraints

The materials reviewed as well as the scope of the study were also limitations. Though, the available resources and materials were optimized.

**1.6 Significance of the Study**

**The development of this project is not done for just a test of knowledge, principally, the significance of the work is to terminate the limitation of voting to ballot papers,** vote-riggingduring the election, and overcrowded voting centres**, long after vote counting.** This real-time mobile-based voting app seeks to resolve the above problems **as these have been a serious problem to students and the Electoral Committee.**

**1.7 Project Organization**

The project is divided into three chapters. The outlines are presented below:

**Chapter One: Introduction**

Chapter One introduces this project work, the study's background, the problem statement, the purpose and objectives, the scope of the study, the constraints of the study, the relevance of the study, the project organization, and the definition of terms.

**Chapter Two: Literature review**

This chapter focuses on the literature review, and the contributions of other scholars on the subject matter being discussed.

**Chapter Three: Methodology and Design**

This chapter is concerned with the presentation of the results of system analysis and design. It presents the research methodology used in the development of the system to facilitate an understanding and effective future implementation of the system

**1.8 Definition of Terms**

**E-VOTING:** E-Voting also known as Electronic Voting, it is basically a voting procedure that allows a voter to cast their vote electronically through different machines and devices in an easy and secure manner. E-voting can eliminate fake votes, speed up the electoral process, increase accessibility, and make voting more appropriate for citizens.

**REVS:** REVS stands for Real-time electronic voting system. It refers to a system in which input data is processed within milliseconds so that it is available virtually immediately as feedback to the process from which it is coming.

**SUG: SUG stands for Student Union Government. It is an organization in higher institutions responsible for protecting and defending the rights of students on campus. They organize leisure activities, provide welfare services and represent student’s political interests.**

**DRE: DRE stands for Direct Recording Electronics. This represents a voting technology** that electronically stores votes, and on which voters use interfaces (pushbutton, touchscreen, or dial) to record their votes. The votes are stored in a memory cartridge, diskette, or smart card and added to the votes of all other voters.

**ISEC: ISEC stands for Independent Students Electoral Commission. This body represents a committee of students who coordinate the elections of the student association.**