1. Write Testable Code with Moq

## **Scenario**

You are tasked to write a unit test code for the below scenario.

The application in which you are teamed up with, deals with a mail server communication in which your application tries to send mail to its users upon every transaction. Your role is to write unit testing the module that contains send mail functionality. You wanted to perform testing the module without sending any email.

After investigating the problem scenario, you found a solution and that is creating **mock** objects of these external dependencies in the unit testing project so that you can achieve speedier test execution and loose coupling of code.

**CODE:**

**CustomerComm.cs**

namespace CustomerCommLib

{

public class CustomerComm

{

IMailSender \_mailSender;

public CustomerComm(IMailSender mailSender)

{

\_mailSender = mailSender;

}

public bool SendMailToCustomer()

{

\_mailSender.SendMail("cust123@abc.com", "Some Message");

return true;

}

}

}

**MailSender.cs**

using System.Net;

using System.Net.Mail;

namespace CustomerCommLib

{

public interface IMailSender

{

bool SendMail(string toAddress, string message);

}

public class MailSender : IMailSender

{

public bool SendMail(string toAddress, string message)

{

MailMessage mail = new MailMessage();

SmtpClient SmtpServer = new SmtpClient("smtp.gmail.com");

mail.From = new MailAddress("your\_email\_address@gmail.com");

mail.To.Add(toAddress);

mail.Subject = "Test Mail";

mail.Body = message;

SmtpServer.Port = 587;

SmtpServer.Credentials = new NetworkCredential("username", "password");

SmtpServer.EnableSsl = true;

SmtpServer.Send(mail);

return true;

}

}

}

**CustomerCommTests.cs**

using NUnit.Framework;

using Moq;

using CustomerCommLib; // Add this line

namespace CustomerComm.Tests

{

[TestFixture]

public class CustomerCommTests

{

private Mock<IMailSender> \_mockMailSender;

private CustomerComm \_customerComm;

[OneTimeSetUp]

public void Setup()

{

\_mockMailSender = new Mock<IMailSender>();

\_mockMailSender.Setup(m => m.SendMail(It.IsAny<string>(), It.IsAny<string>())).Returns(true);

\_customerComm = new CustomerComm(\_mockMailSender.Object);

}

[TestCase]

public void SendMailToCustomer\_ReturnsTrue()

{

// Act

bool result = \_customerComm.SendMailToCustomer();

// Assert

Assert.IsTrue(result);

}

}

}

**OUTPUT:**

