Звіт до практичної

Завдання 7.1

using System;

using System.Security.Cryptography;

using System.Text;

namespace Task7.\_1

{

class AsymmetricEncryption

{

private static RSAParameters \_publicKey, \_privateKey;

public static void AssignNewKey()

{

//алгоритм RSA

using (var rsa = new RSACryptoServiceProvider(2048))

{

rsa.PersistKeyInCsp = false;

\_publicKey = rsa.ExportParameters(false);

\_privateKey = rsa.ExportParameters(true);

}

}

public static byte[] EncryptData(byte[] dataToEncrypt)

{

byte[] cipherBytes;

using (var rsa = new RSACryptoServiceProvider())

{

rsa.PersistKeyInCsp = false;

rsa.ImportParameters(\_publicKey);

cipherBytes = rsa.Encrypt(dataToEncrypt, true);

}

return cipherBytes;

}

public static byte[] DecryptData(byte[] dataToDecrypt)

{

byte[] plaintext;

using (var rsa = new RSACryptoServiceProvider())

{

rsa.PersistKeyInCsp = false;

rsa.ImportParameters(\_privateKey);

plaintext = rsa.Decrypt(dataToDecrypt, true);

}

return plaintext;

}

}

class Program

{

public static void Main()

{

const string original = "This message is very secret";

AsymmetricEncryption.AssignNewKey();

var encrypted = AsymmetricEncryption.EncryptData(Encoding.UTF8.GetBytes(original));

var decrypted = AsymmetricEncryption.DecryptData(encrypted);

Console.WriteLine("Original Message: " + original);

Console.WriteLine("Encrypted Message: " + Convert.ToBase64String(encrypted));

Console.WriteLine("Decrypted Message: " + Encoding.UTF8.GetString(decrypted));

}

}

}

Результат для повідомлення This message is very secret

