



বরেন্দ্র বিশ্ববিদ্যালয়
VARENDRA UNIVERSITY

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Lab Report-01

Course Title: Cryptography and Network Security Lab

Course Code: CSE – 432

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❑ Experiment No:- 01

❑ Experiment Name: Caesar Cipher Implementation in c++.

❖ Input:

- A string containing the plaintext.
- An integer key representing the shift amount.

❖ Encryption Steps:

1. Iterate through each character in the plaintext.
2. If the character is an uppercase letter:
 - Shift it forward by the key positions within the range 'A' to 'Z'.
3. If the character is a lowercase letter:
 - Shift it forward by the key positions within the range 'a' to 'z'.
4. If the character is non-alphabetic:
 - Leave it unchanged.
5. Concatenate the result to form the ciphertext.

❖ Decryption Steps:

- Perform the same process but shift in the opposite direction by using (26 - key).

❖ Code:

<pre>#include <iostream> using namespace std; string encrypt(string text, int key) { string result = ""; for (char c : text) { if (isupper(c)) result += char(int((c + key - 'A') % 26 + 'A')); else if (islower(c)) result += char(int((c + key - 'a') % 26 + 'a')); else result += c; } return result; } string decrypt(string text, int key) { return encrypt(text, 26 - key); }</pre>	<pre>int main() { string text; int key; cout << "Enter text: "; getline(cin, text); cout << "Enter key (0-25): "; cin >> key; string encrypted = encrypt(text, key); string decrypted = decrypt(encrypted, key); cout << "Encrypted: " << encrypted << endl; cout << "Decrypted: " << decrypted << endl; return 0; }</pre>
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❖ Output:

```
PS C:\Users\User\Desktop\9th semester> cd "c:\Users\User\Desktop\9th semester\Crypto\"
1 }
Enter text: Hello
Enter key (0-25): 3
Encrypted: Khoor
Decrypted: Hello
PS C:\Users\User\Desktop\9th semester\Crypto> █
```