CSE721: Project Encryption/Decryption Tool

(Marks: 50 [Project Submission 35 + Showcasing & Viva 15])

This group project (max two members) has the following two parts.

Part 1 (28 Marks):

In the first part, you will need to implement a tool that can encrypt and decrypt in four different classic crypto systems: Caesar Cipher, Affine Cipher, Playfair Cipher and Hill Cipher (assuming a 2x2 key matrix).

For each cipher, you will need an interface (either via a console or GUI) to interact with the tool in order to select the respective cipher and operation (encryption or decryption), input the respective key and input either a plaintext (for the encryption operation) or a ciphertext (for the decryption operation).

You will need to make your tool as user-friendly as possible.

Part 2 (7 Marks):

You will need to design a crypto cracker tool which can be used to launch known plaintext attacks over an Hill Cipher.

Submission Instructions:

Deliverables:

The project has the following deliverables:

- The tool application needs to be uploaded to a GitHub repository with detailed instructions on how to run it in a particular OS.
- A report consisting of the architecture of your tool, the list of libraries used to develop your tool along with their links and a brief description of each operation for each cipher along with the captured screenshots and the GitHub link.

Development language and libraries:

The chat application can be developed in any language. You can use any libraries from the Internet by referencing it properly in your report. You can take help from any LLM application such as ChatGPT, however, please add appropriate credit where you used it.

Deadlines and other instructions:

Form a group of max two members and send me an email with your group information by **December 5, 2025.**

The deadline of the project submission is **January 2, 2026**.

There will be a **viva** session (**15 Marks**) with project showcasing on **January 4, 2026**.

Submit the project using this Google form: https://forms.gle/pF3wgBhfTJXdtk4L7