Mini Project Report

Title: *__File Compressor & Decompressor__*

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1. Introduction

The *File Compressor & Decompressor* is a Java-based desktop application built using JavaFX.
It helps users easily compress multiple files into a single ZIP archive and decompress ZIP files to restore their contents.
The main objective of the project is to save storage space and simplify file management with a clean and interactive graphical interface.

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2. Abstract

This project provides a simple and efficient tool to handle file compression and decompression.
Users can select multiple files for compression or choose a ZIP file for extraction.
It uses Java's built-in `java.util.zip` package for file operations and displays real-time log messages after each process.
The application ensures easy file handling without using complex command-line tools.

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3. Tools Used

- **Programming Language:** Java 17
- **Framework:** JavaFX 17
- **IDE:** IntelliJ IDEA
- **Libraries:** java.util.zip
- **Operating System:** Windows 11

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4. Steps Involved in Building the Project

1. Set up JavaFX SDK and configured it with IntelliJ.
2. Designed the GUI using JavaFX controls like Buttons, Labels, and TextArea.
3. Implemented file selection using `FileChooser`.
4. Added compression logic using `ZipOutputStream`.
5. Added decompression logic using `ZipInputStream`.
6. Displayed operation logs (original size, compressed size, and time taken).
7. Built and packaged the project into an executable JAR file.

5. Conclusion

The *File Compressor & Decompressor* successfully compresses and decompresses files with ease.
It reduces storage usage and provides a simple interface for users to manage ZIP files.
This project demonstrates core concepts of file handling, JavaFX GUI design, and Java I/O streams effectively.

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6. Output Screenshot / Demo