ASSIGNMENT 1
LZ77 compression algorithm

Key Features:

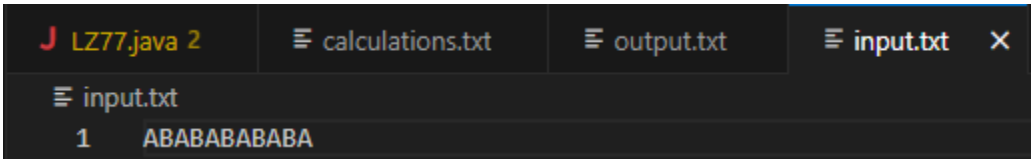
- **Compression (compress method):**
  - Reads input text from a file.
  - Uses a sliding window approach to find repeated patterns.
  - Generates LZ77 tags (position, length, next character).
  - Stores compressed data in an output file.
  - Calculates compression ratio and stores details in a calculations file.
- **Decompression (decompress method):**
  - Read the compressed tags.
  - Reconstructs the original text.
  - Saves the decompressed output back to the input file.
- **User Interaction:**
  - Allows users to choose between compression, decompression, or exit.

Test cases("Compression"):

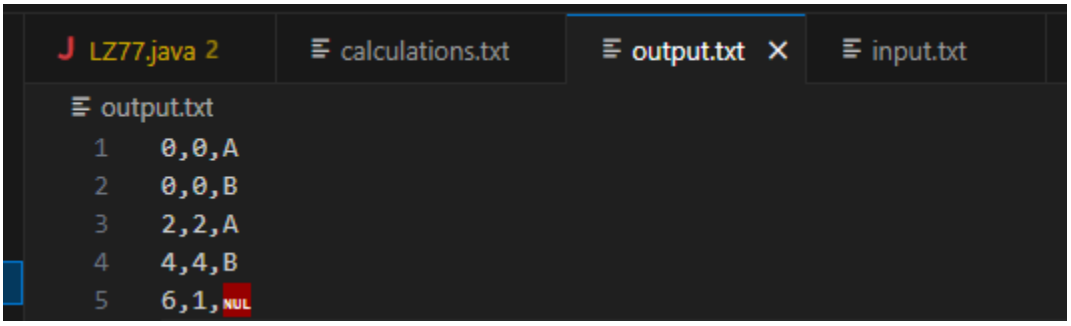
The interactions:

```
Enter your choice:
1: Compress
2: Decompress
3: Exit
1
```

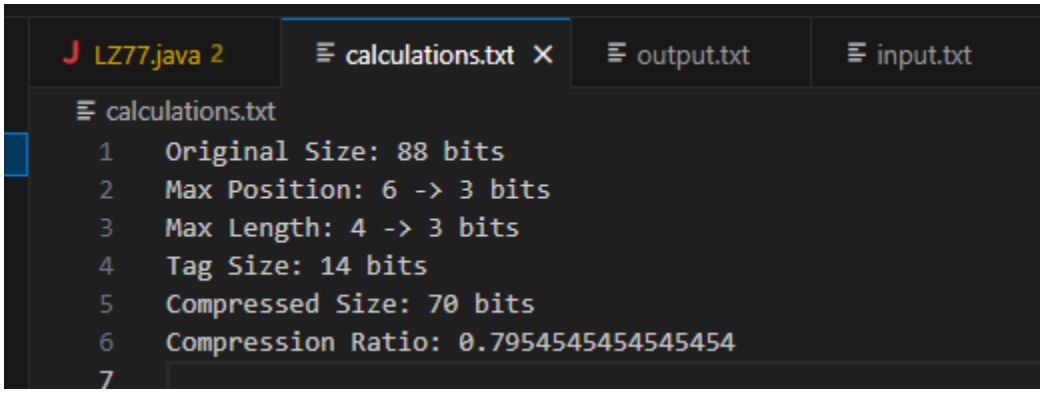
The Input:



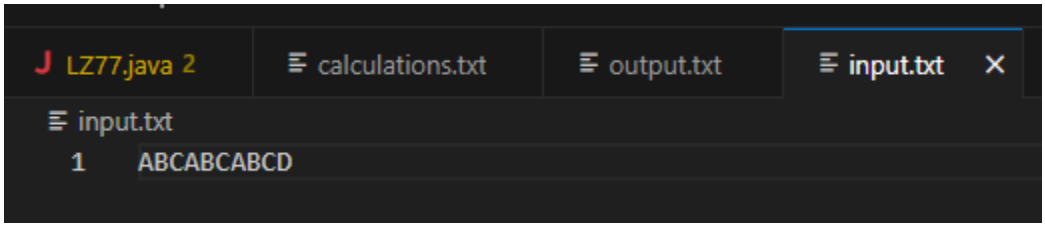
The output:

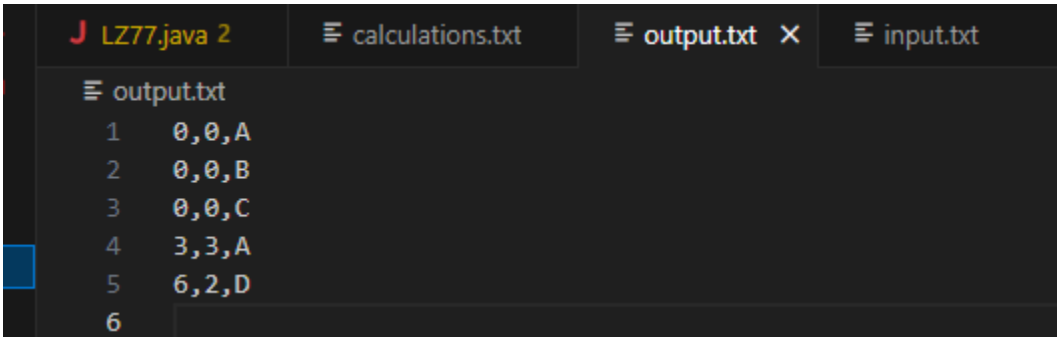


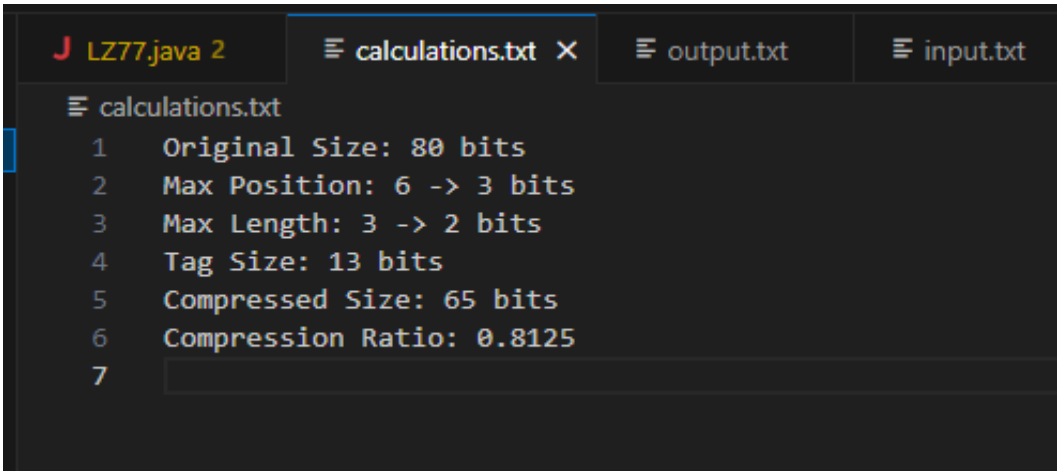
The calculations:



Test case 2:


LZ77.java 2
calculations.txt
output.txt
input.txt
input.txt
1 ABCABCABCD


LZ77.java 2
calculations.txt
output.txt
input.txt
output.txt
1 0,0,A
2 0,0,B
3 0,0,C
4 3,3,A
5 6,2,D
6


LZ77.java 2
calculations.txt
output.txt
input.txt
calculations.txt
1 Original Size: 80 bits
2 Max Position: 6 -> 3 bits
3 Max Length: 3 -> 2 bits
4 Tag Size: 13 bits
5 Compressed Size: 65 bits
6 Compression Ratio: 0.8125
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