CHAPTER IV

ANALYSIS AND DESIGN

4.1 Analysis

4.1.1 Use case diagram

The actor here is user. The user operates the application. Then user is prompted to insert the name of a text file to be compressed. Then, user should select the compression algorithm, to use LZ77 or Shannon – Fano. After the algorithm has been selected, the program compresses the file and generated the compressed file to the folder. Then the program reads the compressed file size.

![Diagram](image)

*Figure 4.1.1 Use case diagram*
4.1.2 Class diagram

The process is as follows:

The main class calls the ReadAFile class as the class that processes the file input. Then, the ReadAFile class calls either LZ77Compress/Shannon Fano compress depending on user input. LZ77Compress has an inner class Token as an output object. ShannonFanoCompress has ShannonFano class that decodes the input into a proper shannon fano code. Both classes call BitArrayOutputStream class to generate the compressed output file.

![Class Diagram]

Figure 4.1.2 Class Diagram
4.2.2 Flow Chart

A flow chart helps us to understand the flow of the project better. Below is the given flowchart of the project:

![Flow Chart Diagram](image)

*Figure 4.1.3 Flow Chart*