Walchand College Of Engineering, Sangli

Department of Computer Science and Engineering

Subject: C&NS Lab

Batch: B4

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Assignment 4

Title: Implementation of Vigenere Cipher.

Introduction:

- Vigenere Cipher is a method of encrypting alphabetic text. It uses a simple form of polyalphabetic substitution. A polyalphabetic cipher is any cipher based on substitution, using multiple substitution alphabets. The encryption of the original text is done using the Vigenère square or Vigenère table.
- The table consists of the alphabets written out 26 times in different rows, each alphabet shifted cyclically to the left compared to the previous alphabet, corresponding to the 26 possible ceaser cipher.
- At different points in the encryption process, the cipher uses a different alphabet from one of the rows.
- The alphabet used at each point depends on a repeating keyword.

Encryption

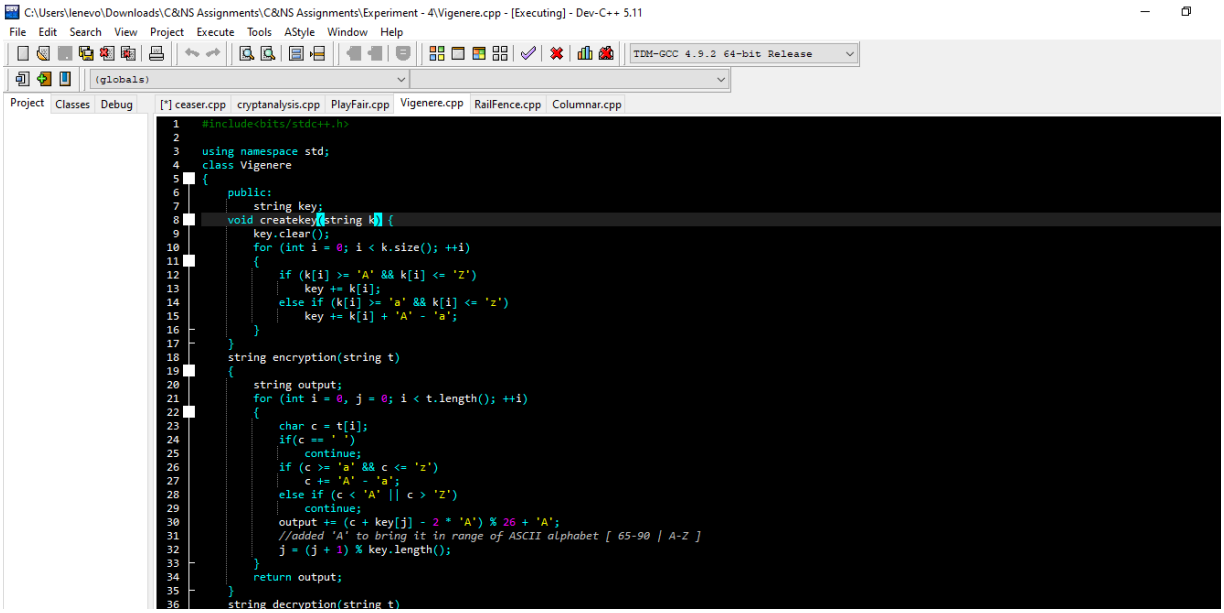
The plaintext(P) and key(K) are added modulo 26.

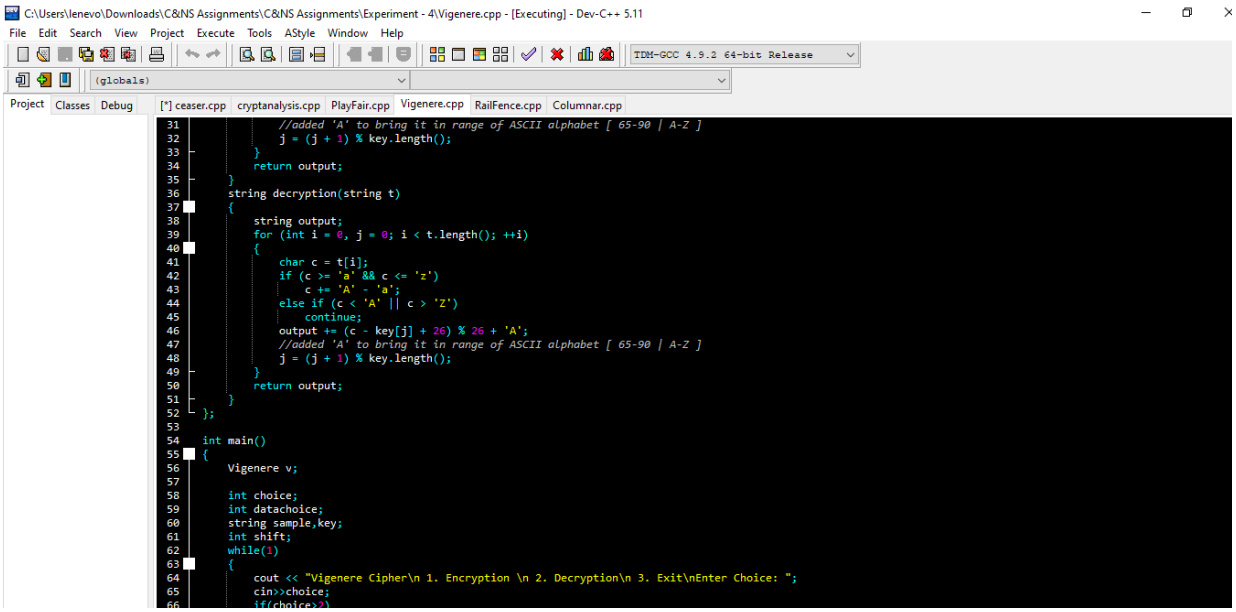
$E_i = (P_i + K_i) \bmod 26$

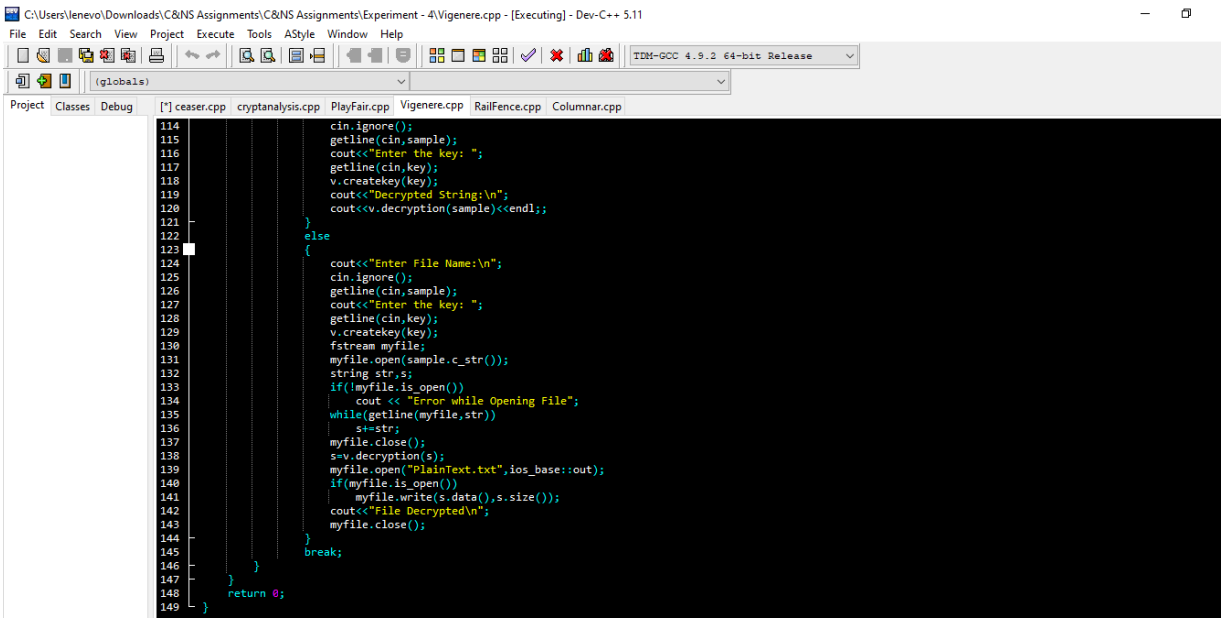
Decryption

$D_i = (E_i - K_i + 26) \bmod 26$

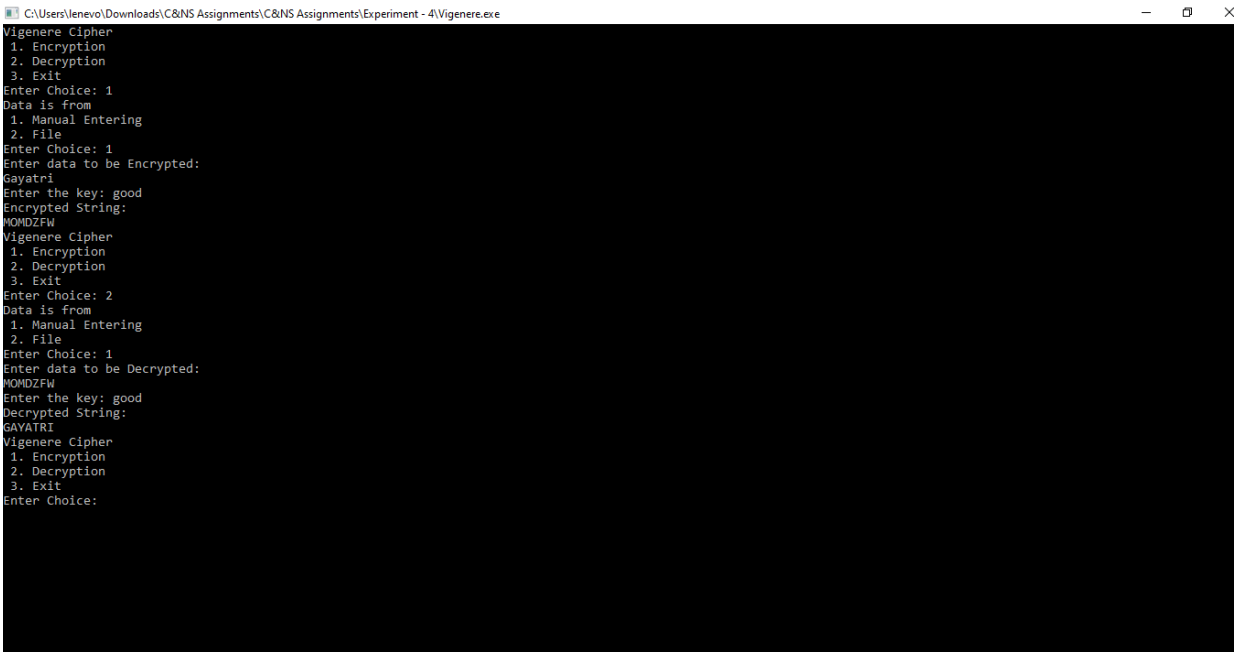
Code Screenshot:






C:\Users\lenevo\Downloads\C&NS Assignments\C&NS Assignments\Experiment - 4\Vigenere.cpp - [Executing] - Dev-C++ 5.11
File Edit Search View Project Execute Tools AStyle Window Help
TDM-GCC 4.9.2 64-bit Release
(globals)
Project Classes Debug
[*] ceaser.cpp cryptanalysis.cpp PlayFair.cpp Vigenere.cpp RailFence.cpp Columnar.cpp
cin.ignore();
getline(cin,sample);
cout<<"Enter the key: ";
getline(cin,key);
v.createkey(key);
cout<<"Decrypted String:\n";
cout<<v.decryption(sample)<<endl;;
}
else
{
cout<<"Enter File Name:\n";
cin.ignore();
getline(cin,sample);
cout<<"Enter the key: ";
getline(cin,key);
v.createkey(key);
fstream myfile;
myfile.open(sample.c_str());
string str,s;
if(!myfile.is_open())
cout << "Error while Opening File";
while(getline(myfile,str))
s+=str;
myfile.close();
s=v.decryption(s);
myfile.open("PlainText.txt",ios_base::out);
if(myfile.is_open())
myfile.write(s.data(),s.size());
cout<<"File Decrypted\n";
myfile.close();
}
break;
}
}
return 0;
}

Output:


C:\Users\lenevo\Downloads\C&NS Assignments\C&NS Assignments\Experiment - 4\Vigenere.exe
Vigenere Cipher
1. Encryption
2. Decryption
3. Exit
Enter Choice: 1
Data is from
1. Manual Entering
2. File
Enter Choice: 1
Enter data to be Encrypted:
Gayatri
Enter the key: good
Encrypted String:
MOMDZFW
Vigenere Cipher
1. Encryption
2. Decryption
3. Exit
Enter Choice: 2
Data is from
1. Manual Entering
2. File
Enter Choice: 1
Enter data to be Decrypted:
MOMDZFW
Enter the key: good
Decrypted String:
GAYATRI
Vigenere Cipher
1. Encryption
2. Decryption
3. Exit
Enter Choice: