1. Zb Write a SAS program that reads a dataset named "sales\_data" containing sales information for different products and stores. The dataset has variables: Product\_ID, Store\_ID, and Sales\_Amount. Your task is to calculate the total sales amount for each product across all stores using a DO loop and output the results.

Your program should:

* Read the "sales\_data" dataset.
* Use a DO loop to iterate over each unique product in the dataset.
* Within the DO loop, calculate the total sales amount for the current product by summing up the sales amounts across all stores.
* Output the product ID and its corresponding total sales amount.
* End the program with appropriate messages.

1. Write a SAS program that generates a dataset containing the Fibonacci sequence up to a given limit. The Fibonacci sequence starts with 0 and 1, and each subsequent number is the sum of the two preceding numbers (0, 1, 1, 2, 3, 5, 8, 13, ...).

Your program should:

* Prompt the user to enter the limit up to which the Fibonacci sequence should be generated.
* Use a DO loop to generate the Fibonacci sequence up to the specified limit.
* Store the generated sequence in a dataset with a variable named "Fibonacci\_Number".
* Output the dataset containing the Fibonacci sequence.
* End the program with appropriate messages.

1. Suppose you have a dataset named "student\_scores" with the following variables: Student\_ID, Test\_Type, and Score. The Test\_Type variable indicates the type of test taken by each student, and the Score variable contains the score obtained by each student on that test.

Write a SAS program to calculate the average score for each Test\_Type using BY-group processing. Your program should:

* Read the "student\_scores" dataset.
* Sort the dataset by the Test\_Type variable.
* Use BY-group processing to calculate the average score for each Test\_Type.
* Output a dataset containing the Test\_Type and its corresponding average score.
* Include appropriate labels for the output dataset variables.
* End the program with suitable messages.

1. Suppose you have a dataset named "sales\_data" with the following variables: Product\_ID, Store\_ID, Month, and Sales\_Amount. The Month variable represents the month in which sales were recorded for each product in each store.

Write a SAS program to calculate the total sales amount for each product, broken down by month, using BY-group processing. Your program should:

* Read the "sales\_data" dataset.
* Sort the dataset by the Product\_ID and Month variables.
* Use BY-group processing to calculate the total sales amount for each product within each month.
* Output a dataset containing Product\_ID, Month, and its corresponding total sales amount.
* Include appropriate labels for the output dataset variables.
* End the program with suitable messages.

1. Write a SAS program to calculate the years of service for each employee and classify them into different service categories based on the following criteria:

Less than 5 years: "Junior"

Between 5 and 10 years: "Intermediate"

More than 10 years: "Senior"

Your program should:

* Read the "employee\_data" dataset.
* Calculate the years of service for each employee based on the difference between the current date and the Hire\_Date using appropriate date functions.
* Use conditional logic and functions to classify employees into the specified service categories.
* Output a dataset containing Employee\_ID, Years\_of\_Service, and Service\_Category.
* Include appropriate labels for the output dataset variables.
* End the program with suitable messages.

1. Suppose you have a dataset named "customer\_orders" with the following variables: Order\_ID, Order\_Date, and Order\_Amount. The Order\_Date variable represents the date when each order was placed.

Write a SAS program to calculate the average order amount for each month and year. Your program should:

* Read the "customer\_orders" dataset.
* Extract the month and year from the Order\_Date variable using appropriate date functions.
* Calculate the average order amount for each combination of month and year.
* Output a dataset containing Month, Year, and Average\_Order\_Amount.
* Include appropriate labels for the output dataset variables.
* Sort the output dataset by Year and Month.
* End the program with suitable messages.