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.
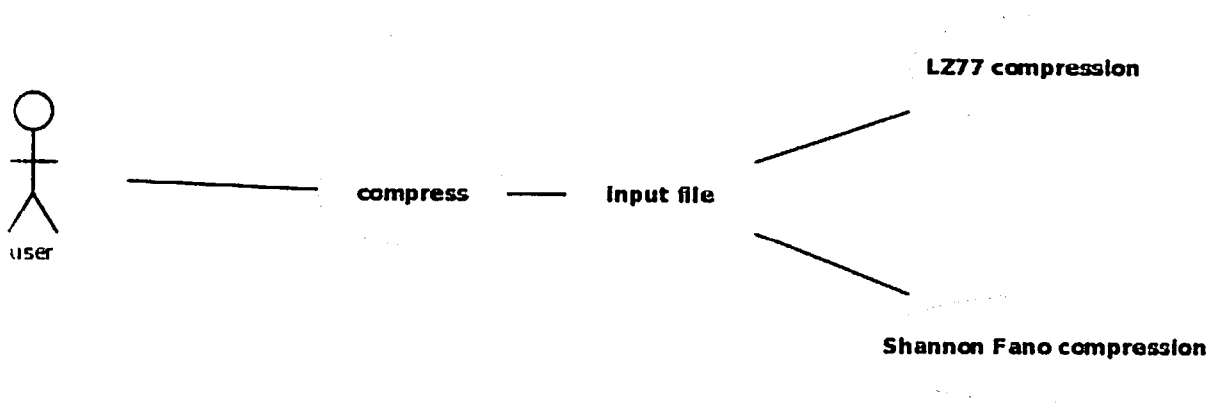

Figure 4.1.1 Use case diagram

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.
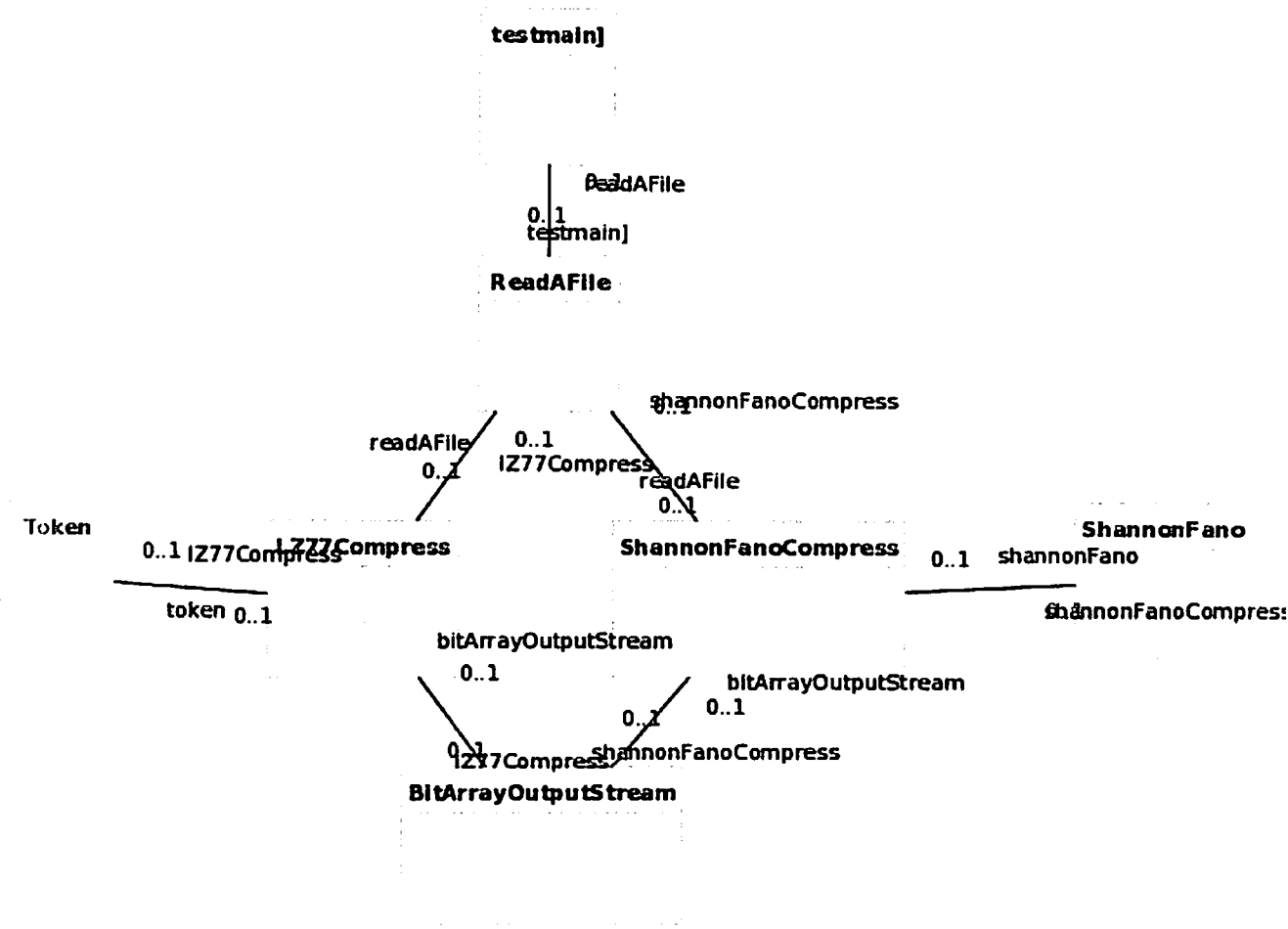

Figure 4.1.2 Class Diagram

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:
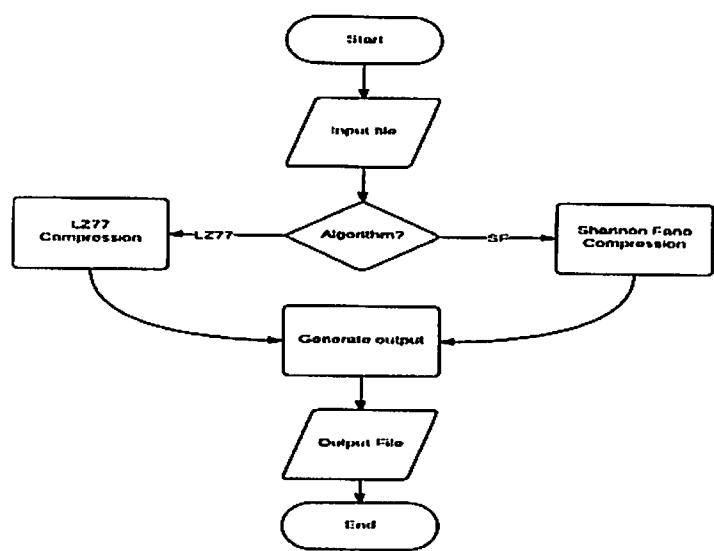

Figure 4.1.3 Flow Chart