University of Wolverhampton

School of Engineering, Computational and Mathematical Sciences

4CS001

Introduction Programming And Problem Solving

The Complete Report in the Ceaser Cipher Program

Submitted By:

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Introduction:

The task of Coursework 1 is to create a Python program to encrypt or decrypt a word or a line using a technique called Ceaser Cipher. Ceaser Cipher is a simple technique of encrypting or decrypting a word or line by shifting the word by a certain shift number. The shift number is only known by the two people communicating with the help of Ceaser Cipher. The program uses various functions to achieve this, and the logic of encrypting and decrypting is also isolated in a function.

The functions used in the program is :

1) Welcome_message() : Displays a welcome message
2) Encrypt(): Encrypts a word or line
3) Decrypt(): Decrypts a word or a line
4) Message_or_file(): Prompts the user for console use or file use
5) Enter_message(): Initially used to display message to get word from user
6) Is_file(): Checks if the file is found in the device
7) Process_file(): Process the file
8) Write_message(): Writes the decrypted or encrypted word in the file

1) What are the most challenging aspects of the coursework task?

Ans: The most challenging aspects of the coursework are also the most important, particularly the logic for encrypting and decrypting using the Caesar Cipher technique. The Caesar Cipher is a technique in which the word to be encrypted or decrypted is shifted by a certain number, known only to the two people who are communicating. The logic for encrypting or decrypting the word can be explained by the ASCII System. The ASCII system is the system of representing characters via a number already determined by the professionals who developed it. Now, we use the ASCII value of a character and add the shift number to it to get the encrypted word, or subtract. Also, file handling in this coursework is a challenging aspect due to it being a relatively new concept.

2) How did you go about completing the task?

Ans: The way I approached the task was to first figure out the logic of decrypting and encrypting in Ceaser Cipher. Then, after, I created the program that would run on the console only and would not have any file related operation. After that, I refactored the code to support file-related operations like read and write, and finally, I checked for errors and implemented the code for error handling. For the final touch, I fixed some indentation, some variable names, removed unwanted elements from the codebase, and added documentation for all the functions used for better readability code.

3) What have you learned over the course of completing this coursework task?

Ans: The one major takeaway from the coursework is the lesson of clean and readable code and documentation. The importance of clean code and documentation is really helpful and necessary for a program, as it lets other coders instantly understand the functionality of a function without having to read the whole function. Also, the flow of code is a lesson learned since it deals with a lot of functions and forces us to manage every single function and understand their flow. So, it gives us glimpses of project management and .