1. **Accessing and Investigating Data**

   a. From the browser window, sign in to SAS Viya for Learners, if necessary.

   b. Access SAS Visual Analytics.

      To access SAS Visual Analytics, click ☰ (**Show applications menu**) and select **Explore and Visualize Data**. The Welcome to SAS Visual Analytics window appears.

   c. Open the **VA1- Exercise2.1** report in the **SAS Content/Courses/YVA183/Basics/Exercises (HR)** folder.

      1) Click **Open**.

      2) In the Open window, navigate to the **SAS Content/Courses/YVA183/Basics/Exercises (HR)** folder.

      3) Double-click the **VA1- Exercise2.1** report to open it.

   d. View the Data pane and answer the questions.

      1) Click the **Data** icon in the left pane.

      2) Answer the following questions:

         How many unique values does **Company** have? **Job Title**?

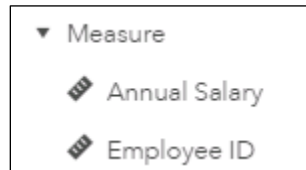   **Answer: Company has 12 distinct values. Job Title has 9 distinct values.**

         View the list of Category data items on the Data pane.

What is the type (or classification) of **Employee ID**?

Answer: Employee ID is identified as a measure data item.

View the list of Measure data items on the Data pane.

▼ Measure

◆ Annual Salary

◆ Employee ID

e. View the list table of all data items on Page 1 and answer the questions.

1) If necessary, click the **Page 1** tab at the top of the canvas.

The list table should resemble the following:

Company ▲	Department	Employee Birth Date	Employee Country	Employee Hire Date
Logistics	Stock & Shipping	.		.
Orion Australia	Sales	06Jun1953	au	01Jan1978
Orion Australia	Sales	22Apr1990	au	01Oct2010
Orion Australia	Sales	20Jul1948	au	01Jan1978
Orion Australia	Sales	18Aug1990	au	01Sep2010
Orion Australia	Sales	09Nov1990	au	01Nov2010
Orion Australia	Sales	21Feb1990	au	01Dec2010
Orion Australia	Sales	21Nov1978	au	01Jan1997
Orion Australia	Sales	07May1983	au	01Jan2002
Orion Australia	Sales	27Jul1958	au	01Jul1982

2) Scroll through the columns and answer the following questions:

What is the case of **Employee Country**?

Answer: Employee Country is lowercase.

Employee Country
au
au
au
au
au
au
au
au
au

How is **Employee Name** arranged?

Answer: Employee Name is arranged as First Last, Title.

Employee Name
Internet/Catalog Sales
Sian Shannan, Mr
Petrea Soltau, Ms
Caterina Hayawardhana, Ms
Fang Wilson, Ms
Koavea Pa), Mr
Leonid Karavdic, Mr
Judy Chantharasy, Ms
Samantha Waal, Ms
Christina Ngan, Ms
Fadi Nowd, Mr

Which data item can be used to determine whether an employee is active (currently employed) or retired (formerly employed)?

Answer: If Employee Termination Date is missing, the employee is active (currently employed). If Employee Termination Date is not missing, the employee is retired (formerly employed).

Employee Termination Date
.
30Jun2010
.
.
.
.
.
.
31Jan2010

f. View the crosstab of **Department** and **Job Title** on Page 2 and answer the question.

    1) Click the **Page 2** tab at the top of the canvas.

    2) View the crosstab and answer the question.

        Which department contains the missing job title?

        Answer: Stock & Shipping

Department ▲	Job Title ▲	Frequency
Purchasing	Purchasing Agent I	1
	Purchasing Agent III	2
Sales	Sales Rep. I	215
	Sales Rep. II	172
	Sales Rep. III	111
	Sales Rep. IV	49
	Temp. Sales Rep.	72
	Trainee	25
Stock & Shipping	(missing)	1

g. Create an auto chart of **Company** (on the right side of the crosstab) and answer the questions.

    1) In the left pane, click the **Data** icon.

    2) Drag **Company** from the Data pane to the right side of the canvas.

Department ▲	Job Title ▲	Frequency	
Purchasing	Purchasing Agent I	1	
	Purchasing Agent III	2	
Sales	Sales Rep. I	215	
	Sales Rep. II	172	
	Sales Rep. III	111	
	Sales Rep. IV	49	
	Temp. Sales Rep.	72	
	Trainee	25	
Stock & Shipping	(missing)	1	✛ Auto Chart

What is the largest company? The smallest?

**Answer: Orion USA is the largest company with the most employees (120).
Logistics is the smallest company with the fewest employees (1).**

- **Place your cursor over the bars to see the frequency.**

Frequency of Company
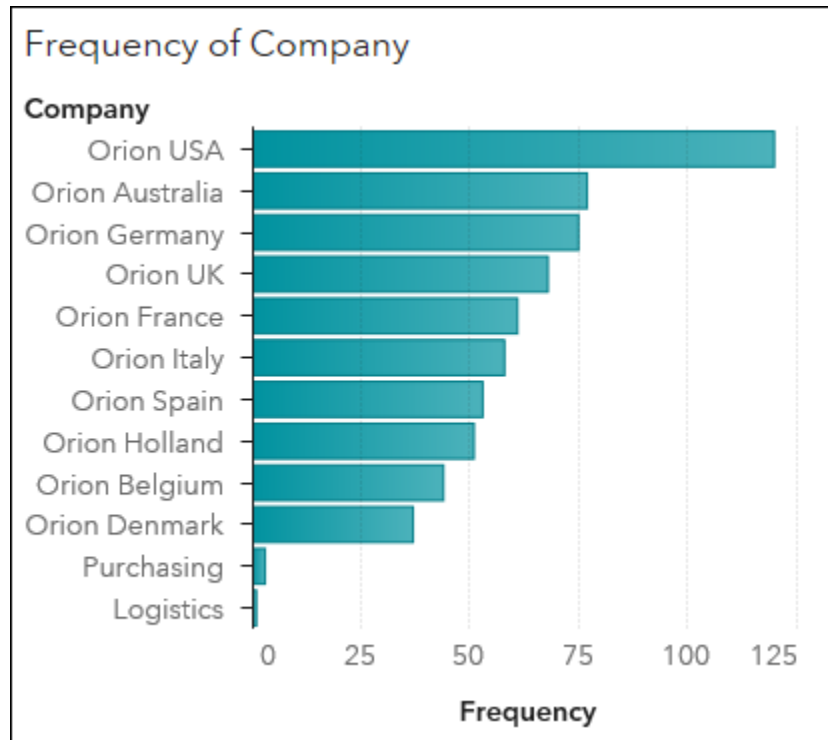
h. View the measure details (from the Data pane) and answer the questions.

1) In the left pane, click the **Data** icon.

2) Click ▦ (**Actions**) and select **View measure details**.

The Measure Details table shows the minimum, maximum, average, and sum for each measure.

Measure Details

Name	Minimum	Maximum	Average	Sum
Annual Salary	20,835.00	40,755.00	27,595.90	17,854,545.00
Employee ID	120,121.00	99,999,999.00	274,748.73	178,037,176.00
Levels of Management	0.00	5.00	4.17	2,705.00
Manager at 1. level	120,102.00	121,145.00	120,642.77	78,055,869.00

What is the minimum total profit generated by an employee? The maximum? The average? The total profit generated by all employees?

**Answer: The minimum total profit generated by an employee is 11.10.
The maximum total profit generated by an employee is 19,146,779.62.
The average total profit generated by employees is 109,148.07.
The total profit generated by all employees is 70,727,947.65.**

Name	Minimum	Maximum	Average	Sum
Total Profit	11.10	19,146,779.62	109,148.07	70,727,947.65

   3) Click **Close**.

   i. Save the report in **My Folder**.

   1) Save the report by clicking ⋮ (**Menu**) and selecting **Save As.**

   2) Navigate to **My Folder** and select **Save**.

2. Preparing Data

   a. From the browser window, sign in to SAS Viya for Learners, if necessary.

   b. Open and run the **VA1- Exercise2.2** plan in the **SAS Content/Courses/YVA183/Basics/Exercises (HR)** folder.

   1) Click ≡ (**Show applications menu**) and select **Prepare Data**.

   2) Click **Open Plan**.

   3) Navigate to the **SAS Content/Courses/YVA183/Basics/Exercises (HR)** folder.

   4) Double-click **VA1- Exercise2.2** to open the plan.

   5) Select **Run** to execute the plan, if necessary.

c. View properties for the result table and answer the question.

In the right pane, click 📇 (**Properties for the result table**).

Result Table - EMPLOYEES (...   ⋮

Columns	Rows
16	647

Size
232.5 KB

Label:
(not available)

Location:
cas-shared-default/Public

Date created:
Jun 15, 2018 01:42 PM
Date modified:
Jun 15, 2018 01:42 PM

Encoding:
utf-8

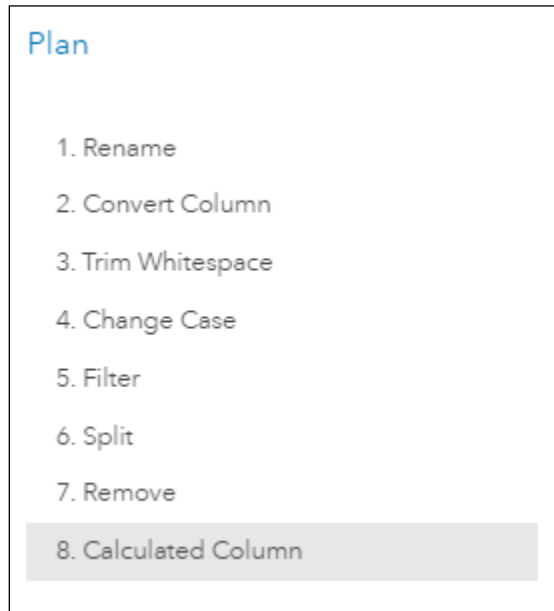How many rows are in the **EMPLOYEES** table after the actions of the plan are applied?

Answer: 647 rows, one for each employee at Orion Star

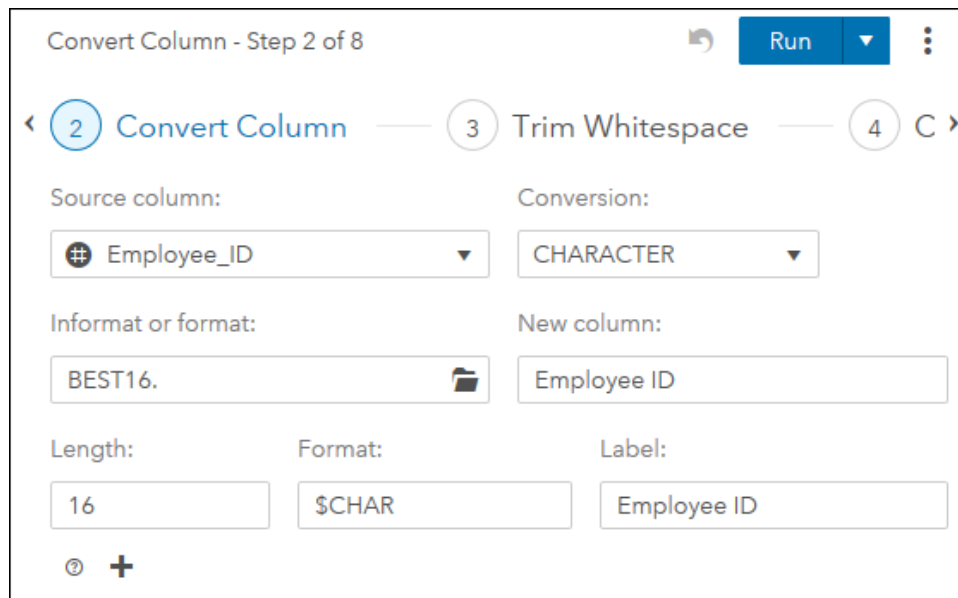**d.** View details about the steps performed in the plan and answer the questions.

In the right pane, click ⊞ (**Plan**).

How many convert column actions were performed? On which column (or columns)?

Answer: **One convert column action was performed on the Employee_ID column.**

Plan

1. Rename

2. Convert Column

3. Trim Whitespace

4. Change Case

5. Filter

6. Split

7. Remove

8. Calculated Column

- **Select the Convert Column step.**

Convert Column - Step 2 of 8   ↶   Run ▼   ⋮

‹ ② Convert Column —— ③ Trim Whitespace —— ④ C ›

Source column: Conversion:

⊞ Employee_ID   ▼   CHARACTER   ▼

Informat or format: New column:

BEST16.   📁   Employee ID

Length: Format: Label:

16                   $CHAR   Employee ID

⑦ ＋

Which column was changed to uppercase?

Answer: Employee_Country
- **Select the Change Case step.**

Which column was split? What was the delimiter?

Answer: Employee_Name was split using a comma delimiter.
- **Select the Split step.**

What filter was applied to the table?

Answer: **Department in ('Purchasing', 'Sales')**

- **Select the Filter step.**

Filter - Step 5 of 8   Run   ▼   Save   ⋮

‹ — ⑤ Filter — ⑥ Split — ⑦ Remove — ⑧ ‹ ›

Column: Operator:

⚠ Department   ▼   In   ▼

Value:

Sales   Browse   ⑦ +
Purchasing

What is the name of the new output table created from the plan?

Answer: **EMPLOYEES_CLEAN**

- **Click ⋮ (More) and select Save as.**

Name: Type:
VA1-Exercise2.2   Data plan   ▼

◉ Save plan and table   ○ Save plan   ○ Save table

Table name: Label: Library:
EMPLOYEES_CLEAN   Enter label   cas-shared-default/Public   🗄

If the name of the target table already exists: ○ Cancel save ◉ Replace table

- **Click Cancel.**