Graduate .NET Developer – Technical Test

Please note the following before completing the test:

- This technical test should be completed in C# preferably using Visual Studio
- Submission should be a zip file containing the entire solution
- Failure to accomplish the requirements of the exercise will not necessarily eliminate you from consideration as we will also be evaluating the approach you use and quality of code
- Using a console application is expected, but other user interfaces are acceptable
- The usage of unit tests to cover the exercise is encouraged but not mandatory

The test consists of 3 parts:

1. Please complete the exercise below
2. What are the response codes for each of the sample responses (1 and 2)?
3. Based on the above exercise, please list any relevant / meaningful questions that you would ask the partner we are integrating with before AND after trying to carry out the integration according to their API

Exercise

Imagine you need to integrate with a Mobile Operator partner's API to deliver Mobile Top Ups. Please find below the API definition called "Sample API – Partner X". Their API accepts XML formatted messages. Their platform API expects us to:

- Send requests to their platform in the format defined in the API documentation
- Receive and parse their responses (please use the sample responses provided below)

To complete this exercise you need to implement a small application which is able to handle the requests and responses. This application should be able to

a) build an XML request (please use the samples request 1 and request 2) and convert it to a byte array for sending *
b) accept a response (please use the samples response 1 and response 2) and parse it into a response message object

* The actual sending will **NOT** need to be handled as part of this test and is outside of scope.

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Transactions Sample

	Transaction 1	Transaction 2
Request	MessageDate current date MessageTime current time MessageID 332526 PhoneNumber 630000000000 Amount 25	MessageDate current date MessageTime current time MessageID 332527 PhoneNumber 639999999999 Amount 25
Response	{69,90,69,45,88,77,76,45,77,115,103,48,50,60,77,101,115,115,97,103,101,62,13,10,32,32,60,72,101,97,100,101,114,62,13,10,32,32,32,32,60,77,101,115,115,97,103,101,68,97,116,101,62,50,48,49,48,48,51,50,52,60,47,77,101,115,115,97,103,101,68,97,116,101,62,13,10,32,32,32,32,60,77,101,115,115,97,103,101,84,105,109,101,62,49,57,50,54,48,50,60,47,77,101,115,115,115,97,103,101,84,105,109,101,62,13,10,32,32,60,47,72,101,97,100,101,114,62,13,10,32,32,60,66,111,100,121,62,13,10,32,32,32,32,60,84,114,97,110,115,97,99,116,105,111,110,73,68,62,51,51,50,53,50,54,60,47,84,114,97,110,115,97,99,116,105,111,110,73,68,62,13,10,32,32,32,32,60,84,114,97,110,115,97,99,116,105,111,110,78,117,109,98,101,114,62,49,50,49,48,52,53,50,60,47,84,114,97,110,115,97,99,116,105,111,110,78,117,109,98,101,114,62,13,10,32,32,32,32,60,80,104,111,110,101,78,117,109,98,101,114,62,54,51,48,48,48,48,48,48,48,48,48,60,47,80,104,111,110,101,78,117,109,98,101,114,62,13,10,32,32,32,32,60,65,109,111,117,110,116,62,48,48,48,48,48,50,53,48,48,60,47,65,109,111,117,110,116,62,13,10,32,32,32,32,60,82,101,115,117,108,116,62,48,49,60,47,82,101,115,117,108,116,62,13,10,32,32,60,47,66,111,100,121,62,13,10,60,47,77,101,115,115,97,103,101,62}	{69,90,69,45,88,77,76,45,77,115,103,48,50,60,77,101,115,115,97,103,101,62,13,10,32,32,60,72,101,97,100,101,114,62,13,10,32,32,32,32,60,77,101,115,115,97,103,101,68,97,116,101,62,50,48,49,48,48,51,50,52,60,47,77,101,115,115,97,103,101,68,97,116,101,62,13,10,32,32,32,32,60,77,101,115,115,97,103,101,84,105,109,101,62,49,57,50,56,48,54,60,47,77,101,115,115,97,103,101,84,105,109,101,62,13,10,32,32,60,47,72,101,97,100,101,114,62,13,10,32,32,60,66,111,100,121,62,13,10,32,32,32,32,60,84,114,97,110,115,97,99,116,105,111,110,73,68,62,51,51,50,53,50,55,60,47,84,114,97,110,115,97,99,116,105,111,110,73,68,62,13,10,32,32,32,32,60,84,114,97,110,115,97,99,116,105,111,110,78,117,109,98,101,114,62,49,50,49,48,52,55,48,60,47,84,114,97,110,115,97,99,116,105,111,110,78,117,109,98,101,114,62,13,10,32,32,32,32,60,80,104,111,110,101,78,117,109,98,101,114,62,54,51,57,57,57,57,57,57,57,57,57,60,47,80,104,111,110,101,78,117,109,98,101,114,62,13,10,32,32,32,32,60,65,109,111,117,110,116,62,48,48,48,48,48,50,53,48,48,60,47,65,109,111,117,110,116,62,13,10,32,32,32,32,60,82,101,115,117,108,116,62,48,51,60,47,82,101,115,117,108,116,62,13,10,32,32,60,47,66,111,100,121,62,13,10,60,47,77,101,115,115,97,103,101,62}

Sample API – Partner X

Purpose

To outline the formats for sending messages to X service and the responses that will be returned. You must send XML with the nodes and child nodes described in the messages section below.

Messages

Messages will be sent as a byte stream. Messages will be formatted as XML.

Request Message (Msg01)

Header			Contains Header Details
	Identifier	String(3)	Identifies your company – use "EZE"
	MessageDate	String(8)	ddMMyyyy
	MessageTime	String(6)	hhmmss
Body			Contains Transaction Details
	MessageID	Int	Uniquely identifies message
	PhoneNumber	String(12)	Numeric Only
	Amount	String(10)	Numeric Only – no decimals (value in cents)

Response Message (Msg02)

Header			Contains Header Details
	MessageDate	String(8)	ddMMyyyy
	MessageTime	String(6)	hhmmss
Body			Contains Transaction Details
	TransactionID	Int	Uniquely identifies message
	TransactionNumber	Int	Uniquely identifies message
	PhoneNumber	String(12)	Numeric Only
	Amount	String(10)	Numeric Only – no decimals (value in cents)
	Result	String(2)	Result Code for transaction

Result Codes

01	Success
99	Failure
999	Invalid Message