



**NAMIBIA UNIVERSITY
OF SCIENCE AND TECHNOLOGY**

**Faculty of Computing and
Informatics**

School of Computing

**Department of Software
Engineering**

13 Jackson Kaujeva Street
Private Bag 13388
Windhoek
NAMIBIA

T: +264 61 207 2052
F: +264 61 207 9052
E: dse@nust.na
W: www.nust.na

DSA Group Project 2, SEMESTER 2, 2024

GROUP ASSIGNMENT PRESENTATION: SCORESHEET AND PROJECT DESCRIPTION

MODE OF STUDY: FULL-TIME

SN	Name	Student Number	Specialisation	Role played in the project	Mark over 100% (for lecturers use only)
1	Hussein Hashili (TL)	223091227	Computer Science	Development of a flowchart	
2	Antonio Antonio	223087084	Computer Science	Creation of a GUI code	
3	Stephen Nangolo	223101605	Computer Science	Creation of a source code and a README documentation	
4	Lasarus Ismael	224057626	Cyber Security	Can up with a Pseudocode	
5	Ester Amunime	221117385	Cyber Security	Wrote and came up with the word documentation	

**Name of Team Leader (TL):
Hussein Hashili**

**TITLE OF PROJECT:
PhonebookApp**

**DATE:
13 Oct. 24**

Project Overview

The primary objective of this project is to develop a Phonebook System that allows users to store, manage, and retrieve contacts efficiently.

The application provides essential functions such as adding, searching, displaying, deleting, updating, sorting, and analyzing search efficiency.

Group Assignment Documentation Introduction

The Phonebook Application is designed to streamline contact management through user-friendly features and efficient algorithms. It is equipped with basic functionalities that allow users to handle contact information effectively, along with search optimization to ensure quick access to stored contacts.

Key Functionalities

- Insert Contact: Adds new contacts to the phonebook.
- Search Contact: Allows for contact retrieval using linear or binary search based on whether the list is sorted.
- Display Contacts: Shows all stored contacts.
- Delete Contact: Removes a contact by name or number.
- Update Contact: Edits existing contact details.
- Sort Contacts: Sorts contacts alphabetically by name.
- Analyze Search Efficiency: Compares the efficiency of linear and binary search algorithms in terms of time complexity.

Development Process

The project was divided into different modules. Each group member contributed to the design, coding, and testing of their assigned modules, ensuring smooth integration of the various functionalities. The development process also involved regular meetings to discuss the progress and any challenges encountered.

Tools and Technologies

- Programming Language: Python
- Development Environment: Visual Studio Code
- Data Structure: Arrays and Lists for managing contacts
- Algorithms: Linear Search, Binary Search, and Sorting

Challenges

The main challenge faced during development was optimizing the search function to handle large datasets efficiently.

This was addressed by implementing sorting algorithms to allow binary search, significantly improving the speed of contact retrieval.

Conclusion

The Phonebook Application effectively meets the project objectives by providing a robust system for managing contacts.

The group worked collaboratively to overcome challenges and deliver a functional and efficient software solution.