**Important: use .NET Framework 4.7.2**

**1. Create a console application for inserting dummy data in a database.**

a) Create a database that contains a table Offers with the following columns :

[ID]

,[CheckInDate]

,[StayDurationNights]

,[PersonCombination]

,[Service\_Code]

,[Price]

,[PricePerAdult]

,[PricePerChild]

,[StrikePrice]

,[StrikePricePerAdult]

,[StrikePricePerChild]

,[ShowStrikePrice]

,[LastUpdated]

b) Write a Stored Procedure "SP\_Offers\_Save" for adding and updating records that takes care of concurrent saves of the same record. (It does not allow to overwrite updates done meanwhile)

c) Create a console application that generates and inserts dummy data in the table from **point 1. a)** with the following requirements:

* There is a list of services in the ANNEX
* For each service will be generated offers for durations from 1 to 21 days with CheckInDate each day from today for the next year and for all the person combination from 1 to 6 adults and from 0 to 6 children (i.e. "1A0C" = 1 adult, 0 children, "1A1C" = 1 adult, 1 children , "2A2C" = 2 adult, 2 children etc … 6A6C = 6 adults, 6 children.)
* The price will be generated like this: for each service for the offer for 1 day and 1 person will be generated a random price, and for the rest of the offers for this service the price should be calculated based on that price for a day and a person and considering the persons and the duration of the offer. The price per child is 50% from the adult price.
* **ShowStrikePrice** will randomly get true or false. If it’s false then **StrikePrice** will be 0 else **StrikePrice** will be calculated with a similar logic as **Price** but with extra condition: the **StrikePrice** should be smaller than the Price. (so a random **StrikePrice** for the offer for 1 day and 1 person and for the rest the **StrikePrice** should be calculated based on strikeprice for a day and a person and considering the persons and the duration of the offer. The price per child is 50% from the adult price)
* [optionnal] The console application should use separate threads (maximum 5 threads) First thread should write logs in a single file from all threads with the number of offers created and inserted in the database
* [optionnal] Make this application to run differential (if it’s rerun should not insert duplicate offers but update the offers with new random prices)

1. **Create a** [**WCF**](https://docs.microsoft.com/en-us/dotnet/framework/wcf/whats-wcf) **or** [**WWF**](https://docs.microsoft.com/en-us/dotnet/framework/windows-workflow-foundation/) **service or any other type of service with follow requirements :**

a) Create an Offer class for the table from point 1.a)

b) Create a **SearchAvailability** method that receives a parameter of type RequestObject (DateForm, Duration, number of persons and a property of type Credentials which contains UserName and Password) and return offers that match the conditions from the RequestObject. The search should be done using the database from point 1)

c) SearchAvailability should simulate the validation of credentials.

1. **Create a client which consumes the WebService from point 2.**

a) This will send an object as a request parameter filled from a short form: (ex. DateForm, Duration, number of persons).

b) Username and password will be taken from a config file.

c) The results will be listed.

d) It can be done in WebForm, MVC, WinForms, WFP.

**THE ANNEX with Services:**

HRO-ROLEIIS-MCL

,HRO-ROLEIIS-FBA

,HRO-ROLEIIS-FBB

,HRO-ROLEIIS-FBA-H

,HRO-ROLEIIS-FBC

,HRO-ROLEIIS-FFI-H

,HRO-ROVIEIS-MVE

,HRO-ROVIEIS-MVE-H

,HRO-ROVIEIS-FFH-H

,HRO-RONURIS-MVE

,HRO-RONURIS-MNE

,HRO-ROHENIS-MPR-2SZ

,HRO-ROHENIS-MPR-2SZ-H

,HRO-ROHENIS-MPR

,HRO-ROHENIS-MPR-H

,HRO-ROHENIS-LON

,HRO-ROHENIS-LJA

,HRO-ROHAMIS-MNE

,HRO-ROHAMIS-MNE-H

,HRO-ROLACIS-MVE

,HRO-ROHAMIS-MVE

,HRO-ROHAMIS-MVE-H

,HRO-ROLACIS-MJU

,HRO-ROLACIS-MVE-H

,HRO-ROLACIS-MPA

,HRO-ROLACIS-FFA

,HRO-ROLACIS-FFA-H

,HRO-RORUGIS-MVE

,HRO-RORUGIS-FFH

,HRO-ROLACIS-FFB

,HRO-ROBURIS-MEX

,HRO-ROBURIS-MEX-M

,HRO-RODORIS-MCL

,HRO-RODURIS-MVE-H

,HRO-RODURIS-MPR

,HRO-ROECKIS-MEX

,HRO-ROELBIS-LON

,HRO-ROELBIS-LJA

,HRO-ROESCIS-MPR-2SZ

,HRO-ROESSIS-MMA

,HRO-ROESSIS-MMA-H

,HRO-ROFRIIS-MCL

,HRO-ROFRIIS-MCL-H

,HRO-ROHUNIS-FFH

,HRO-ROHUNIS-FFH-H

,HRO-ROKISIS-MCL

,HRO-ROOYTIS-MEX

,HRO-ROTOSIS-MEX

,HRO-ROTOSIS-MEX-M

,HRO-ROWALIS-MVE

,HRO-ROWALIS-MVE-H

,HRO-ROWALIS-MCL

,HRO-ROWINIS-LAM

,HRO-ROWINIS-FFH

,HRO-RONURIS-MVE-H

,HRO-ROESCIS-MPR-2SZ-H

,HRO-RORUGIS-MVE-H

,HRO-RORUGIS-FFH-H

,HRO-ROWINIS-FFH-H