***SAVEETHA SCHOOL OF ENGINEERING***

***SAVEETHA INSTITUTE OF MEDICAL AND TECHNICAL SCIENCE***

**EXP NO 5 Encrypt and decrypt a message by implementing Rail fence transposition technique.**

**AIM**

To Encrypt and decrypt a message by implementing Rail fence transposition technique.

**PROCEDURE**

* Download and install any c application
* Traverse the given text one character at a time .
* For each character, transform the given character as per the rule,depending on whether we’re encrypting or decrypting the text.
* Return the new string generated.

**PROGRAM**

#include <stdio.h>

#include <string.h>

#define MAX\_LEN 100

void encryptMessage(char \*message, int rails, char \*encryptedMessage) {

int len = strlen(message), index = 0;

for (int row = 0; row < rails; row++) {

for (int i = row; i < len; i += 2 \* (rails - 1)) {

encryptedMessage[index++] = message[i];

if (row != 0 && row != rails - 1 && i + 2 \* (rails - row - 1) < len)

encryptedMessage[index++] = message[i + 2 \* (rails - row - 1)];

}

}

encryptedMessage[len] = '\0';

}

void decryptMessage(char \*encryptedMessage, int rails, char \*decryptedMessage) {

int len = strlen(encryptedMessage), index = 0;

for (int row = 0; row < rails; row++) {

for (int i = row; i < len; i += 2 \* (rails - 1)) {

decryptedMessage[i] = encryptedMessage[index++];

if (row != 0 && row != rails - 1 && i + 2 \* (rails - row - 1) < len)

decryptedMessage[i + 2 \* (rails - row - 1)] = encryptedMessage[index++];

}

}

decryptedMessage[len] = '\0';

}

int main() {

char message[MAX\_LEN], encryptedMessage[MAX\_LEN], decryptedMessage[MAX\_LEN];

int rails;

printf("Enter the message to be encrypted: ");

fgets(message, sizeof(message), stdin);

printf("Enter the number of rails: ");

scanf("%d", &rails);

encryptMessage(message, rails, encryptedMessage);

printf("Encrypted message: %s\n", encryptedMessage);

decryptMessage(encryptedMessage, rails, decryptedMessage);

printf("Decrypted message: %s\n", decryptedMessage);

return 0;

}

**OUTPUT**

