DATABASE MANAGEMENT SYSTEMS
ISM 4212
PROJECT
MODULE 3

III. Module 3 (10 pt)

All module 1 & 2 revisions must be made before you can do Module 3. If no revisions are necessary put a sheet in the section stating no revisions are necessary.

In this module you will populate your tables with data, then you will query them.

General Printing Instructions

- Whenever you print landscape punch holes at top of page. If using portrait punch holes on the left.
- Readability counts. Use white space between inserts and queries.
- There should be no errors in the spool file.

Part 1

In Part 1 populate the tables and query them to get all data in them. Check the schedule for the due dates.

Populate the tables

Part 1A: Create data in Excel ***(This is due earlier than anything else. Check the schedule for the due date.)***

This is the data which will be inserted into your tables**.**

Follow the instructions in the file named "**How to Create Data For Insert Statements"** found on Canvas to put data into the copies of your approved Excel instance chart sheets**.**

Determine the order in which the tables should be populated before you start adding data.

- Make sure you have the proper data so that you can demonstrate all the queries execute correctly. For example, if you were sorting by last name and then first name, you must have duplicates in the last name column in order to demonstrate that sorting is done properly. Another example, if you are doing an outer join you must have data to show that there is no match.
- Think logically about the data. For example, for invoices the invoice date should increase as the invoice number increases.

- If the data is created properly you will have the data necessary to do all the required queries.
- Start the primary key value where the sequence starts when you are using one.
- Enter enough appropriate data so that you can run the queries specified in the next section. To determine what data you will need examine the queries section. I have set up the number of rows to guarantee that you must duplicate the value in the FK at least once. If you are in doubt how many rows you need ask the instructor. For example,

Required number of rows per table

Sold to	4
Ship to	5
Customers	9
Invoices	12
Items sold	25
Items	6 *

*For items add two (2) more rows which you do not use other than their original entry

Why do I require that you have more rows in the child table than you have in the parent table? Put your answer on the top instance chart sheet.

Make sure your customers have 9 different combinations of sold to and bill to numbers.

After you have done the inserts verify that the data listed on the Excel sheets matches the data you inserted. If not, correct it.

Note:

- On your Customers data sheet put a note that the pairings of bill to and ship to (or your equivalent names) do not always make sense. This is due to the fact we have so little data to work with but we still need to demonstrate that our 1 to many relationships work.
- Put the same note on your business rules for module 3.

Print and submit

- A copy of the invoice
- The **approved** instance charts with the data as specified above. Make sure the instance charts are in the order in which you would create the tables.
- The **approved** sequences.
- The answer to the question above. Put the answer on the top instance chart.

Part 1A scoring

- If you receive an OK on Part 1A it means that I don't see anything wrong. It doesn't mean it is perfect. I am only looking for the obvious things. Other things may turn up when you run the inserts. If you have to change the data to get the inserts to run you must change the data in the Part 1A sheets.
- A check on Part 1A means that your first pass is satisfactory. An X means it is not satisfactory but at least some attempt was made.
- If you turned in Part 1A on time and you corrected all mistakes and your data agrees with the actual data you inserted you can get full credit here even if your first pass wasn't perfect given that the first pass was satisfactory.
- If you turned in something for Part 1A on time but it was not satisfactory then you automatically lose 0.5 pt and whatever else you might lose for whatever else may be wrong for the data.
- By not turning in Part 1A on time you lose automatically lose 1 point plus a penalty for whatever else may be wrong with your data.

Make sure you make any necessary changes to Mod 2 and get them approved before you turn in part 1A.

Put all corrections, if needed, for Part 1A in the revised Part 1A section.

Part 1B: Create & Run The Insert Statements in Oracle

Write the SQL to insert data into the tables. Determine the order in which the tables should be populated before you start adding data.

- Use your sequences to populate the PKs they were created for.
- Explicitly list the column names in the insert commands.
- State NULL explicitly if you're leaving a column empty. However, do not always leave them empty.
- Indent code appropriately for readability
- Do NOT use single quotes around numbers. They do not need them.
- Do NOT use SELECT *

Put the insert commands at the end of the file you created in Module 2 (the one that holds the create commands).

Run the insert statements and spool the commands with their output to a file. Print the spooled file to turn in. Inserts may be printed portrait or landscape depending on how you set up your inserts. You may print on both sides of the paper.

All Queries

The code for the queries should go into a third .SQL file.

Formatting of output for all queries for Part 1B & Part 2.
All output should be formatted in a neat and easy to read presentation. This includes but is not limited to:

- All formatting must be shown for **ALL** queries. You may group your formatting commands together and put them in front of the section for the all data queries.
- Format any numbers so that they are not shown in exponential format and so that they line up properly along the decimal.
- Format any column headers (use column aliases) so that they do not show things like SUM(price) and so they are not truncated.
- Format the columns to make them fit better on the page.
- Format dates. Do not let them default to Oracle's default format.
- Avoid line wrap when possible.
- Use SET PAGESIZE 66 to avoid the column headers appearing multiple times in the output. Use SET LINESIZE to lessen linewrap.
- Print landscape. This necessitates changing the buffer size, etc. before running.
- Print on only one side of the paper.
- Properly indent code.
- Put queries in the same order that the requirements are listed and clearly label which requirement is being met.

Formatting examples are available on Canvas and in your text. You can also search the Web for examples.

Use comment statements to comment ***each*** query.

- Comments should precede the query.
- State which query requirement the query satisfies, like sort by one column.
- State in English what your query is doing. This should be phrased as a user would phrase the question. For example, Get me all the book titles that Jack Bauer purchased or List all the book titles in ascending order.
- You may use any of Oracle's commenting styles – see file posted on Canvas for these

Required Part 1B Queries

- Write a SQL select statement for each of your tables to show the complete contents of the table, i.e., all rows and all columns. If you have 5 tables you will have 5 select statements.
- Do NOT use SELECT *

Part 2

Submit the corrections, if needed, for module 1, module 2 and module 3 part 1.

Instructions in Part 1B for All Queries apply here too.

All queries should demonstrate that you understand how the commands work and when to use them. For example, a query which uses more than one table when all the required fields come from one table will not count as a join. Another example is if you are using an outer join then some rows should not have matches. If you sort on two fields but the primary sort field doesn't have different values for the secondary sort field then it doesn't demo that the sort works. See last bullet under populating the tables.

- Do not use table aliases.
- Do NOT use SELECT *

All the following queries should be **significantly different** from each other. All queries MUST make sense in the context of the business the database is representing; there must be a rationale for doing them. Queries with no rows returned will not count.

- Data which is sorted on a non-key (not on PK or FK) field (minimum of 4 queries)
  - 2 should sort on one field
  - 2 should sort on multiple fields

- Data which returns multiple rows, but only a subset of rows (minimum of 4 queries)
  - 1 should use AND/OR
  - 1 should use =
  - 1 should use LIKE and wildcard characters – using "T*"or something else as simple as that will NOT count.
  - 1 should be something other than the above listed choices

- Data from multiple tables (minimum of 4 queries) – Do NOT use table aliases. Joins must need data from multiple tables in order to count. If all the data comes from or could come from one table there is no point in doing a join and it will not count.
  - 1 should use inner join
  - 1 should use outer join
  - 1 should use inner join with at least 4 tables
  - 1 other

- Data which is grouped (minimum of 4 queries)

- 1 should calculate the grand total for each invoice
- 1 should count the number of invoices or items you have
- 1 should use the GROUP BY clause
- 1 should be something other than the above listed choices

Submission Requirements

NOTE: ALL commands along with their output must be spooled, run and printed for submission. Only inserts and queries which have been spooled and run will be graded.

See Module 3 grade sheet for what should be submitted and the submission order.

Include most recently reviewed documents in the appropriate sections with the final documents. The reviewed documents are the ones I mark up and date. This will speed up grading. Make sure you make any changes specified on them before submission.

Command files
At this point you should have 3 files which hold the SQL commands (**not** the spooled output). These files will be submitted via links the instructor will set up on Canvas. There will be a link for each file. Do NOT zip anything. Only 1 of the teammates should submit the files. **Use a comment to put all the team members' names at the top of each file.**

Name the files:
LastNameLastNameFile1
LastNameLastNameFile2
LastNameLastNameFile3

All files should open properly in Notepad.

- File 1: contains the create tables, the describes on the tables, the selects on user constraints, the create sequences, & select on user sequences and all the insert statements.

- File 2: The second file will contain the drop table statements for all your tables (including constraints) and sequences.

- File 3: The third file will contain all the select statements.

I may randomly choose a team's project to test in Oracle. In that case I will use your commands to create and populate the tables, then run your queries. When I

am done I will use your commands to drop the objects created. All commands should run properly.

Last Updated: August 5, 2018