# CHAPTER ONE

## INTRODUCTION

### BACKGROUND OF STUDY

Students performance in academics is a way of determining the capabilities and disabilities of a student academically. It is also used to ascertain if a student is ready to move to the next phase of education. In order to get the performance of students, various techniques such as quizzes, assignments, tests, examinations and so on are employed. Students with high scores or grades are then awarded while those with below average grades are demerited or reevaluated.

In order to get into the university in a country like Nigeria, aspiring student must have gone through six years of secondary school and written required exams such as WAEC, NECO, and JAMB (Oladokun, Adebanjo, Charles, 2008). The performance in these exams are then used to determine if the student is eligible of admission into the school alongside other factors.

In recent times, Universities are not satisfied with the evaluation and admission process for aspiring students(Oladokun, Adebanjo, Charles, 2008). as they discover that these students don’t perform up to expectation after admission and they lack skills or knowledge these exams should have tested for. This has led to research in predicting student’s performance.

This research seeks to provide a system to predict student’s academic performance using Artificial neural networks (ANN), taking into consideration different factors such as grades in previous exams, family background, schooling background, gender and so on.(Amoo, Alaba & Usman, 2018).

Predicting student’s academic performance would enable universities to know better those who are qualified for admission. It would also help to identify student’s who need special assistance to improve their performance (Sonja, Milija, 2014).

### 1.2 PROBLEM STATEMENT

It has been observed that the rate of university students with low grades keeps increasing which has a ripple effect on the quality of graduating students produced every year. (Amoo, Alaba & Usman, 2018). This can be traced to the inefficient and also corrupt admission system, as students who seemingly meet the requirements for admission end up not performing up to expectations. This has made Universities not comfortable with the current admission system. Therefore, this research aims at solving the problem by making use of ANNs to predict students’ performance before admission.

### AIM AND OBJECTIVES

The aim of this project is to develop a system that predicts students’ academic performance using Artificial Neural Networks. The Objectives are to:

1. Determine how ANNs can be used to predict Students Academic Performance.
2. Determine the factors that affect Students’ academic performance
3. Design a system that increases the efficiency of the current admission system

### METHODOLOGY

1. Factors to be considered while building the system includes data from past exams, data on school background, family background and gender.
2. The multi layered perceptron algorithm and other ANN algorithm would be used to make predictions.
3. The system would be a web application which would be designed with html, css, and other web technologies

### 1.5 SCOPE OF STUDY

This study is focused on developing a system to predict academic performance which is available for deployment in universities and other educational institutions.

### 1.6 SIGNIFICANCE OF STUDY

The significance of this study is to improve on the current admission system by predicting grades of aspiring students. This study also improves knowledge on how ANN can make use of considered factors to predict academic performance.

### 1.7 PROJECT FEASIBILITY AND PLAN

#### **1.7.1 Economic Feasibility**

The proposed system will have a hosting cost, but will be free to use by customers. Cost of maintenance will also be included.

It can therefore be concluded that the proposed system is economically feasible

#### **1.7.2 Schedule Feasibility:**

This project would require approximately eleven months to be completed.

1. Chapter one: this deals with the introduction and identification of the aim and objectives of the project. This will take 1 month
2. Chapter two: This chapter reviews related works. This will also take a month
3. Chapter three: This deals with the system analysis and design. Here, requirement analysis is carried out and the design of the system is done. This will take about three months.
4. Chapter four: This involves implementation, testing and review of the developed system. This will take one month to be completed.
5. Chapter five: This deals with summary, discussion of results, conclusion and recommendation and also documentation of future research. This will take up to a month.

Therefore, we can conclude that the schedule of this project is feasible as long as the required resources are available on time.

### 1.8 ORGANIZATION OF SUBSEQUENT CHAPTERS

1. CHAPTER TWO:

This chapter will involve the literature review of works relevant enogh to the topic of this research. It also takes into consideration the historical background of the project, other related works, and description of the technologies to be employed in the system.

1. CHAPTER THREE:

This deals with the analysis and design of the tourist guide app as well as the database making use of different diagrams to describe the various processes

1. CHAPTER FOUR:

This chapter discusses the testing, implementation, and maintenance documentation of the tourist guide app.

1. CHAPTER FIVE:

This chapter discusses the overview of the project as a whole, future recommendations, and also limitations of the system.