SQL-2 Exercises

1. Querying a Table

a. Write a query that displays all rows and all columns from the **`orion.Employee_Payroll`** table.

Partial PROC SQL Output

Employee_ID	Employee_ Gender	Salary	Birth_ Date	Employee_ Hire_Date	Employee_ Term_Date	Marital_ Status	Dependents
120101	M	163040	6074	15887	.	S	0
120102	M	108255	3510	10744	.	O	2
120103	M	87975	-3996	5114	.	M	1
120104	F	46230	-2061	7671	.	M	1
120105	F	27110	5468	14365	.	S	0

b. Recall the previous query and alter it so that only the columns for **`Employee_ID`**, **`Employee_Gender`**, **`Marital_Status`**, and **`Salary`** are displayed.

Partial PROC SQL Output

The SAS System

Employee_ID	Employee_ Gender	Marital_ Status	Salary
120101	M	S	163040
120102	M	O	108255
120103	M	M	87975
120104	F	M	46230
120105	F	S	27110

2. Calculating a Column

Write a query that generates the report below. The report should do the following:

- display **Employee_ID**, **Employee_Gender**, **Marital_Status**, **Salary**, and a new column (**Tax**) that is one-third of the employee's salary
- use the **orion.Employee_Payroll** table

Partial PROC SQL Output

The SAS System

Employee_ID	Employee_ Gender	Marital_ Status	Salary	Tax
120101	M	S	163040	54346.67
120102	M	O	108255	36085
120103	M	M	87975	29325
120104	F	M	46230	15410
120105	F	S	27110	9036.667
120106	M	M	26960	8986.667
120107	F	M	30475	10158.33
120108	F	S	27660	9220
120109	F	M	26495	8831.667
120110	M	M	28615	9538.333
120111	M	M	26895	8965
120112	F	M	26550	8850
120113	F	S	26870	8956.667
120114	F	M	31285	10428.33
120115	M	M	26500	8833.333
120116	M	S	29250	9750
120117	M	O	31670	10556.67
120118	M	M	28090	9363.333
120119	M	M	30255	10085
120120	F	M	27645	9215

3. Conditional Processing

Create a report that displays **`Employee_ID`**, **`Level`**, **`Salary`**, and **`Salary_Range`** using the **`orion.Staff`** table. **`Level`** and **`Salary_Range`** are two new columns in the report. The report should also only contain salary information for the Orion Star executives. Conditionally assign values to the two new columns as follows:

Job_Title (Last Word)	Level	Salary Ranges		
		Low	Medium	High
Manager	Manager	< 52,000	52,000-72,000	> 72,000
Director	Director	<108,000	108,000-135,000	> 135,000
Officer, President	Executive	<240,000	240,000-300,000	> 300,000
Other	N/A	DO NOT INCLUDE IN THE REPORT.		

Partial PROC SQL Output

Salary Ranges For Orion Star Management

Employee ID	Level	Employee Annual Salary	Salary_Range
120101	Director	$163,040	High
120659	Director	$161,290	High
121142	Director	$156,065	High
120800	Director	$80,210	Low
120270	Director	$48,435	Low
120259	Executive	$433,800	High
120262	Executive	$268,455	Medium
120261	Executive	$243,190	Medium
120260	Executive	$207,885	Low
121141	Executive	$194,885	Low
120102	Manager	$108,255	High
121143	Manager	$95,090	High
120103	Manager	$87,975	High

4. Eliminating Duplicates

Write a query that generates a report that displays the cities where the Orion Star employees reside. The report should do the following:

- include the title **`Cities Where Employees Live`**
- display one unique row per **`City`**
- use the **`orion.Employee_Addresses`** table

PROC SQL Output

Cities Where Employees Live

City
Melbourne
Miami-Dade
Philadelphia
San Diego
Sydney

5. Subsetting Data

Write a query that generates a report that displays Orion Star employees whose charitable contributions exceed $90.00. The report should have the following characteristics:

- include the title **`Donations Exceeding $90.00 in 2007`**
- display **`Employee_ID`**, **`Recipients`**, and the new column **`Total`** that represents the total charitable contribution for each employee over the four quarters
- use the **`orion.Employee_donations`** table
- include only employees whose charitable contribution **`Total`** for all four quarters exceeds $90.00

Hint: The total charitable contribution is calculated by adding the amount of **`Qtr1`**, **`Qtr2`**, **`Qtr3`**, and **`Qtr4`**. Use the SUM function to ensure that missing values are ignored.

PROC SQL Output

Donations Exceeding $90.00 in 2007

Employee ID	Recipients	Total
120660	Disaster Assist, Inc.	100
120677	EarthSalvors 60%, Vox Victimas 40%	100
120753	Conserve Nature, Inc. 50%, AquaMissions International 50%	100
120766	Mitleid International 80%, Save the Baby Animals 20%	100
120791	Child Survivors	120
120814	Child Survivors 80%, Disaster Assist, Inc. 20%	100
121142	AquaMissions International 10%, Child Survivors 90%	140
121143	Mitleid International 60%, Save the Baby Animals 40%	140
121145	Save the Baby Animals	140

6. Subsetting Data Using the ESCAPE Clause

Create a report that displays the **Employee_ID** and **Recipients** for all employees who contributed 90% of their charitable contributions to a single company that was incorporated (Inc.). Use the **orion.Employee_donations** table. Add a title to the report as shown in the output below.

Hint: Use the ESCAPE clause in the WHERE clause to solve this problem.

Alternative methods can be used to solve this problem, but for this exercise, use the LIKE operator with an ESCAPE clause.

PROC SQL Output

```
                        Employees who contributed 90%
                       To Charitable Companies That Are
                           Also Incorporated (Inc.)

 Employee ID  Recipients
 ____________________________________________________________________________

      120783  Disaster Assist, Inc. 10%, Cancer Cures, Inc. 90%
      121012  Child Survivors 10%, Disaster Assist, Inc. 90%
      121058  Disaster Assist, Inc. 90%, Cancer Cures, Inc. 10%
      121136  Disaster Assist, Inc. 10%, Cancer Cures, Inc. 90%
```