PROJECT REPORT

A Description of the problem solved

Our Project is a **file compressor application**, named **ProZip**, which compresses and decompresses any file containing simple characters.

The application can compress files using the following algorithms: -

- **LZW (Lempel-Ziv-Welch)**
- **Huffman**
- **Shannon-Fano**

Project Design

The application opens a window having two tabs

a) Compressor b) Decompressor

which have the following options: -

- Input File
- Output File Name
- Output Location
- Algorithm (to be used to compress file)

Sample Input/Output

The application will take any file as an input and return its compressed version as output. The compressed version of any file can also be decompressed back to get the original file.

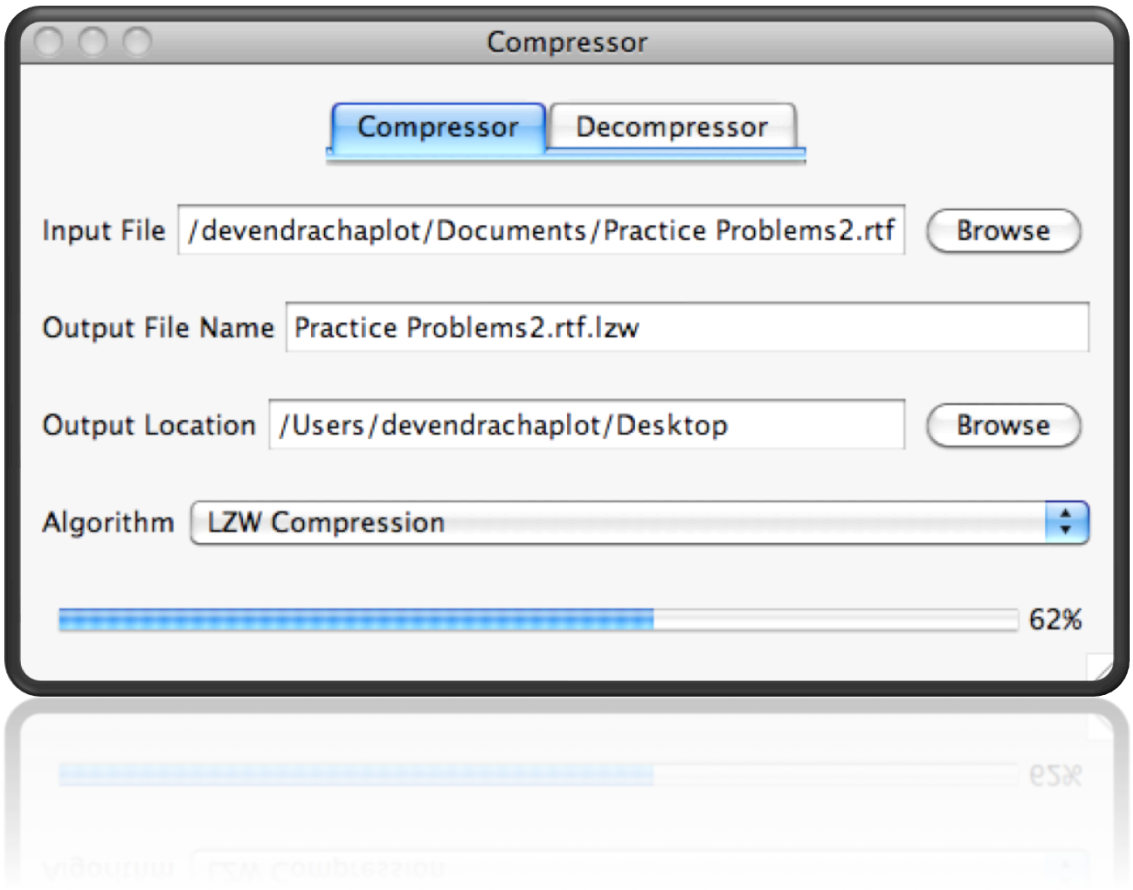
For eg.

Sample Input

Input file: "/devendrachaplot/……/Practice Problems2.rtf"
Output File Name: "Practice Problems.rtf.lzw"
Output Location: "/Users/devendrachaplot/Desktop"
Algorithm: LZW Compression

Sample Output

A compressed file named "Practice Problems.rtf.lzw" is made at the location "/Users/devendrachaplot/Desktop" which can be decompressed to get back the original file.



Functionality

- The application allows user to choose input file from **path dialog box**.
- Output file name is automatically displayed as the user choose input file name.
- Output location is set default to the folder containing the application.
- Provides a **choice box** to select the desired algorithm.
- Different algorithms produce compressed file with unique extensions
    - .lzw for LZW
    - .hfm for Huffman
    - .sfn for Shannon-Fano
- Shows the **percentage** of file compressed in a gauge bar.
- Plays **sound** on opening and closing the application and completion of compression or decompression.

Limitations

- It can only compress files upto size of 100KB.
- All types of files can be compressed using a variant LZW but output file size increases in some cases.
- The time taken to compress or decompress files increases exponentially with file size.
- Files having size less than 1KB can get bigger on compression.

Comparison of different compression algorithms