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CSC220 -- Project 3

2017-07-8

# Class Hierarchy

Secret is the base class. It is abstract.

Caesar, Vigenere and Autokey are non-abstract derived classes of Secret.

# secret.hpp

// Secret Abstract base class

#include<iostream>

**using** std**::**string**;**

class Secret **{**

protected**:**

string key**;**

string message**;**

bool encrypted**;**

public**:**

Secret**(**std**::**string m**)**

**{**

key **=** ""**;**

message **=** m**;**

encrypted **=** **false;**

**}**

Secret**()**

**{**

key **=** ""**;**

message **=** ""**;**

encrypted **=** **false;**

**}**

**~**Secret**()** **{**

**delete** **&**key**;**

**delete** **&**message**;**

**delete** **&**encrypted**;**

**}**

virtual void encrypt**(**string key**)** **=** 0**;**

virtual void decrypt**(**string key**)** **=** 0**;**

void display**();**

void setMessage**(**string m**);**

**};**

# main()

#include<iostream>

#include"caesar.hpp"

#include"vigenere.hpp"

#include"autokey.hpp"

**using** std**::**cout**;**

**using** std**::**endl**;**

const int SECRETS **=** 6**;**

int main**()** **{**

Secret **\*** secrets**[**SECRETS**];**

secrets**[**0**]** **=** **new** Autokey**(**"Faysal Autokey"**);**

secrets**[**1**]** **=** **new** Autokey**(**"Faysal Autokey the Second"**);**

secrets**[**2**]** **=** **new** Vigenere**(**"Faysal Vigenere"**);**

secrets**[**3**]** **=** **new** Vigenere**(**"Faysal Vigenere the Second"**);**

secrets**[**4**]** **=** **new** Caesar**(**"Faysal Caesar"**);**

secrets**[**5**]** **=** **new** Caesar**(**"Faysal Caesar the Second"**);**

cout **<<** endl **<<** "Printing Secret Messages" **<<** endl**;**

**for** **(**int i**=**0**;** i**<**SECRETS**;** i**++)** **{**

secrets**[**i**]->**display**();**

**}**

cout **<<** endl **<<** "Printing Encrypted Messages" **<<** endl**;**

**for** **(**int i**=**0**;** i**<**SECRETS**;** i**++)** **{**

secrets**[**i**]->**encrypt**(**"ABC"**);**

secrets**[**i**]->**display**();**

**}**

cout **<<** endl **<<** "Printing Decrypted Messages" **<<** endl**;**

**for** **(**int i**=**0**;** i**<**SECRETS**;** i**++)** **{**

secrets**[**i**]->**decrypt**(**"ABC"**);**

secrets**[**i**]->**display**();**

**}**

**}**

# Sample Output

faysal@DESKTOP-AOGE5FF:/mnt/c/Users/faysa/Dropbox/School/CSC220/Project3/project3$ make

g++ --std=c++11 -Wall -pedantic -c autokey.cpp

g++ --std=c++11 -Wall -pedantic -c vigenere.cpp

g++ --std=c++11 -Wall -pedantic -c caesar.cpp

g++ --std=c++11 -Wall -pedantic -c secret.cpp

g++ --std=c++11 -Wall -pedantic proj3.cpp autokey.o vigenere.o caesar.o secret.o -o encrypt

faysal@DESKTOP-AOGE5FF:/mnt/c/Users/faysa/Dropbox/School/CSC220/Project3/project3$ ./encrypt

Printing Secret Messages

Faysal Autokey

Faysal Autokey the Second

Faysal Vigenere

Faysal Vigenere the Second

Faysal Caesar

Faysal Caesar the Second

Printing Encrypted Messages

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�����哢ᔰ����ᅔ�ʃ���

������a��������

������a��������a���b������

������a������

������a������a���a������

Printing Decrypted Messages

Faysal Autokey

Faysal Autokey the Second

Faysal Vigenere

Faysal Vigenere the Second

Faysal Caesar

Faysal Caesar the Second