University of Science and Technology
School of Computational Sciences and Artificial Intelligence.
DSAI 325, Introduction to Information Theory

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Assignment 1: Implementation of LZ77

Spring 2025

Assignment Guidelines

- Each student does the assignment individually.
- The assignment will be graded out of 10 marks.
- Due date: Saturday, February 22 [6 PM].
- For every day of delay in delivery, 0.75 mark will be deducted.
- The assignment must be submitted through the course classroom before the due date. Then, assignments will be discussed and graded by your TA(s) in your Lab.
- The assignment submission must include the following two files:
    1. A '.java' file that contains the code.
    2. A report containing a copy of the code accompanied by two test cases. For each test case, the original text size and the compressed data size should be calculated.

Assignment Requirements

Students are required to implement Java code of the following methods:

- Compress method: This method will take as input a path of a txt file containing one line plain text message to be compressed and return an output txt file that contain the LZ77 tags as normal text without saving the tags as binary.
- Decompress method: This method will take as input a path of a txt file containing the LZ77 tags to be decompressed and return an output txt file that contain the decompressed text.
- Main method: This method iteratively asks the user to enter his/her choice to compress, decompress, or terminate the program.

Providing the ability to handle repetitive sequences is considered as optional and deserves 1 mark bonus.

The Grading Criteria

		Marks
Code	Compress method	4
	Decompress method	4
	Main method, Code readability	1
Report		1