# Lab: Data Encryption

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| * This is worth 5 points and due today’s midnight. * Use the following naming convention: homework, underscore, last name, first initial, and extension (e.g., Lab\_Encrypt\_ImG.docx). |

## 1. Preparation

First, if your SQL Server does not have **CISEncrypt** database, create it using this script: **CISEncrypt-Table-Create (Lab).sql**.

Next, perform the lab using this script: **Encryption-Cert (Lab).sql**.

## 2. Deliverables

-- Display the original table

select \* from dbo.cust

go

/\* Task #1: Show the original table in a screen shot. \*/

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-- Display the encrypted table

select \* from dbo.cust\_encrypt

go

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/\* Task #2: Show the encrypted table in a screen shot. Also, explain why we need to change the data type for encryption. \*/

It would be more difficult for an outside party to decrypt the credit card numbers with a symmetric key they do not have rather than a passphrase they can easily guess.

-- Display the encrypted table

select \* from dbo.cust\_encrypt

go

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/\* Task #3: Show the encrypted table in a screen shot. Also, explain the encryption process after Task #2. \*/

The symmetric key is now being encrypted using a certificate to further complicate the encryption of the table.

-- Display the decrypted table

select fname,

lname,

cardnumber = convert(nvarchar(25), DecryptByKey(cardnumber\_encrypt))

from dbo.cust\_encrypt

go

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/\* Task #4: Show the encrypted table in a screen shot. Also, explain the decryption process after Task #3. \*/

/\* Did you get the original data back? If not, what is going on? \*/

No the original data was not retrieved. The decryption used the master key to decrypt the certificate. Due to the symmetric key being encrypted by the certificate, the original data was not retrieved.

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