**CS-457 Digital Image Processing**

**Practical Task 05**

**Tasks:**

1. Download 2 grayscale images (8-bit) of HD resolution 1280x720 pixels. Image 1 will be used as the cover image, and the data from Image 2 will be used as secret information. Image 1 should have rapidly changing intensities, while image 2 should have regions where the pixels have similar values. Display both the images.
2. Display all 8 bit-planes of image 1 separately.
3. Implement the steganography algorithm to hide one bit of the second image in the cover image. Display Image 1 containing hidden information. At the receiver end, extract the hidden information and display it.
4. Repeat the above process to hide 2-bits, 3-bits, 4-bits, 5-bits, 6-bits, and 7-bits of image 2 in the cover image. Display the corresponding images, i.e. cover image with hidden data and the extracted hidden data.
5. Now, change the roles of the two images and repeat the above-mentioned steps.

**Submission Guidelines**

The title of the email must be: DIP Practical Task 05

The email will be searched with this exact case-sensitive phrase and the emails not appearing in the search results will not be considered.

Submit a well-structured report with the first page as the title page. The title page should contain the course code, course name, semester information, “Practical Task XX”, the names and registration numbers of the group members.

- Write the statement of each task.

- Paste the code and MAKE SURE the background of the code is white. No extra or blank lines should appear in the code segment.

- Place the outputs (images/graphs, etc.) generated by the code.

- Wherever necessary, explain/comment on the output.

Submit the corresponding code file as well.