NATIONAL UNIVERSITY
of Computer & Emerging Sciences

PROJECT REPORT

SCHOLARSHIP GRANT COLLECTION

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• Introduction

The Scholarship Grant Collection is a project designed to efficiently increase search time on older systems with limited hardware capabilities and slow data storage devices i.e HDD, CD-Drives. This system is designed for specialized users and academic support offices, it includes an updated Collection of Scholarship and Grants, providing a user-friendly interface. The primary goal is to reduce search time of large collections and database while also reducing the risk of disk thrashing.

• Objectives

The main objectives of the Scholarship Grant System are as follows:

Features:

- Add New scholarships
- Delete scholarships.
- Modify scholarships already included in collection.
- Search a Scholarship with ID of a scholarship.
- List all Available Scholarships in the collection

• Data Structure:

- Self Balancing Btree
- Sequential Array

BTree implementation:

Sr. No.	Algorithm	Time Complexity
1.	Search	O(log n)
2.	Insert	O(log n)
3.	Delete	O(log n)

Array (vector container) implementation:

Sr. No.	Algorithm	Time Complexity
1.	Search	O(n)
2.	Insert at end	O(1)
3.	Delete	O(n)

- Libraries included:

```
#include <iostream>
#include <fstream>
#include <string>
#include <vector>
#include <windows.h>
#include <iomanip>
#include <chrono>
```

• Conclusion

The Scholarship Grant Collection is a robust solution that reduces search time for the scholarship allocation process. It provides an efficient platform for administrators to manage credentials, view scholarship information, and monitor the budget. Additionally, the market forecast for HDD systems is 42.8 Billion USD out of which Slower HDD systems consist of a large proportion, with our project we aim to help them.

THANKYOU