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**SQL Developers Test**

Thank you for your interest in the role with Brickendon Consulting and for taking the time to sit this test.

I hope the test will not only test your abilities but also give you a little glimpse into some of the tasks we carry out. Please do bear in mind that this is a simplified and somewhat abstract series of problems that you wouldn’t normally approach with the same restrictions imposed below.

You are welcome to use any resources that would be available to you during the course of a normal day: e.g. Google is permitted, as are textbooks, however use of existing code you have developed anywhere else would not be allowed. You should clearly identify and attribute sources within your code.

I would like you to time your work on each section of this and report back to me the time taken and any resources used. I will not penalise you based upon the time it has taken you to complete the task and would rather see an honest admittance that it took you longer than expected, with a valid reason explaining why, as opposed to hearing an unrealistic time.

I personally completed this test on my home PC in 20 minutes and referred to Google once for help with SQL syntax.

One final word of warning - at this client site, you will regularly gather your own requirements directly from a trader or receive vague details by email. Sometimes it is not possible to get a very detailed specification simply because the user doesn’t know or isn’t available. When this happens you have to use your initiative and work things out for yourself. This test has several ambiguities and vague definitions. It is up to you to make reasonable and valid assumptions.

And one final tip: KISS – Keep It Short and Simple. Don’t overcomplicate it, make it simple, efficient, easy to maintain and easy for the user to use.

**Introduction to the Problem**

We have a database storing data including weather forecasts. Below are all the details you need of the table containing weather forecasts.

|  |  |  |  |
| --- | --- | --- | --- |
| Table Name | WEATHER\_FORECASTS |  |  |
| **Column Name** | **Data Type** | **Nullable** | **Primary Key** |
| ID | NUMBER | No | Yes |
| SOURCE | VARCHAR2(20 BYTE) | No |  |
| LOCATION\_ID | VARCHAR2(30 BYTE) | No |  |
| AS\_OF\_DATE | DATE | No |  |
| FORECAST\_DATE | DATE | No |  |
| TEMP\_MIN\_C | NUMBER | Yes |  |
| TEMP\_MAX\_C | NUMBER | Yes |  |
| WIND\_SPEED\_KMH | NUMBER | Yes |  |
| PRECIPITATION\_MM | NUMBER | Yes |  |

You can assume that ID is automatically generated using a sequence and trigger.

**Part 1**

Each weather forecast should be unique for a given source, location, as of date and forecast date.

Write a script to modify the table to add a suitable constraint that prevents multiple forecasts being entered that break this uniqueness.

**Part 2**

Below is the header for a procedure to upsert a single weather forecast into the table. This is in Oracle SQL but should be very similar to TSQL.

*/\* Upserts Weather Forecast row into the table WEATHER\_FORECASTS \*/*

*PROCEDURE UPSERT\_WEATHER\_FORECAST (*

*param\_SOURCE\_in WEATHER\_FORECASTS.SOURCE%TYPE,*

*param\_LOCATION\_ID\_in WEATHER\_FORECASTS.LOCATION\_ID%TYPE,*

*param\_FORECAST\_DATE\_in WEATHER\_FORECASTS.FORECAST\_DATE%TYPE,*

*param\_TEMP\_MAX\_C\_in WEATHER\_FORECASTS.TEMP\_MAX\_C%TYPE,*

*param\_TEMP\_MIN\_C\_in WEATHER\_FORECASTS.TEMP\_MIN\_C%TYPE,*

*param\_WIND\_SPEED\_KMH\_in WEATHER\_FORECASTS.WIND\_SPEED\_KMH%TYPE,*

*param\_PRECIPITATION\_MM\_in*

*WEATHER\_FORECASTS.PRECIPITATION\_MM%TYPE,*

*param\_DATA\_SOURCE\_FILE\_ID\_in*

*WEATHER\_FORECASTS.DATA\_SOURCE\_FILE\_ID%TYPE,*

*param\_AS\_OF\_DATE\_in WEATHER\_FORECASTS.AS\_OF\_DATE%TYPE)*

Write the body for this procedure.

**How to submit your work**

Upon completion please create a document containing all the following *Submission Details* information and enclose this in a zip file along with the SQL files that you have created.

**Submission Details**

This document will help me understand how you approached the problems. Please be honest with your responses. Honest answers will not count against you, however the opposite will be obvious upon closer inspection and will discredit your efforts.

In the *Submission Details* document include the following information:

Your name

For each Part of the test above include:

Time taken

Resources used

Any problems encountered

Any other information

**Many thanks for taking the time to complete the test.**