Operation Shift Cipher

Aim: The idea of this cipher is to provide strong security to the documents so that it can be transferred from one location to another securely and if the content of the file has been changed then it can be detected easily.

Problem Definition: Opening the file, applying operation shift cipher and generating a dynamic key and then decrypting the encrypted file using the key and showing the content of decrypted file.

Inputs: File to be encrypted and decrypted.

Steps:

1. Load the file to be encrypted.
2. Generate starting key dynamically.
3. Follow the following sequence for encryption.

   Eg: ankita
   Key: 4
   Ascii representation : 97 110 107 105 116 97 10

   Applying cipher :
   Addition : 97+4=101
   Multiplication : 101*110=11110
   Substraction : 11110-107=11003
   Division : 105/2=52.5
   Addition : 52.5+116=168.5
   Multiplication : 168.5*97=16344.5
   Substraction : 16344.5-10=16334.5

   Encrypted Ascii representation : 101.0 11110.0 11003.0 52.5 168.5 16344.5 16334.5

   By following the reverse procedure it can be decrypted.
   Decrypted Ascii representation : 97 110 107 105 116 97 10

4. Show the encrypted file.
5. Use the encrypted file to decrypt the file and follow the reverse procedure.

Observations:

- Change in even one bit of the encrypted file can result in changing the whole document.
- Highly secure.
- Fast.

Results: Hence, this application can be used for secure transfer of files as change in even one bit can result in changing the entire content of the file