

Exercise 9

Assign the ORION library

Create a new prompt named path to get user input for the path of the course dataset. The default value should be P:/Orion Dataset.

Create a new process flow named Autoexec.

Add a new program and type: `LIBNAME ORION "&path";`

Right-click on the program, select Properties > Prompts > Add > Select path.

1. Using the Summary Statistics Task

Use the Summary Statistics task to create a report that summarizes employee salaries by department and country. In addition, limit the tables that appear in the generated results.

- a. Create a new process flow named **Problems 1 & 2** and add the **employee_master** table.
- b. Use the Summary Statistics task to summarize **Salary** by **Department** first and then by **Country**.

- Include the mean, minimum, maximum, and median salary for each group and round values to two decimal places.
- Use **Summary Statistics for Salary by Department and Country** as the analysis title and delete the footnote.
- Rename the task **Salary by Dept, Country Summary**.

- c. Run the task and answer the following question:

What is the median salary for the Administration Department in the United States (US)?

- d. Modify the task to generate multiple reports for all combinations of the two classification variables. Use the Results panel and select **All ways** for the **Combinations of classification variables** option.

- e. Run the task and answer the following question:

Note: Four tables are included in the report, one for each combination of the classification variables.

What is the median salary for all departments in all countries?

- f. Modify the task again to include only the second and third tables from the previous results.

- g. Run the task and answer the following questions:

What is the mean salary of all departments in Australia (AU)?

What is the median salary for the Administration Department in all countries?

2. Using the Summary Tables Task

Continue in the **Problems 1 & 2** process flow. Use the Summary Tables task to create a report that shows warehouse employee average salaries by country. Enhance the report by adding customized titles that highlight overall totals.

- Select the **employee_master** table in the process flow, and use the Tasks pane to launch the Summary Tables task.
- Filter the data so that only employees with *Warehouse* in their job title are included.
- Establish the task roles by adding the **Salary** variable as the analysis variable and **Job_Title** and **Country** as the classification variables.
- Create the summary table layout by dragging and dropping items to the preview area, as indicated below.

Preview:

	Job_Title		Total
	Salary	Salary	Salary
	Mean	Mean	Mean
Country			
Total			

- Enter **Warehouse Employee Statistics by Country** as the title and delete the footnote.
- Change the task label to **Warehouse Employee Stats**.
- Run the task and review the results.
- Modify the report to meet the appearance requirements.
 - Remove the headings for **Job_Title** and **Salary**.
Hint: Removing the existing label text removes the row or column heading.
 - Change the **Mean** statistic heading to **Average Salaries**. Apply the **DOLLARw.d** format to the data values with **12** for the overall width and **0** (zero) for the decimal places.
 - For the total row at the bottom of the report, change the title to **All Countries** and set the text background color to light turquoise. Also, change the background color of the data values to light turquoise.
 - For the total column on the right side of the report, make the following updates:
 - Change the title to **All Job Titles** and set the text background color to light turquoise.
 - Remove the heading for **Salary**.
 - Change the **Mean** statistic heading to **Average Salaries** and set the text background color to light turquoise.
 - Apply the **DOLLARw.d** format to the data values with **12** for the overall width and **0** (zero) for the decimal places. Use a background color of light turquoise.
- Run the task and answer the following question:

In Australia (AU), what is the average salary across all warehouse job titles?

3. Using a Date Range Prompt in a Query

Create a query that prompts the user to subset the **employee_master** table for a specified range of hire dates.

- In the **Lesson6** project, create a query based on the **employee_master** table. Name the query **Employee Hire Date Query** and name the output table **emp_hire_date**. Add all columns to the query.
- Create a prompt that enables a selection for a range of dates. Name the prompt **DateRange** and use **Select a beginning and end date for the employee hire date range** as the displayed text. Change the prompt type to **Date range** and the date type to **Day**. Set the minimum value allowed to **January 01, 1975**, and the maximum value allowed to **December 31, 2015**. Use those values as the default custom range.
- Create a filter on the **Employee_Hire_Date** column. Set the operator to **In a range**. Use the prompt that you created to select the date range at execution.
- Sort the results by ascending **Employee_Hire_Date** and then ascending **Employee_ID**.
- Run the query and set the range of dates from **January 1, 2008**, to **December 31, 2008**. Answer the following question:

How many employees were hired between January 1, 2008, and December 31, 2008?

4. Using a Multiple Value Prompt in a Query

Use the Prompt Manager to create a multiple-value selection prompt for the **Job_Title** column found in the **employee_master** table.

- Create a prompt that enables the selection of one or more job titles. Use the following specifications when creating the prompt:

Name	SelectJobs
Displayed text	Select job titles to include:
Options	Requires a non-blank value
Prompt type	Text
Method for populating prompt	User selects values from a static list
Number of values	Multiple values
List of values	Values of Job_Title from the employee_master table
Default values	< none >
Include Special Values	All possible values

- Create a query based on the **employee_master** table. Name the query **Multi-Jobs Query** and the output table **multi_jobs**.
 - Include all columns on the Select Data tab.
 - Build a filter that includes only jobs that are in the list of jobs selected in the prompt. If necessary, select the **Generate filter for a prompt value** check box.
 - Order the data by **Job_Title** and then **Employee_ID**.

- c. Run the query. Select the appropriate prompt values to answer the following questions:

How many Accountant I, II, and III employees are there?

How many Warehouse Assistant I, II, III, and IV employees are there?

- d. Save the project and upload it on Canvas.


You cannot do the following exercise with VDI. You can do it only if you have a local copy of SAS EG or if you are using SAS On Demand for Academics.

OPTIONAL: Creating a Report Using Multiple Results

Create a SAS report that combines the output from three different tasks into a single PDF document.

- e. Open Problem 5 process flow, and run the tasks.
- f. Create a combined report. Use the One-Way Frequencies, Summary Tables, and Bar Chart SAS report results. Arrange the items as indicated below.

One-Way Frequencies	Bar Chart
Summary Tables	

- g. Remove the titles from the Bar Chart and Summary Table results. Use **Employee Statistics** as the report header. Apply a 20 pt., bold, center-aligned style to the text. Add a line between the header and the report body.
- h. Change the page orientation to **Landscape**.
- i. Click **Page** to preview the report. Return to the normal view when you are finished viewing the report.
- Note:** If the graph and frequency report do not appear side by side, return to the normal view to reduce the size of the graph.
- j. Change the name of the report by clicking  (**Properties**) on the report toolbar. Change the label to **Employee Report** and click **OK**.
- k. Add a step in the project to export the combined report as a PDF document. Store the output file in the **output** folder located in the course file location. Do **not** overwrite existing results.

Hint: To view the PDF file, click the **Problem 5** tab in the work area. Double-click the **Employee Report.pdf** object in the process flow.