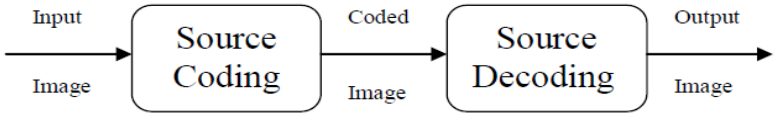
Ain Shams University
Faculty of Engineering
Electronics & Comm. Eng. Dept.

ECE457
Information Theory
Spring 2019

Information Theory Project

***Objective*:**

Practically applying your knowledge about Source coding techniques, especially Huffman, and its function of removing redundancy from any type of digital data (such as an image) to achieve an efficient way of communication.



Requirements:

Implement a MATLAB code taking its input as a gray imagethen performing the following functions:

1. Perform the coding and decoding processes using Huffman.
2. Show the input and output images
3. Determine the sizes of the input image and the output one from source coding
4. Calculate the compression ratio of the coded image.
5. Compare the input and output images. State whether there is any type of losses at the output image or not and justify your answer.

Note: All .m files have to be delivered with the report.

Project Rules:

-You are **not allowed** to use MATLAB built-in functions for source coding and decoding

- Project group must equal **2**
- Report must be presented as **.m file** stating your name in the subject
- **No Late reports** are accepted.
- If 2 **reports** are **similar**, both will have zero marks.
- If a **report** is **copied from the Internet,** it will have zero mark.
- If you use **a build in MATLAB source** coding functions, then you will have zero mark.
- .m file code should **be clear and readable** (i.e. should include comments as much as you can)
- The project should be sent to "**bishoy.milad.helmy@gmail.com**"with the following subject "**ITproject**"

-Dead Line date :**16/5 /2019 .**

- After the deadline, a day will be determined by **Eng. Bishoy** to ask you about the project deliverables that you submitted.