**Problem 1 Displaying Formatted Values in a Detail Report （2 Points）**

Write a PROC PRINT step to display the report below using **sales** as input. Subset the observations and variables to produce the report. Include titles, labels, and formats. The results contain 13 observations.

US Sales Employees

Earning Under $26,000

First Date

Employee\_ID Name Last Name Title Salary Hired

121036 Teresa Mesley Sales Rep. I $25,965 OCT2007

121038 David Anstey Sales Rep. I $25,285 AUG2010

121044 Ray Abbott Sales Rep. I $25,660 AUG1979

...

121106 James Hilburger Sales Rep. I $25,880 FEB2000

121108 Libby Levi Sales Rep. I $25,930 NOV2010

**Problem 2 Creating User-Defined Formats (4 Points)**

* 1. Execute the following SAS Code

**data** Q1Birthdays;

set orion.employee\_payroll;

BirthMonth=month(Birth\_Date);

if BirthMonth le **3**;

**run**;

* 1. Add a PROC FORMAT step following the DATA step to create a character format named $GENDER that displays gender codes as follows:

|  |  |
| --- | --- |
| F | Female |
| M | Male |

* 1. In the same PROC FORMAT step, create a numeric format named MNAME that displays month numbers as follows:

|  |  |
| --- | --- |
| 1 | January |
| 2 | February |
| 3 | March |

* 1. Add a PROC PRINT step following the PROC FORMAT step to display the **Q1Birthdays** data set. Apply the two user-defined formats to the **Employee\_Gender** and **BirthMonth** variables, respectively. Include the title *Employees with Birthdays in Q1*, and clear the title at the end   
     of the program.
  2. Submit the program to produce the following report. The results contain 113 observations.

Employees with Birthdays in Q1

Employee\_ Birth

Obs Employee\_ID Gender Month

1 120103 Male January

2 120107 Female January

3 120108 Female February

...

112 121142 Male February

113 121148 Male January

**Problem 3 Defining Ranges in User-Defined Formats (4 Points)**

* 1. Write a PROC Print step to display the report using SAS Data set nonsales.
  2. Create a character format named $GENDER that displays gender codes as follows:

|  |  |
| --- | --- |
| F | Female |
| M | Male |
| Any other value | **Invalid code** |

* 1. Create a numeric format named SALRANGE that displays salary ranges as follows:

|  |  |
| --- | --- |
| At least 20,000 but less than 100,000 | Below $100,000 |
| At least 100,000 and up to 500,000 | $100,000 or more |
| missing | Missing salary |
| Any other value | Invalid salary |

* 1. In the PROC PRINT step, apply these two user-defined formats to the **Gender** and **Salary** variables, respectively. Submit the program to produce the following report:

Partial PROC PRINT Output

Salary and Gender Values

for Non-Sales Employees

Obs Employee\_ID Job\_Title Salary Gender

1 120101 Director $100,000 or more Male

2 120104 Administration Manager Below $100,000 Female

3 120105 Secretary I Below $100,000 Female

4 120106 Office Assistant II Missing salary Male

5 120107 Office Assistant III Below $100,000 Female

6 120108 Warehouse Assistant II Below $100,000 Female

7 120108 Warehouse Assistant I Below $100,000 Female

8 120110 Warehouse Assistant III Below $100,000 Male

9 120111 Security Guard II Below $100,000 Male

10 120112 Below $100,000 Female

11 120113 Security Guard II Below $100,000 Female

12 120114 Security Manager Below $100,000 Invalid code

1. 120115 Service Assistant I Invalid salary Male

**Problem 4 Creating a SAS Data Set (6 Points0**

* 1. Write a PROC Print step to display the report using SAS Data set customer\_dim.
  2. Add a DATA step before the PROC PRINT step to create a new data set named **work.youngadult**. Use the data set **orion.customer\_dim** as input. Include a WHERE statement to select only female customers.

Submit the program and confirm that **work.youngadult** was created with 30 observations and   
11 variables.

* 1. Modify the program to select female customers whose ages are between 18 and 36. Submit the program and confirm that **work.youngadult** was created with 15 observations and 11 variables.
  2. Modify the program to select 18- to 36-year-old female customers who have the word *Gold* in their **Customer\_Group** values. Submit the program and confirm that **work.youngadult** was created with five observations and 11 variables.
  3. Add an assignment statement to the DATA step to create a new variable, **Discount**, and assign it   
     a value of *.25*.
  4. Modify the PROC PRINT step to print the new data set as shown below. Use an ID statement to display **Customer\_ID** instead of the Obs column. Results should contain five observations.

Customer\_ Customer\_

Customer\_ID Customer\_Name Age Gender Customer\_Group Discount

5 Sandrina Stephano 28 F Orion Club Gold members 0.25

9 Cornelia Krahl 33 F Orion Club Gold members 0.25

45 Dianne Patchin 28 F Orion Club Gold members 0.25

49 Annmarie Leveille 23 F Orion Club Gold members 0.25

2550 Sanelisiwe Collier 19 F Orion Club Gold members 0.25

**Problem5 Creating a SAS Data Set (4 Points)**

* 1. Write a DATA step to create a new data set named **work.assistant**. Use the data set **staff**   
     as input.
  2. The **work.assistant** data set should contain only the observations where **Job\_Title** contains *Assistant* and **Salary** is less than *$26,000*.
  3. Create two new variables, **Increase** and **New\_Salary**.
* **Increase** is **Salary** multiplied by 0.10.
* **New\_Salary** is **Salary** added to **Increase**.
  1. Generate a detail listing report as shown below. Display **Employee\_ID** as the identifier in place of the Obs column. The results should contain five observations.

Employee\_ID Job\_Title Salary Increase New\_Salary

120685 Warehouse Assistant I $25,130.00 $2,513.00 $27,643.00

120688 Warehouse Assistant I $25,905.00 $2,590.50 $28,495.50

120690 Warehouse Assistant I $25,185.00 $2,518.50 $27,703.50

121010 Service Assistant I $25,195.00 $2,519.50 $27,714.50

121011 Service Assistant I $25,735.00 $2,573.50 $28,308.50