

Course Title: Information System Security (11464)

Course Project

Cut-off date: **June 19, 2022**

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General information

Your Project should answer given problem statement related to information system security and consist of the design of some computer security system or technique, and the analysis and possible improvement of some existing system or technique. The main goal of the project is to do original work on a problem of interest in computer security.

Important Notes

- Cut-off date: June 19, 2022
- Submit to e-learning
- Demo, present, run and show source code to instructors.
- Project's grade is out of 10.
- The project must be well written for technical and non-technical audience.
- Use your own words to answer essay questions.
- Assignments are due ON TIME.
- No Project → Project will be Zero.
- Answer ONE Question form the following Questions:

NOTE: Implement ONLY ONE Question out of the following questions (10 marks).

Question #1:

Write a program that do the following:

- a) Asks the user for p , q , and e
- b) Generate the keys (K_{pub} , and K_{pr}) for RSA.
- c) Asks the user for a small text (e.g., 4 characters) and encrypt it.
- d) Asks the user for a small text (e.g., 4 characters) and decrypt it.

Question #2:

Write a program that do the following: a. Asks the user for the value of n , the value of e and a cipher text of 4 characters.

- a) Try to find p and q .
- b) Try to decrypt the cipher text.

Question #3:

Write a program that can perform a letter frequency attack on an additive cipher without human intervention. Your software should produce possible plaintexts in rough order of likelihood. It would be good if your user interface allows the user to specify “give me the top 10 possible plaintexts.”

Question #4: Machine Learning:

- c) Traffic analysis of Dark Web for Cyber Security Information
- d) Rapid Detection of Phishing URLs Using Machine Learning
- e) Android Malware Detection using Ensemble Machine Learning based on Network Traffic flow