22.03.2021

**CMSE-492 Term Project “Investigation of data hiding methods” Spring 2021**

**Task**:

1. Develop an online application allowing registered users to exchange secret messages using steganography method [1] with some encryption method (DES, AES, other) in Phase I and embedding into a pixel sequence defined by a pseudo-random number generator (PRNG). Sender can embed textual message or image, and receiver will extract the secret using pre-shared information on the cipher, PRNG, other parameters.
2. Report on the Term project shall be handed to Lab Coordinator Nada Kollah latest on **Monday, June 7, 2021, before 16.00. Later submission will be penalized by 10% off per day.**
3. Date of the defense will be agreed with Lab Coordinator after the report submission during June 8-10, 2021.
4. Report is prepared by a team. Teams are the same as in Laboratory works.
5. Report shall be arranged as follows:
   1. Cover page (University, Department, Course, Semester, Year, City, Country, Term Project subject, Team members, Lecturer, Lab assistant)
   2. Outline
   3. Problem definition (see Item 1 above)
   4. Method [1] description
   5. Description of your application implementing online message exchange system using method [1] in your programming language/operating system according to Item 1 above.
   6. Description of the tests conducted and their results, **screenshots** of them
   7. Conclusion
   8. References
   9. Appendices with the code developed and raw results obtained

Winrar or Zip file with all Term Project related materials (report, images used, test results, sources, executables, user guide) shall be provided. It shall contain runnable application (it is possible to install your program from the archived file, run it on your examples, and view results you got).

1. **Grading policy: 40% report and 60% explanations out of totally 20 points**

**References**

1. S.-J. Wang, Steganography of capacity required using modulo operator for embedding secret image, Applied Mathematics and Computation, 164 (2005), 99-116, doi:10.1016/j.amc.2004.04.059, <http://cmpe.emu.edu.tr/en/CourseLoad.aspx?id=CMSE492&page=lecturenotes>