

GENERAL DIRECTIONS

- This exam is in two parts.
 - Part I: answer questions.
 - Part II: run queries.
- Everything that you do below needs to be typed / copied-and-pasted into a Word (or another word-processed) document. Document format:
 - Cover sheet with your name, exam #, and date.
 - Double-spaced.
 - Page number at bottom-center of each page.
- Begin each answer on a new page. Label each.
- Make sure EVERYTHING you provide is readable.
- After completing the exam, save the document, export it to PDF format, and upload it to Blackboard.
- Please follow all formatting directions provided previously. Anyone turning-in a document that does not meet the requirements will have points counted-off! So, please be attentive and careful!

PART I

1. Consider a small college with two students, each of whom takes three classes (these are the ONLY classes offered by the college). The list below shows the enrollment data for the two students. Convert the list to related database tables. Create primary key column(s) in each table.

CLASS LIST

Stu_Num	Stu_Name	Class_Code	Class_Title	Class_Time	Class_Room
321452	Bowser	10014	ACCT-211	TTh 2:30-3:45 p.m.	BUS252
324257	Smithson	10014	ACCT-211	TTh 2:30-3:45 p.m.	BUS252
321452	Bowser	10018	CIS-220	MWF 9:00-9:50 a.m.	KLR211
324257	Smithson	10018	CIS-220	MWF 9:00-9:50 a.m.	KLR211
321452	Bowser	10021	QM-261	MWF 8:00-8:50 a.m.	KLR200
324257	Smithson	10021	QM-261	MWF 8:00-8:50 a.m.	KLR200

2. For #1 above, describe, in your own words, the process you followed in creating the tables.
3. Define and explain the terms primary key and foreign key. What is / are the primary and foreign keys in the tables you created above?
4. Does any table have a composite primary key? If so, what table is it and what is its key?

5. The list below contains names of ARTISTS and SONGS they have sung. Convert it to related database tables. Create primary key column(s) in each table.

MUSIC LIST

Artist Name	Song Title
David Guetta	Louder Than Words
Fetty Wap	Bang My Head
Flo Rida	Club Can't Handle Me
Flo Rida	How I Feel
Flo Rida	My House
Flo Rida	Only 1 Flo Part 1 EP
Rihanna	American Oxygen
Rihanna	Close To You
Rihanna	Right Now
Shakira	Can't Remember To Forget You
Sia	Chandelier
Sia	Clap Your Hands
Sia	She Wolf (Falling To Pieces)
Sia	Titanium
Sia	Wild Ones

6. For #5 above, describe, in your own words, the process you followed in creating the tables.
7. What is / are the primary and foreign keys in the tables you created in #5 above?
8. Does any table have a composite primary key? If so, what table is it and what is its key?
9. Using the tables you created, provide example(s) and explain the referential integrity constraint(s) that has / have been introduced.

10. What anomalies exist in the list below? Define and explain each.

Customer Number	Customer Name	Order Number	Order Date	Part Number	Part Description	Number Ordered	Quoted Price	Warehouse	Rep Number
148	Al's Appliance and Sport	21608	10/20/2007	AT94	Iron	11	\$21.95	3	20
148	Al's Appliance and Sport	21619	10/23/2007	DR93	Gas Range	1	\$495.00	2	20
282	Brookings Direct	21614	10/21/2007	KT03	Dishwasher	2	\$595.00	3	35
356	Ferguson's	21610	10/20/2007	DR93	Gas Range	1	\$495.00	2	65
356	Ferguson's	21610	10/20/2007	DW11	Washer	1	\$399.99	3	65
408	The Everything Shop	21613	10/21/2007	KL62	Dryer	4	\$329.95	1	35
608	Johnson's Department Store	21617	10/23/2007	BV06	Home Gym	2	\$794.95	2	65
608	Johnson's Department Store	21617	10/23/2007	CD52	Microwave Oven	4	\$150.00	1	65
608	Johnson's Department Store	21623	10/23/2007	KV29	Treadmill	2	\$1,290.00	2	65

11. List the 8 characteristics of relations.

12. Define the different types of keys that are used in databases.

PART II: SQL QUERIES

Instructions

- Download the attached SQL script, **Exam1_LibraryData.sql**.
- Import script into Oracle APEX.
- There are several tables. These tables and their attributes are in the attached PDF document. Please reference them for creating queries.
- Also in the PDF document is the DBMS ERD for the database.

SQL Queries You Need to Run

1. List the name of each publisher located in Boston.
2. List the book code, book title, and price of each book with a price between \$20 & \$30.
3. Customers who are part of a special program get a 10% discount off regular book prices. List the book code, book title, and discounted price of each book. Use DISCOUNTED_PRICE as the name for the computed column, which should be price * 0.90.
4. How many books have the type SFI.
5. For each type of book, list the type and the average price.
6. For each book, list the book code, book title, publisher code, and publisher name.
7. For each book published by Plume, list the book code, book title, and price.
8. List the book title, book code, and price of each book published by Plume that has a book price of at least \$14.
9. List the book title for each book that has the type PSY and that is published by Jove Publications.
10. Find the book code and book title for each book whose price is more than \$10 and that was published in Boston.