CHAPTER 3

EXERCISES 3.1

LEVEL 1

a)

```
/*****************************************************************/
 /* The INFILE statement uses a Microsoft Windows path.           */
 /*                                                               */
 /* For UNIX, Linux, SAS University Edition, and SAS on Demand:   */
 /*       Change the INFILE statement to:                         */
 /*            infile "&path/donation.dat" dlm=',';                */
 /*                                                               */
 /* For  z/OS:                                                    */
 /*       Change the INFILE statement to:                         */
 /*             infile "&path..rawdata(donation)" dlm=',';         */
 /*****************************************************************/

data work.donations;
   infile "&path\donation.dat";
   input Employee_ID Qtr1 Qtr2 Qtr3 Qtr4;
   Total=sum(Qtr1,Qtr2,Qtr3,Qtr4);
run;

proc contents data=work.donations;
run;
```

b)

```
proc contents data=work.donations;
run;
```

c)

```
proc print data=work.donations;
run;
```

LEVEL 2

2.

a)

```
data work.newpacks;
    input Supplier_Name $ 1-20 Supplier_Country $ 23-24
          Product_Name $ 28-70;
    datalines;
Top Sports             DK   Black/Black
Top Sports             DK   X-Large Bottlegreen/Black
Top Sports             DK   Comanche Women's 6000 Q Backpack. Bark
Miller Trading Inc     US   Expedition Camp Duffle Medium Backpack
Toto Outdoor Gear      AU   Feelgood 55-75 Litre Black Women's Backpack
Toto Outdoor Gear      AU   Jaguar 50-75 Liter Blue Women's Backpack
Top Sports             DK   Medium Black/Bark Backpack
Top Sports             DK   Medium Gold Black/Gold Backpack
Top Sports             DK   Medium Olive Olive/Black Backpack
Toto Outdoor Gear      AU   Trekker 65 Royal Men's Backpack
Top Sports             DK   Victor Grey/Olive Women's Backpack
Luna sastreria S.A.    ES   Hammock Sports Bag
Miller Trading Inc     US   Sioux Men's Backpack 26 Litre.
;
run;
```

b)

```
data work.newpacks;
    input Supplier_Name $ 1-20 Supplier_Country $ 23-24
          Product_Name $ 28-70;
    datalines;
Top Sports              DK   Black/Black
Top Sports              DK   X-Large Bottlegreen/Black
Top Sports              DK   Comanche Women's 6000 Q Backpack. Bark
Miller Trading Inc      US   Expedition Camp Duffle Medium Backpack
Toto Outdoor Gear       AU   Feelgood 55-75 Litre Black Women's Backpack
Toto Outdoor Gear       AU   Jaguar 50-75 Liter Blue Women's Backpack
Top Sports              DK   Medium Black/Bark Backpack
Top Sports              DK   Medium Gold Black/Gold Backpack
Top Sports              DK   Medium Olive Olive/Black Backpack
Toto Outdoor Gear       AU   Trekker 65 Royal Men's Backpack
Top Sports              DK   Victor Grey/Olive Women's Backpack
Luna sastreria S.A.     ES   Hammock Sports Bag
Miller Trading Inc      US   Sioux Men's Backpack 26 Litre.
;
run;

proc contents data=work.newpacks;
run;
```

c)

The SAS System

The CONTENTS Procedure

Data Set Name	WORK.NEWPACKS	Observations	13
Member Type	DATA	Variables	3
Engine	V9	Indexes	0
Created	09/30/2019 12:52:19	Observation Length	65
Last Modified	09/30/2019 12:52:19	Deleted Observations	0
Protection		Compressed	NO
Data Set Type		Sorted	NO
Label			
Data Representation	WINDOWS_64		
Encoding	wlatin1 Western (Windows)		

Engine/Host Dependent Information	
Data Set Page Size	65536
Number of Data Set Pages	1
First Data Page	1
Max Obs per Page	1005
Obs in First Data Page	13
Number of Data Set Repairs	0
ExtendObsCounter	YES
Filename	C:\Users\ASUS\AppData\Local\Temp\SAS Temporary Files_TD10852_DESKTOP-FB23C58_\newpacks.sas7bdat
Release Created	9.0401M3
Host Created	X64_8HOME

Alphabetic List of Variables and Attributes

#	Variable	Type	Len
3	Product_Name	Char	43
2	Supplier_Country	Char	2
1	Supplier_Name	Char	20

- 13
- 3
- 43

d)

```
proc print data=work.newpacks;
run;
```

The SAS System

Obs	Supplier_Name	Supplier_Country	Product_Name
1	Top Sports	DK	Black/Black
2	Top Sports	DK	X-Large Bottlegreen/Black
3	Top Sports	DK	Comanche Women's 6000 Q Backpack. Bark
4	Miller Trading Inc	US	Expedition Camp Duffle Medium Backpack
5	Toto Outdoor Gear	AU	Feelgood 55-75 Litre Black Women's Backpack
6	Toto Outdoor Gear	AU	Jaguar 50-75 Liter Blue Women's Backpack
7	Top Sports	DK	Medium Black/Bark Backpack
8	Top Sports	DK	Medium Gold Black/Gold Backpack
9	Top Sports	DK	Medium Olive Olive/Black Backpack
10	Toto Outdoor Gear	AU	Trekker 65 Royal Men's Backpack
11	Top Sports	DK	Victor Grey/Olive Women's Backpack
12	Luna sastreria S.A.	ES	Hammock Sports Bag
13	Miller Trading Inc	US	Sioux Men's Backpack 26 Litre.

CHALLENGE

3.

```
data work.date;
    CurrentDate=today();
    CurrentTime=time();
    CurrentDateTime=datetime();
run;

proc print data=work.date;
run;
```

The SAS System

Obs	Supplier_Name	Supplier_Country	Product_Name
1	Top Sports	DK	Black/Black
2	Top Sports	DK	X-Large Bottlegreen/Black
3	Top Sports	DK	Comanche Women's 6000 Q Backpack. Bark
4	Miller Trading Inc	US	Expedition Camp Duffle Medium Backpack
5	Toto Outdoor Gear	AU	Feelgood 55-75 Litre Black Women's Backpack
6	Toto Outdoor Gear	AU	Jaguar 50-75 Liter Blue Women's Backpack
7	Top Sports	DK	Medium Black/Bark Backpack
8	Top Sports	DK	Medium Gold Black/Gold Backpack
9	Top Sports	DK	Medium Olive Olive/Black Backpack
10	Toto Outdoor Gear	AU	Trekker 65 Royal Men's Backpack
11	Top Sports	DK	Victor Grey/Olive Women's Backpack
12	Luna sastreria S.A.	ES	Hammock Sports Bag
13	Miller Trading Inc	US	Sioux Men's Backpack 26 Litre.

The SAS System

Obs	CurrentDate	CurrentTime	CurrentDateTime
1	21822	47127.79	1885467927.8

b)

```
PROC PRINT DATA=work.date;
      VAR CURRENTTIME CURRENTDATETIME;
RUN;
```

The SAS System

Obs	CurrentTime	CurrentDateTime
1	47127.79	1885467927.8

d)

- A SAS time value represents the number of second

- A SAS datetime value represents the number of days.

EXERCISE 3.2

4.

a) b)

```
LIBNAME ORION "C:\Users\ASUS\Desktop\SEM 5\SAS\P1 DATA";
%LET PATH=S :/Users\ASUS\Desktop\SEM 5\SAS\P1 DATA;
LIBNAME ORION "C:\Users\ASUS\Desktop\SEM 5\SAS\P1 DATA";
RUN;
```

C)

```
1    LIBNAME ORION "C:\Users\ASUS\Desktop\SEM 5\SAS\P1 DATA";
NOTE: Libref ORION was successfully assigned as follows:
      Engine:        V9
      Physical Name: C:\Users\ASUS\Desktop\SEM 5\SAS\P1 DATA

2    LIBNAME ORION "C:\Users\ASUS\Desktop\SEM 5\SAS\P1 DATA";
NOTE: Libref ORION was successfully assigned as follows:
      Engine:        V9
      Physical Name: C:\Users\ASUS\Desktop\SEM 5\SAS\P1 DATA
3    %LET PATH=S :/Users\ASUS\Desktop\SEM 5\SAS\P1 DATA;
4    LIBNAME ORION "C:\Users\ASUS\Desktop\SEM 5\SAS\P1 DATA";
NOTE: Libref ORION was successfully assigned as follows:
      Engine:        V9
      Physical Name: C:\Users\ASUS\Desktop\SEM 5\SAS\P1 DATA
5    RUN;
```

d)

```
LIBNAME ORION "C:\Users\ASUS\Desktop\SEM 5\SAS\P1 DATA";
```

e)

```
LIBNAME ORION "C:\Users\ASUS\Desktop\SEM 5\SAS\P1 DATA";
proc contents data=orion._all_ nods;
run;

libname orion clear
```

f)

The SAS System

The CONTENTS Procedure

Directory	
Libref	ORION
Engine	V9
Physical Name	C:\Users\ASUS\Desktop\SEM 5\SAS\P1 DATA
Filename	C:\Users\ASUS\Desktop\SEM 5\SAS\P1 DATA

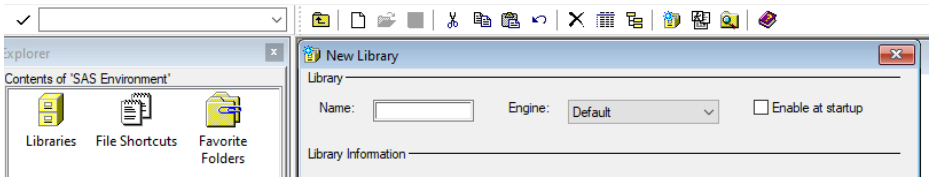
#	Name	Member Type	File Size	Last Modified
1	CAR	DATA	128KB	09/30/2019 12:04:18
2	CHARITIES	DATA	128KB	10/30/2017 16:24:38
3	CONSULTANTS	DATA	128KB	10/30/2017 16:24:38

g)

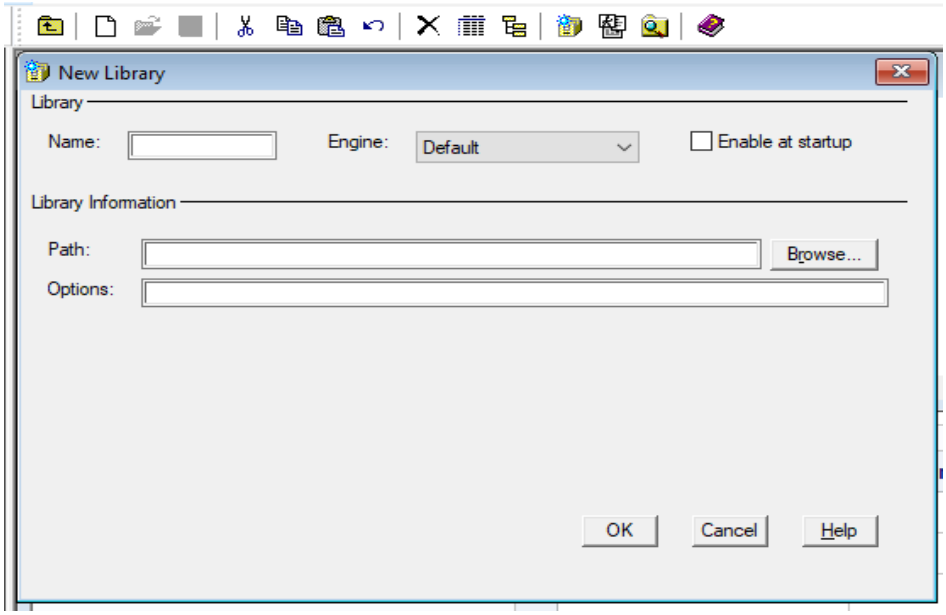
```
18   libname orion clear;
NOTE: Libref ORION has been deassigned.
```

5.

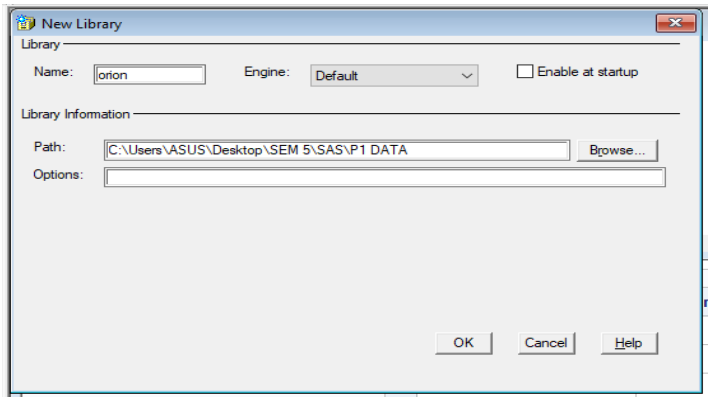
a) b)

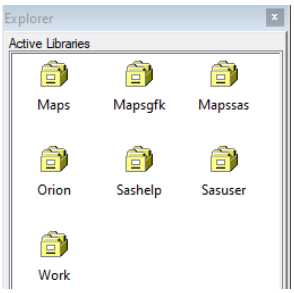


c)

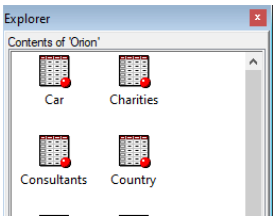


d)

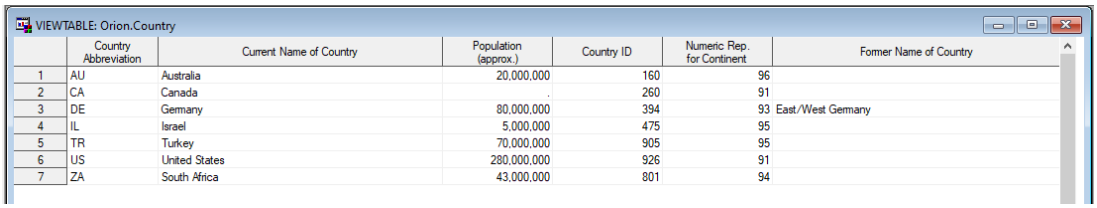




e)

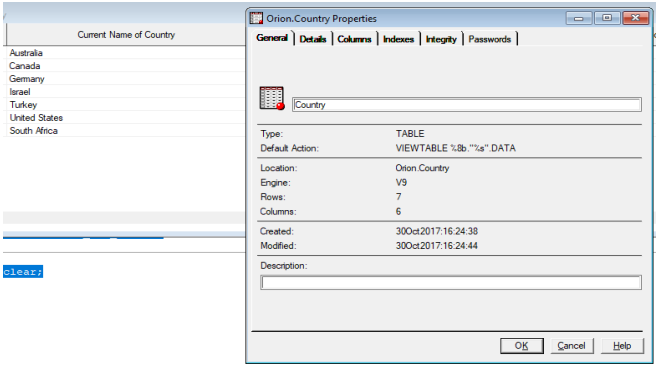


f)



	Country Abbreviation	Current Name of Country	Population (approx.)	Country ID	Numeric Rep. for Continent	Former Name of Country
1	AU	Australia	20,000,000	160	96	
2	CA	Canada		260	91	
3	DE	Germany	80,000,000	394	93	East/West Germany
4	IL	Israel	5,000,000	475	95	
5	TR	Turkey	70,000,000	905	95	
6	US	United States	280,000,000	926	91	
7	ZA	South Africa	43,000,000	801	94	

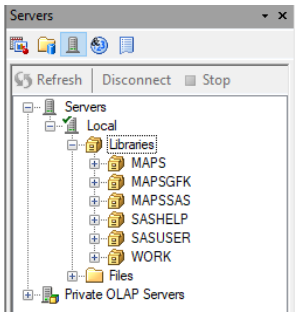
g) h) i) j)



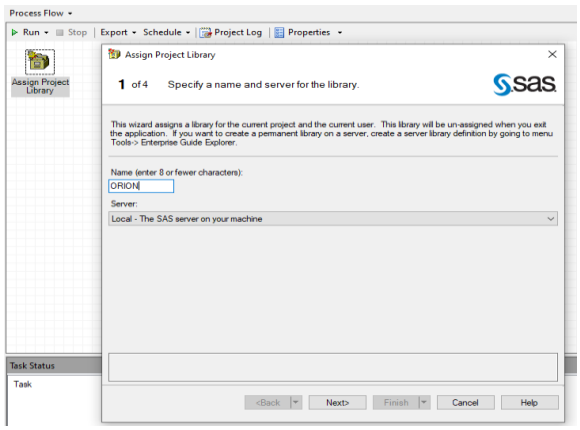
Column Name	Type	Length	Format	Informat	Label	Transcode
Country	Text	2			Country Abbreviation	Yes
Country_Name	Text	30			Current Name of Country	Yes
Population	Number	8	COMMA12.		Population (approx.)	No
Country_ID	Number	8			Country ID	No
Continent_ID	Number	8			Numeric Rep. for Continent	No
Country_FormerName	Text	30			Former Name of Country	Yes

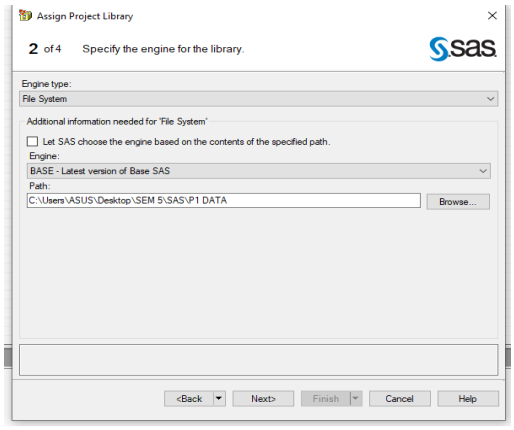
6.

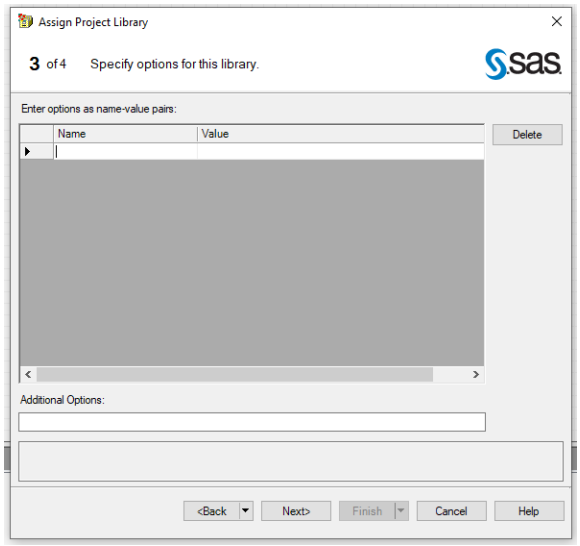
a)

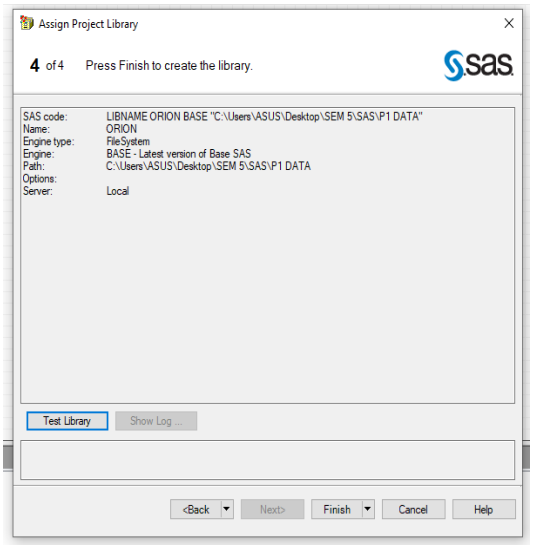


b) c)

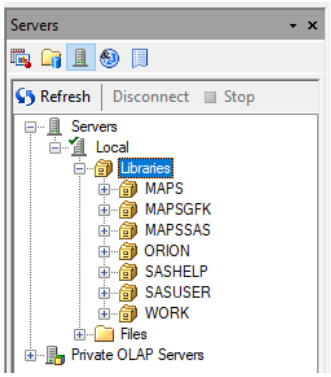




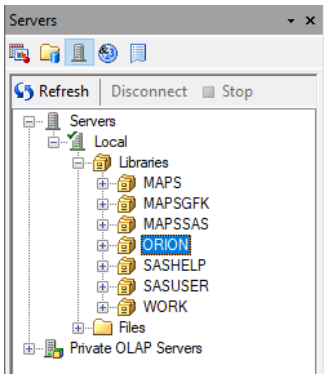




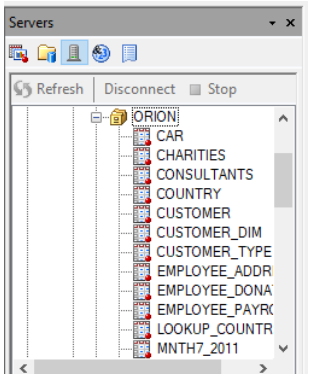
d)



e)



f)



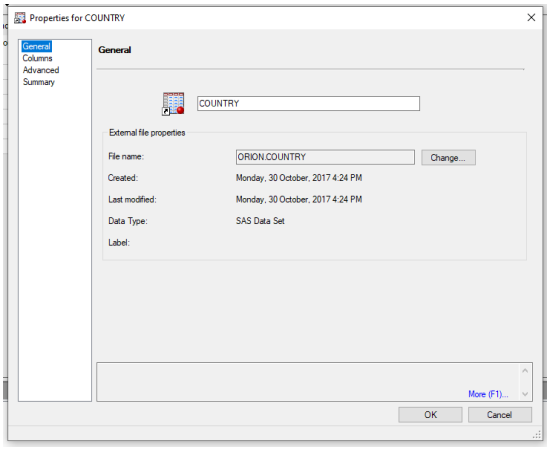
g)

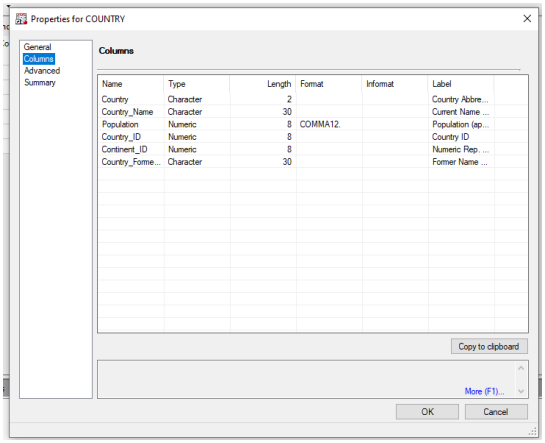
COUNTRY

Filter and Sort | Query Builder | Where | Data | Describe | Graph | Analyze | Export | Send To

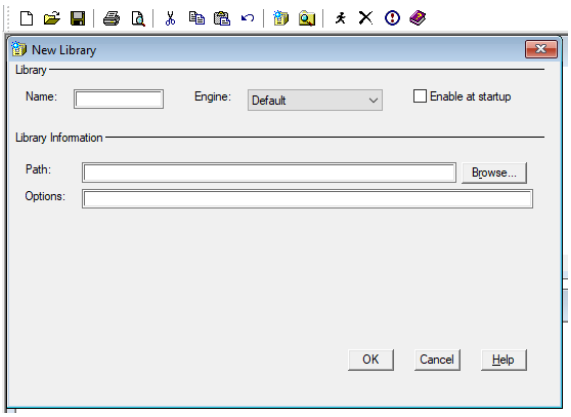
	Country	Country_Na...	Population	Country_ID	Continent_ID	Country_For...
1	AU	Australia	20,000,000	160	96	
2	CA	Canada	.	260	91	
3	DE	Germany	80,000,000	394	93	East/West Ger...
4	IL	Israel	5,000,000	475	95	
5	TR	Turkey	70,000,000	905	95	
6	US	United States	280,000,000	926	91	
7	ZA	South Africa	43,000,000	801	94	

h)

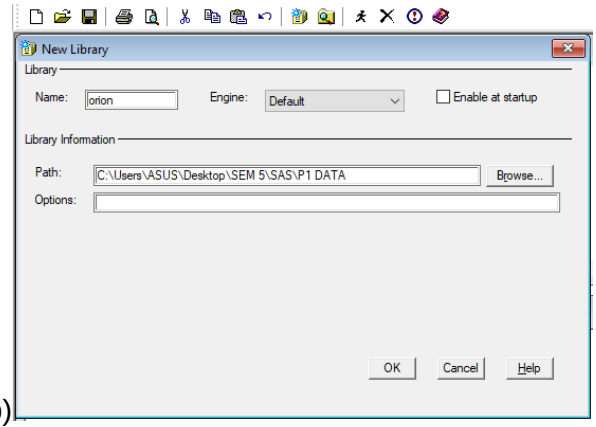

Properties for COUNTRY
General
Columns
Advanced
Summary
General
COUNTRY
External file properties
File name:
ORION.COUNTRY
Change...
Created:
Monday, 30 October, 2017 4:24 PM
Last modified:
Monday, 30 October, 2017 4:24 PM
Data Type:
SAS Data Set
Label:
More (F1)...
OK
Cancel


Properties for COUNTRY
General
Columns
Advanced
Summary
Columns
Name
Type
Length
Format
Informat
Label
Country
Character
2
Country Abbre...
Country_Name
Character
30
Current Name ...
Population
Numeric
8
COMMA12.
Population (ap...
Country_ID
Numeric
8
Country ID
Continent_ID
Numeric
8
Numeric Rep. ...
Country_Forme...
Character
30
Former Name ...
Copy to clipboard
More (F1)...
OK
Cancel

7.a)

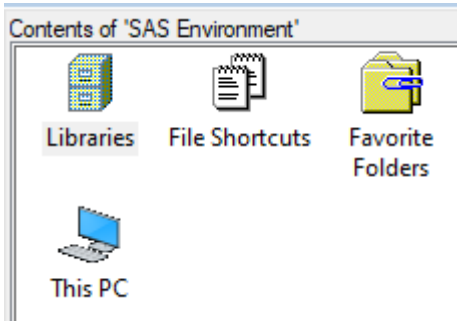

New Library
Library
Name:
Engine:
Default
Enable at startup
Library Information
Path:
Browse...
Options:
OK
Cancel
Help

b)

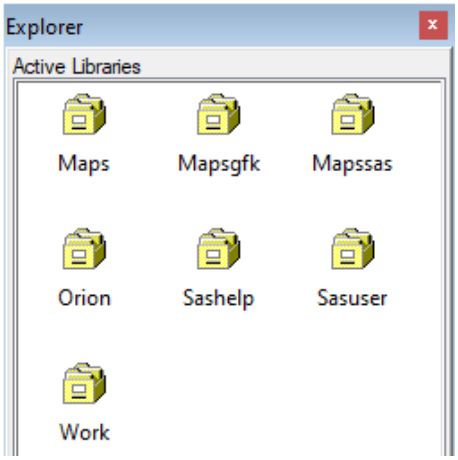


c) Click OK

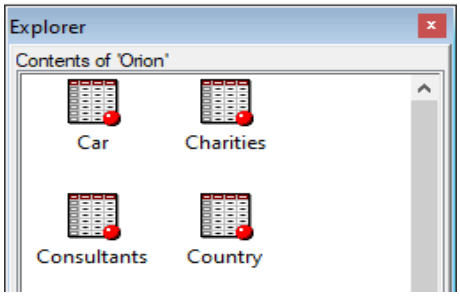
d)



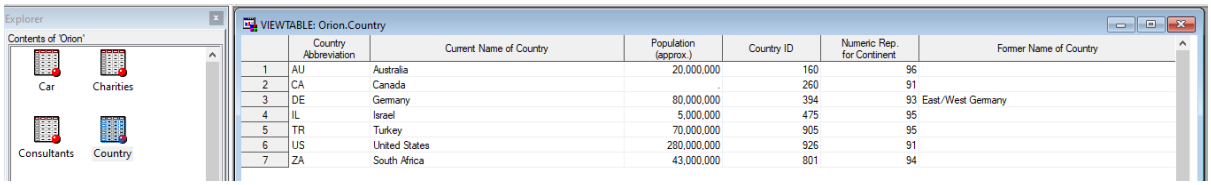
e)



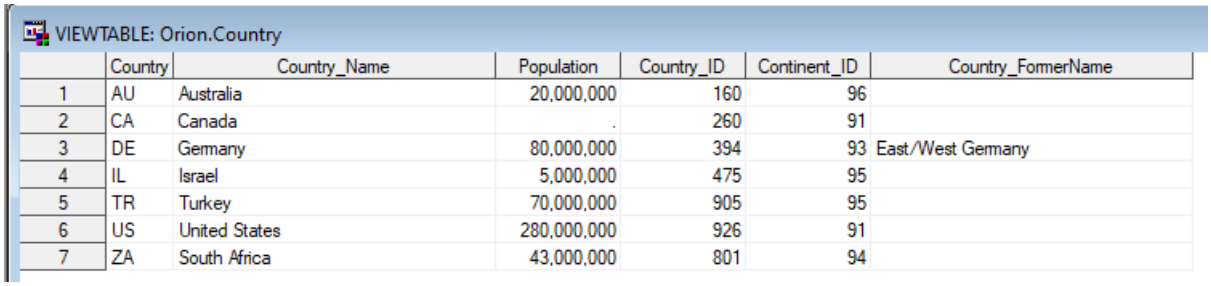
f)



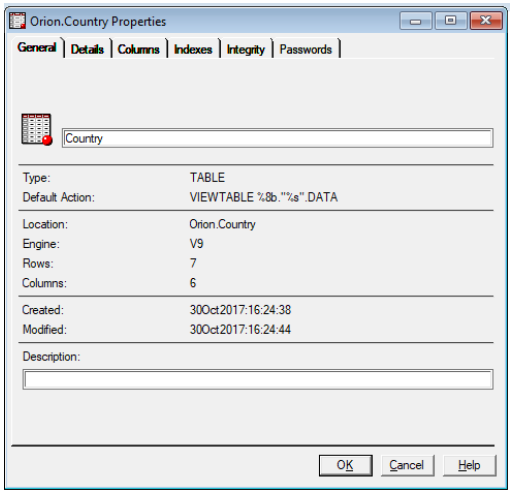
g)

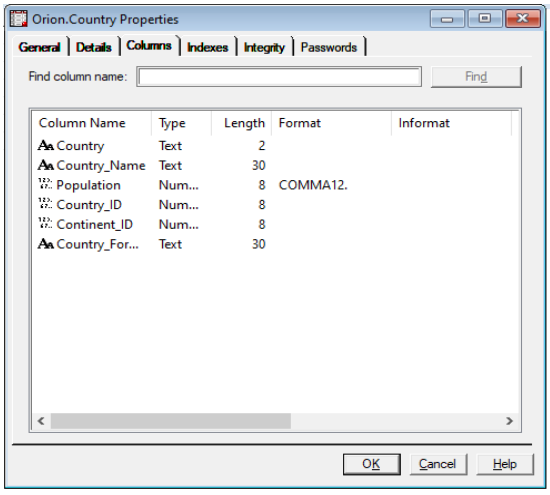

Explorer
Contents of 'Orion'
Car
Charities
Consultants
Country
VIEWTABLE: Orion.Country
Country Abbreviation
Current Name of Country
Population (approx.)
Country ID
Numeric Rep. for Continent
Former Name of Country
1 AU Australia 20,000,000 160 96
2 CA Canada 260 91
3 DE Germany 80,000,000 394 93 East/West Germany
4 IL Israel 5,000,000 475 95
5 TR Turkey 70,000,000 905 95
6 US United States 280,000,000 926 91
7 ZA South Africa 43,000,000 801 94

h)


VIEWTABLE: Orion.Country
Country
Country_Name
Population
Country_ID
Continent_ID
Country_FormerName
1 AU Australia 20,000,000 160 96
2 CA Canada 260 91
3 DE Germany 80,000,000 394 93 East/West Germany
4 IL Israel 5,000,000 475 95
5 TR Turkey 70,000,000 905 95
6 US United States 280,000,000 926 91
7 ZA South Africa 43,000,000 801 94

i)


Orion.Country Properties
General
Details
Columns
Indexes
Integrity
Passwords
Country
Type: TABLE
Default Action: VIEWTABLE "%8b.""%s".DATA
Location: Orion.Country
Engine: V9
Rows: 7
Columns: 6
Created: 30Oct2017:16:24:38
Modified: 30Oct2017:16:24:44
Description:
OK
Cancel
Help


Orion.Country Properties
General
Details
Columns
Indexes
Integrity
Passwords
Find column name:
Find
Column Name Type Length Format Informat
Country Text 2
Country_Name Text 30
Population Num... 8 COMMA12.
Country_ID Num... 8
Continent_ID Num... 8
Country_For... Text 30
OK
Cancel
Help

CHAPTER 5

Exercise 5.1

LEVEL 1

1)a)

```
libname orion "C:\Users\USER\Desktop\JGN DELETE\P1 DATA & PROG
(1)\P1 DATA";
proc print data=orion.employee_payroll;
run;
```

```
25          proc print data=orion.employee_payroll;
26          run;

NOTE: There were 424 observations read from the data set ORION.EMPLOYEE_PAYROLL.
NOTE: PROCEDURE PRINT used (Total process time):
      real time           0.20 seconds
      cpu time            0.17 seconds
```

Obs	Employee_ID	Employee_Gender	Salary	Birth_Date	Employee_Hire_Date	Employee_Term_Date	Marital_Status	Dependents
1	120101	M	163040	7535	17348	.	S	0
2	120102	M	108255	4971	12205	.	O	2
3	120103	M	87975	-2535	6575	.	M	1
4	120104	F	46230	-600	9132	.	M	1
5	120105	F	27110	6929	15826	.	S	0
6	120106	M	26960	-4026	6575	.	M	2

Folder nama employee_payroll

b)

```
proc print data=orion.employee_payroll;
var employee_id salary birth_date employee_hire_date;
run;
```

Page Break

Obs	Employee_ID	Salary	Birth_Date	Employee_Hire_Date
1	120101	163040	7535	17348
2	120102	108255	4971	12205
3	120103	87975	-2535	6575
4	120104	46230	-600	9132
5	120105	27110	6929	15826
6	120106	26960	-4026	6575

c)

```
proc print data=orion.employee_payroll SPLIT='*';
FORMAT SALARY DOLLAR12.2 EMPLOYEE_HIRE_DATE DATE9. BIRTH_DATE MMDDYY10.;
var employee_id salary birth_date employee_hire_date;
LABEL EMPLOYEE_HIRE_DATE='Employee_*Hire_Date';
run;
NOTE: There were 424 observations read from the data set ORION.EMPLOYEE_PAYROLL.
NOTE: PROCEDURE PRINT used (Total process time):
      real time           0.43 seconds
      cpu time            0.35 seconds
```

The SAS System

Obs	Employee_ID	Salary	Birth_Date	Employee_ Hire_Date
1	120101	$163,040.00	08/18/1980	01JUL2007
2	120102	$108,255.00	08/11/1973	01JUN1993
3	120103	$87,975.00	01/22/1953	01JAN1978

LEVEL 2

2.

```
TITLE1 "US SALES EMPLOYEES";
TITLE2 "EARNING UNDER $26,000";
PROC PRINT DATA=WORK.SALES NOOBS SPLIT='*';
VAR EMPLOYEE_ID FIRST_NAME LAST_NAME JOB_TITLE SALARY HIRE_DATE;
LABEL FIRST_NAME='FIRST*NAME'
LAST_NAME='LAST NAME'
JOB_TITLE='TITLE'
HIRE_DATE='DATE*HIRED';
FORMAT SALARY DOLLAR8.
DATE_HIRED MONYY7.;
WHERE JOB_TITLE LIKE 'Sales Rep. I'
AND SALARY<26000
AND EMPLOYEE_ID BETWEEN 121036 AND 121108;
RUN;
```

```
NOTE: There were 13 observations read from the data set WORK.SALES.
      WHERE (JOB_TITLE='Sales Rep. I') and (SALARY<26000) and (EMPLOYEE_ID>=121036 and
      EMPLOYEE_ID<=121108);
NOTE: PROCEDURE PRINT used (Total process time):
      real time           0.20 seconds
      cpu time            0.11 seconds
```

US SALES EMPLOYEES
EARNING UNDER $26,000

Employee_ID	FIRST NAME	LAST NAME	TITLE	Salary	DATE HIRED
121036	Teresa	Mesley	Sales Rep. I	$25,965	17440
121038	David	Anstey	Sales Rep. I	$25,285	18475
121044	Ray	Abbott	Sales Rep. I	$25,660	7152
121046	Roger	Mandzak	Sales Rep. I	$25,845	18444
121047	Karen	Grzebien	Sales Rep. I	$25,820	18506
121057	Tachaun	Voron	Sales Rep. I	$25,125	9101
121064	Asishana	Polky	Sales Rep. I	$25,110	13027
121079	Azmi	Mees	Sales Rep. I	$25,770	15280
121084	Tulsidas	Ould	Sales Rep. I	$22,710	12784
121092	Gynell	Pritt	Sales Rep. I	$25,680	17014
121101	Burnetta	Buckner	Sales Rep. I	$25,390	18567
121106	James	Hilburger	Sales Rep. I	$25,880	14641
121108	Libby	Levi	Sales Rep. I	$25,930	18567

CHALLENGE
3.exploring formats by category

```
PROC SORT DATA=ORION.SALES
OUT=WORK.SALES;
BY EMPLOYEE_ID;
RUN;
```

```
PROC PRINT DATA=ORION.SALES NOOBS SPLIT='*';
VAR EMPLOYEE_ID FIRST_NAME LAST_NAME JOB_TITLE;
LABEL FIRST_NAME='First_*Name';
FORMAT JOB_TITLE $QUOTE20.;
RUN;
```

```
NOTE: There were 165 observations read from the data set ORION.SALES.
NOTE: PROCEDURE PRINT used (Total process time):
      real time           0.19 seconds
      cpu time            0.12 seconds
```

Employee_ID	First_ Name	Last_Name	Job_Title
120102	Tom	Zhou	"Sales Manager"
120103	Wilson	Dawes	"Sales Manager"
120121	Irenie	Elvish	"Sales Rep. II"
120122	Christina	Ngan	"Sales Rep. II"
120123	Kimiko	Hotstone	"Sales Rep. I"
120124	Lucian	Daymond	"Sales Rep. I"

DEFINING AND USING A NUMERIC FORMAT

1.2.

```
libname orion "C:\Users\USER\Desktop\JGN DELETE\P1 DATA & PROG (1)\P1
DATA";
```

```
proc format;
   value tiers 0-49999='Tier 1'
           50000-99999='Tier 2'
         100000-250000='Tier 3';
run;

data work.salaries;
     input Name $ Salary;
     Original_Salary=Salary;
     datalines;
Abi 50000
Mike 65000
Jose 50000.00
Joe 37000.50
Ursula 142000
Lu 49999.99
;

proc print data=work.salaries;
```

```
   format Salary tiers.;
run;
```

```
NOTE: There were 6 observations read from the data set WORK.SALARIES.
NOTE: PROCEDURE PRINT used (Total process time):
      real time             0.07 seconds
      cpu time              0.01 seconds
```

Obs	Name	Salary	Original_Salary
1	Abi	Tier 2	50000.00
2	Mike	Tier 2	65000.00
3	Jose	Tier 2	50000.00
4	Joe	Tier 1	37000.50
5	Ursula	Tier 3	142000.00
6	Lu	50000	49999.99

3. 50000.CHANGE THE TIERS WIDTH.

4.
```
proc print data=work.salaries;
   format Salary tiers8.;
run;
```

```
NOTE: There were 6 observations read from the data set WORK.SALARIES.
NOTE: PROCEDURE PRINT used (Total process time):
      real time             0.12 seconds
      cpu time              0.04 seconds
```

The SAS System

Obs	Name	Salary	Original_Salary
1	Abi	Tier 2	50000.00
2	Mike	Tier 2	65000.00
3	Jose	Tier 2	50000.00
4	Joe	Tier 1	37000.50
5	Ursula	Tier 3	142000.00
6	Lu	49999.99	49999.99

NEW SALARY FOR LU IS 49999.99

4.a.

```
libname orion "C:\Users\Admin\Desktop\SAS\P1 DATA & PROG\P1 DATA";
PROC PRINT DATA=ORION.EMPLOYEE_PAYROLL;
RUN;
```

b.c.
```
PROC FORMAT;
VALUE $GENDER F='Female'
              M='Male';
VALUE MNAME 1='January'
            2='February'
```

```
            3='March';
RUN;
```

d.

```
TITLE1 "Employees with Birthdays in Q1";
TITLE2;
data Q1Birthdays;
   set orion.employee_payroll;
   BirthMonth=month(Birth_Date);
   if BirthMonth le 3;
run;
PROC FORMAT;
VALUE $GENDER F='Female'
                    M='Male';
VALUE MNAME 1='January'
                  2='February'
                  3='March';
RUN;
PROC PRINT DATA=Q1Birthdays label SPLIT='*' width=full;
LABEL BirthMonth='Birth*Month';
FORMAT EMPLOYEE_GENDER $GENDER. DEPENDENTS MNAME.;
VAR EMPLOYEE_ID EMPLOYEE_GENDER BIRTHMONTH;
TITLE;
RUN;
```

e.

```
NOTE: There were 113 observations read from the data set WORK.Q1BIRTHDAYS.
NOTE: PROCEDURE PRINT used (Total process time):
      real time           2.16 seconds
      cpu time            0.20 seconds
```

Obs	Employee_ID	Employee_Gender	Birth Month
1	120103	Male	1
2	120107	Female	1
3	120108	Female	2
...			
111	121140	Male	1
112	121142	Male	2
113	121148	Male	1

LEVEL 2

5.a.

```
libname orion "C:\Users\Admin\Desktop\SAS\P1 DATA & PROG\P1 DATA";
proc print data=orion.nonsales;
   var Employee_ID Job_Title Salary Gender;
   title1 'Salary and Gender Values';
   title2 'for Non-Sales Employees';
run;
NOTE: There were 235 observations read from the data set ORION.NONSALES.
NOTE: PROCEDURE PRINT used (Total process time):
      real time           0.35 seconds
      cpu time            0.21 seconds
```

Salary and Gender Values
for Non-Sales Employees

Obs	Employee_ID	Job_Title	Salary	Gender
1	120101	Director	163040	M
2	120104	Administration Manager	46230	F
3	120105	Secretary I	27110	F

b.

```
PROC FORMAT;
VALUE $GENDER F='Female'
M='Male'
OTHER='Invalid code';
RUN;
```

```
NOTE: Format $GENDER is already on the library WORK.FORMATS.
NOTE: Format $GENDER has been output.
46   RUN;

NOTE: PROCEDURE FORMAT used (Total process time):
      real time           0.02 seconds
      cpu time            0.00 seconds
```

c.

```
PROC FORMAT;
VALUE SALRANGE 20000-99999='Below $100,000'
100000-500000='$100,000 or more'
.='Missing salary'
OTHER='Invalid salary';
RUN;
```

```
NOTE: Format SALRANGE has been output.
66   RUN;

NOTE: PROCEDURE FORMAT used (Total process time):
      real time           0.03 seconds
      cpu time            0.03 seconds
```

d.

```
proc print data=orion.nonsales;
   var Employee_ID Job_Title Salary Gender;
   FORMAT GENDER $GENDER. SALARY SALRANGE.;
   title1 'Salary and Gender Values';
   title2 'for Non-Sales Employees';
run;
```

```
NOTE: There were 235 observations read from the data set ORION.NONSALES.
NOTE: PROCEDURE PRINT used (Total process time):
      real time           0.34 seconds
      cpu time            0.25 seconds
```

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
13	120115	Service Assistant I	Invalid salary	Male

CHALLENGE

6.**What option enables you to store the formats in a permanent library?**

Permanent Informats and Formats

If we want to use a format or informat that is created in one SAS job or session in a subsequent job or session, then we must permanently store the format or informat in a SAS catalog.

We permanently store informats and formats by using the LIBRARY= option in the PROC FORMAT statement.

LIBRARY= libref<.catalog>

specifies a SAS library or catalog that contains the informats or formats that you are creating in the PROC FORMAT step. The procedure stores these informats and formats in the catalog that you specify so that you can use them in subsequent SAS sessions or jobs.

For example: proc format library =orion.format1;

What option causes SAS to look for formats in permanent libraries?

Accessing Permanent Informats and Formats

After we have permanently stored an informat or format, we can use it in later SAS sessions or jobs. If we associate permanent informats or formats with variables in a later SAS session or job, then SAS must be able to access the informats and formats. Thus, we

must use a LIBNAME statement to assign a libref to the library that stores the catalog that stores the informats or formats.

Associating Informats and Formats with Variables

Step	Informats	Formats
In a DATA step	Use the ATTRIB or INFORMAT statement to permanently associate an informat with a variable. Use the INPUT function or INPUT statement to associate the informat with the variable only for the duration of the DATA step.	Use the ATTRIB or FORMAT statement to permanently associate a format with a variable. Use the PUT function or PUT statement to associate the format with the variable only for the duration of the DATA step.
In a PROC step	The ATTRIB and INFORMAT statements are valid in base SAS procedures. However, in base SAS software, typically you do not assign informats in PROC steps because the data have already been read into SAS variables.	Use the ATTRIB statement or the FORMAT statement to associate formats with variables. If you use either statement in a procedure that produces an output data set, the format is permanently associated with the variable in the output data set. If you use either statement in a procedure that does not produce an output data set, the statement associates the format with the variable only for the duration of the PROC step.

CHAPTER 6

1. a) customer_gender

M=males.F=females

b) c) d) e) f)

```
data work.youngadult;
      set orion.customer_dim;
      where customer_gender='F'
      and customer_group like '%Gold%'
      and customer_age>=18
      and customer_age<=36;
      discount=.25;
run;
proc print data=work.youngadult label split='*' noobs;
      var customer_id customer_name customer_age customer_gender
customer_group discount;
      label customer_age='Customer_*Age'
            customer_gender='Customer_*Gender';
run;
```

Customer ID	Customer Name	Customer_ Age	Customer_ Gender	Customer Group Name	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

2. a)b)c)d)

```
data work.assistant;
      set orion.staff;
      where job_title like '%Assistant%'
      and salary<26000;
      Increase=salary*0.10;
      new_salary=salary+Increase;
      format salary dollar12.2 new_salary dollar12.2 increase dollar12.2;
run;
proc print data=work.assistant noobs;
      var job_title salary increase new_salary;
      id employee_id;
run;
```

3. a)b)c)

```
data work.tony;
      set orion.customer_dim;
      where customer_firstname like'%To%';
run;
proc print data=work.tony;
      var customer_firstname customer_lastname;
run;
```

The SAS System

Obs	Customer_FirstName	Customer_LastName
1	Tonie	Asmussen
2	Tommy	Mcdonald

4. a)

```
data work.increase;
   set orion.staff;
   Increase=Salary*0.10;
   NewSalary=Salary+Increase;
run;

proc print data=work.increase;
run;
```

b)
```
data work.increase;
   set orion.staff;
   where emp_hire_date>='01JUL2010'd;
   Increase=Salary*0.10;
   NewSalary=Salary+Increase;
run;
```

c)
```
data work.increase;
   set orion.staff;
   where emp_hire_date>='01JUL2010'd;
   Increase=Salary*0.10;
   NewSalary=Salary+Increase;
   if increase>3000;
```

d)
```
data work.increase;
   set orion.staff;
   where emp_hire_date>='01JUL2010'd;
   Increase=Salary*0.10;
   NewSalary=Salary+Increase;
   if increase>3000;
      keep employee_id emp_hire_date salary increase NewSalary;
run;
```

e)
```
data work.increase;
   set orion.staff;
   where emp_hire_date>='01JUL2010'd;
   Increase=Salary*0.10;
   NewSalary=Salary+Increase;
   if increase>3000;
      keep employee_id emp_hire_date salary increase NewSalary;
      label employee_id='Employee ID'
      emp_hire_date='Hire Date'
      salary='Employee Annual Salary'
      NewSalary='New Annual Salary';
run;
```

f)
```
data work.increase;
   set orion.staff;
   where emp_hire_date>='01JUL2010'd;
   Increase=Salary*0.10;
   NewSalary=Salary+Increase;
   if increase>3000;
      keep employee_id emp_hire_date salary increase NewSalary;
      label employee_id='Employee ID'
      emp_hire_date='Hire Date'
      salary='Employee Annual Salary'
```

```
      NewSalary='New_Annual Salary';
      format salary dollar10.2
            Newsalary dollar10.2
            Increase comma5.;
run;

g) proc contents data=work.increase;
run;
```

Alphabetic List of Variables and Attributes						
#	Variable	Type	Len	Format	Informat	Label
3	Emp_Hire_Date	Num	8	DATE9.	DATE9.	Hire Date
1	Employee_ID	Num	8	12.	.	Employee ID
4	Increase	Num	8	COMMA5.		
5	NewSalary	Num	8	DOLLAR10.2		New Annual Salary
2	Salary	Num	8	DOLLAR10.2		Employee Annual Salary

h) They were created based on the original data set which is orion.staff.

```
i) proc print data=work.increase split=' ' label;
      Label Employee_ID='Employee ID'
                  Emp_Hire_Date='Hire Date'
                  NewSalary='New Annual Salary';

run;
```

Obs	Employee ID	Employee Annual Salary	Hire Date	Increase	New Annual Salary
1	120128	$30,890.00	01NOV2010	3,089	$33,979.00
2	120144	$30,265.00	01OCT2010	3,027	$33,291.50
3	120161	$30,785.00	01OCT2010	3,079	$33,863.50
4	120264	$37,510.00	01DEC2010	3,751	$41,261.00

5. a) b) c) d) e) f)

```
data work.delays;
      set orion.orders;
      Order_month=month(order_date);
      where delivery_date>4+order_date
      and employee_ID=99999999;
      if order_month=8;
      keep employee_id customer_id order_date delivery_date order_month;
      label order_date='Date Ordered'
                  delivery_date='Date Delivered'
                  order_month='Month Ordered';
      format order_date mmddyy10. delivery_date mmddyy10.;
run;

g) proc contents data=work.delays;
run;
```

Alphabetic List of Variables and Attributes					
#	Variable	Type	Len	Format	Label
2	Customer_ID	Num	8	12.	Customer ID
4	Delivery_Date	Num	8	MMDDYY10.	Date Delivered
1	Employee_ID	Num	8	12.	Employee ID
3	Order_Date	Num	8	MMDDYY10.	Date Ordered
5	Order_month	Num	8		Month Ordered

h)
```
proc print data=work.delays split='*';
      label delivery_date='Delivery_*Date'
      order_month='Order_*Month';
run;
```

Obs	Employee ID	Customer ID	Date Ordered	Delivery_ Date	Order_ Month
1	99999999	70187	08/13/2007	08/18/2007	8
2	99999999	52	08/20/2007	08/26/2007	8
3	99999999	16	08/27/2007	09/04/2007	8
4	99999999	61	08/29/2007	09/03/2007	8
5	99999999	2550	08/10/2008	08/15/2008	8

6. a)
```
data work.bigdonations;
      set orion.employee_donations;
run;
```

b)
```
data work.bigdonations;
      set orion.employee_donations;
      total=sum(qtr1,qtr2,qtr3,qtr4);
run;
```

c)d)e)f)g)h)
```
data work.bigdonations;
      set orion.employee_donations;
      total=sum(qtr1,qtr2,qtr3,qtr4);
      NumQtrs=N(qtr1,qtr2,qtr3,qtr4);
      if total<50 then delete;
      if NumQtrs ~=4 then delete;
      drop Paid_By Recipients;
      label
      qtr1='First Quarter'
      qtr2='Second Quarter'
      qtr3='Third Quarter'
      qtr4='Fourth Quarter';
run;

proc contents data=work.bigdonations;
run;
```

Alphabetic List of Variables and Attributes					
#	Variable	Type	Len	Format	Label
1	Employee_ID	Num	8	12.	Employee ID
7	NumQtrs	Num	8		
2	Qtr1	Num	8		First Quarter
3	Qtr2	Num	8		Second Quarter
4	Qtr3	Num	8		Third Quarter
5	Qtr4	Num	8		Fourth Quarter
6	total	Num	8		

```
proc print data=work.bigdonations split='*' noobs;
      label NumQtrs='Num*Qtrs'
      qtr1='First*Quarter'
```

```
        qtr2='Second*Quarter'
        qtr3='Third*Quarter'
        qtr4='Fourth*Quarter';
run;
```

Employee ID	First Quarter	Second Quarter	Third Quarter	Fourth Quarter	total	Num Qtrs
120267	15	15	15	15	60	4
120269	20	20	20	20	80	4
120271	20	20	20	20	80	4
120275	15	15	15	15	60	4
120660	25	25	25	25	100	4

CHAPTER 7

EXERCISE 7

a)
```
proc contents data=custfm._all_;
   run;
   data work.males;
   run;
   proc print data=work.males label;
   run;
```

b)
```
libname orion "C:\Users\USER\Desktop\P1 DATA";
  options validvarname=v7;
```

c)
```
option validvarname=v7;
   libname custfm xlsx "C:\Users\USER\Desktop\P1 DATA\custfm.xlsx";
```

d)
```
option validvarname=v7;
 libname custfm xlsx "C:\Users\USER\Desktop\P1 DATA\custfm.xlsx";
proc contents data=custfm._all_;
run;
```

#	Name	Member Type
1	FEMALES	DATA
2	MALES	DATA

e)
```
data work.males;
 set custfm.males;
```

f)
```
data work.males;
set custfm.males;
keep first_name last_name birth_date;
```

g)
```
data work.males;
  set custfm.males;
  format birth_date year4. ;
```

h)
```
data work.males;
set custfm.males;
keep first_name last_name birth_date;
```

```
format birth_date year4.;
label birth_date='birth year';

i)libname custfm clear;

j)data work.males;
set custfm.males;
keep first_name last_name birth_date;
format birth_date year4.;
label birth_date='birth year';
run;
libname custfm clear;
proc print data=work.males label;
run;
```

The SAS System

Obs	First Name	Last Name	birth year
1	James	Kvarniq	1974
2	David	Black	1969
3	Markus	Sepke	1988
4	Ulrich	Heyde	1939
5	Jimmie	Evans	1954
6	Tonie	Asmussen	1954
7	Oliver S.	F ling	1964
8	Michael	Dineley	1959
9	Tulio	Devereaux	1949
10	Rolf	Robak	1939
11	Alvan	Goheen	1984
12	Phenix	Hill	1964
13	Alphone	Greenwald	1984
14	Wendell	Summersby	1964
15	Thomas	Leitmann	1979
16	Gert-Gunter	Mendler	1934

LEVEL 2

a.b.c.d.e.f.g.

```
options validvarname=v7;
libname prod excel "C:\Users\Admin\Desktop\SAS\P1 DATA & PROG\P1
DATA\products.xlsx";
137  libname prod excel "C:\Users\Admin\Desktop\SAS\P1 DATA & PROG\P1 DATA\products.xlsx";
NOTE: Libref PROD was successfully assigned as follows:
      Engine:        EXCEL
      Physical Name: C:\Users\Admin\Desktop\SAS\P1 DATA & PROG\P1 DATA\products.xlsx

proc contents data=prod._all_;
run;
```

#	Name	Member Type	DBMS Member Type
1	product_list	DATA	TABLE
2	product_list$	DATA	TABLE

```
options validvarname=v7;
libname prod excel "C:\Users\Admin\Desktop\SAS\P1 DATA & PROG\P1
DATA\product list.xlsx";
proc contents data=prod._all_;
run;

data work.golf;
set PROD.'product list$'n;
where product_reference_id between 240000000000 and 240200200000
and product_id>=240200100000;
if supplier_id=. then delete;
label product_name='Golf Products';
run;

proc print data=work.golf label;
var product_name;
run;
```

Obs	Golf Products
1	Ball Bag
2	Red/White/Black Staff 9 Bag
3	Tee Holder
4	Bb Softspikes - Xp 22-pack
5	Bretagne Performance Tg Men's Golf Shoes L.
6	Bretagne Soft-Tech Men's Glove, left

```
libname prod clear;
```

```
NOTE: There were 56 observations read from the data set WORK.GOLF.
NOTE: PROCEDURE PRINT used (Total process time):
      real time           0.22 seconds
      cpu time            0.07 seconds


17
18   libname prod clear;
NOTE: Libref PROD has been deassigned.
```

3)a)
```
libname out xlsx "C:\Users\USER\Desktop\P1 DATA\\employee.xls";
  data salesemps;
  length First_Name $ 12 Last_Name $ 180
  Job_Title $ 25;
  infile "&path\newemps.csv" dlm=',';
  input First_Name $ Last_Name $
  Job _Title $ Salary;
  run;
```

b)
```
data salesemps;
  length First_Name $ 12 Last_Name $ 18
  Job_Title $ 25;
  infile "C:\Users\USER\Desktop\P1 DATA\newemps.csv" dlm=',';
```

```
  input First_Name $ Last_Name $
  Job_Title $ Salary;
  run;
```

c)
```
data out.salesemps;
  length First_Name $ 12 Last_Name $ 18
  Job_Title $ 25;
  infile "C:\Users\USER\Desktop\P1 DATA\newemps.csv" dlm=',';
  input First_Name $ Last_Name $
  Job_Title $ Salary;
  run;
```

```
NOTE: 71 records were read from the infile "C:¥Users¥USER¥Desktop¥P1 DATA¥newemps.csv".
      The minimum record length was 80.
      The maximum record length was 80.
NOTE: The data set OUT.SALESEMPS has 71 observations and 4 variables.
NOTE: DATA statement used (Total process time):
      real time           0.03 seconds
      cpu time            0.01 seconds
```

d)
```
proc contents data=out.salesemps;
  run;
```

Data Set Name	ORION.salesemps	**Observations**	.
Member Type	DATA	**Variables**	4
Engine	XLSX	**Indexes**	0
Created	.	**Observation Length**	0
Last Modified	.	**Deleted Observations**	0
Protection		**Compressed**	NO
Data Set Type		**Sorted**	NO
Label			
Data Representation	Default		
Encoding	Default		

Alphabetic List of Variables and Attributes

#	Variable	Type	Len	Format	Informat	Label
1	First_Name	Char	12	$12.	$12.	First_Name
3	Job_Title	Char	16	$16.	$16.	Job_Title
2	Last_Name	Char	18	$18.	$18.	Last_Name
4	Salary	Num	8	BEST.		Salary

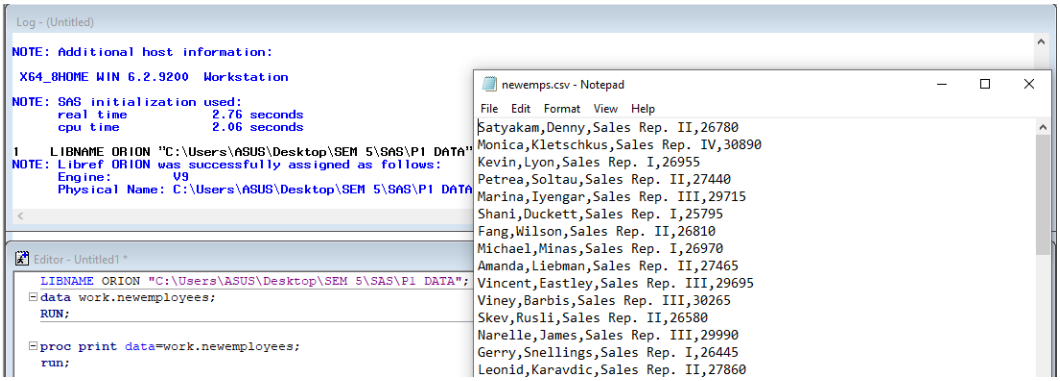
CHAPTER 8

EXERCISE 8.2

LEVEL 1

1.

a)



b)

```
LIBNAME ORION "C:\Users\ASUS\Desktop\SEM 5\SAS\P1 DATA";
proc print data=orion.sales;
run;
data work.newemployees;
      LENGTH First $ 12. Last $ 14. Title $ 25. Salary $8. ;
      INFILE "C:\Users\ASUS\Desktop\SEM 5\SAS\P1 DATA\newemps.CSV" DLM=',';
      input First $ Last $ Title $ Salary $;
run;
proc contents data=work.newemployees;
run;
```

Alphabetic List of Variables and Attributes

#	Variable	Type	Len
1	First	Char	12
2	Last	Char	14
4	Salary	Char	8
3	Title	Char	25

c)

```
proc print data=work.newemployees;
var First Last Title Salary;
run;
```

The SAS System

Obs	First	Last	Title	Salary
1	Satyakam	Denny	Sales Rep. II	26780
2	Monica	Kletschkus	Sales Rep. IV	30890
3	Kevin	Lyon	Sales Rep. I	26955
4	Petrea	Soltau	Sales Rep. II	27440
5	Marina	Iyengar	Sales Rep. III	29715

LEVEL 2

2.

a)

```
LIBNAME ORION "C:\Users\ASUS\Desktop\SEM 5\SAS\P1 DATA";
data work.qtrdonation;
      LENGTH EmpID $6 Q1 $8  Q2 $8  Q3 $8 Q4 $8;
      INFILE "C:\Users\ASUS\Desktop\SEM 5\SAS\P1 DATA\donation.dat" DLM='
';
      input EmpID $ Q1 $ Q2 $ Q3 $ Q4 $ ;
run;
proc contents data=work.qtrdonation;
run;
proc print data=work.qtrdonation;
run;
```

b)

Alphabetic List of Variables and Attributes

#	Variable	Type	Len
1	EmpID	Char	6
2	Q1	Char	8
3	Q2	Char	8
4	Q3	Char	8
5	Q4	Char	8

c)

The SAS System

Obs	EmpID	Q1	Q2	Q3	Q4
1	120265				25
2	120267	15	15	15	15
3	120269	20	20	20	20

CHALLENGE

3.

a)

```
data work.managers2;
      LENGTH ID First $ Last $ Gender $ Salary Title $;
      INFILE "C:\Users\ASUS\Desktop\SEM 5\SAS\P1 DATA\managers2.dat" DLM='
';
      input ID First $ Last $ Gender $ Salary Title $;
run;
proc contents data=work.managers2;
run;

proc print data=work.managers2;
run;
```

b)

Alphabetic List of Variables and Attributes

#	Variable	Type	Len
2	First	Char	8
4	Gender	Char	8
1	ID	Char	8
3	Last	Char	8
5	Salary	Num	8
6	Title	Char	8

c) d)

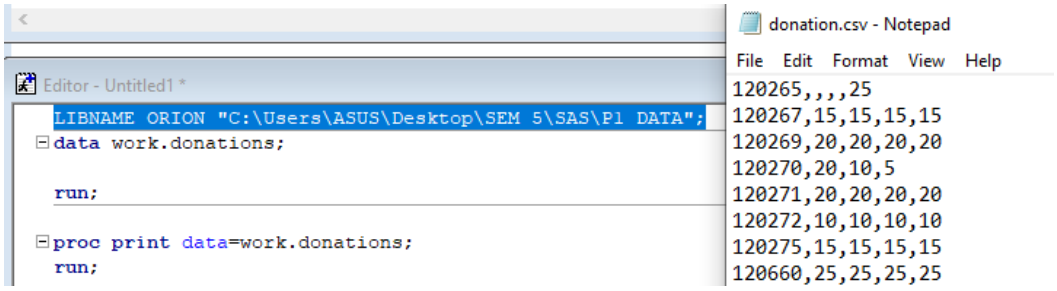
```
data work.managers2;
      LENGTH First $ Last $ Title $;
      INFILE "C:\Users\ASUS\Desktop\SEM 5\SAS\P1 DATA\managers2.dat" DLM='
09'x;
      input First $ Last $ Title $;
run;
proc contents data=work.managers2;
run;
proc print data=work.managers2;
var First Last Title;
run;
```

EXERCISE 8.4

LEVEL 1

7.

a)



b)

Alphabetic List of Variables and Attributes

#	Variable	Type	Len
1	EmpID	Num	8
2	Q1	Num	8
3	Q2	Num	8
4	Q3	Num	8
5	Q4	Num	8

c)

```
LIBNAME ORION "C:\Users\ASUS\Desktop\SEM 5\SAS\P1 DATA";
proc print data=orion.sales;
run;
data work.donations;
      LENGTH EmpID Q1 Q2 Q3 Q4;
      INFILE "C:\Users\ASUS\Desktop\SEM 5\SAS\P1 DATA\donations.csv"
DLM=',';
      input EmpID Q1 Q2 Q3 Q4;
run;
proc contents data=work.donations;
run;
proc print data=work.donations;
run;
```

CHALLENGE

9.

a)

```
LIBNAME ORION "C:\Users\ASUS\Desktop\SEM 5\SAS\P1 DATA";
proc print data=orion.sales;
run;
data work.salesmgmt;
      LENGTH ID Last $  Title $ HireDate Salary;
      INFILE "C:\Users\ASUS\Desktop\SEM 5\SAS\P1 DATA\sales.dat" DLM=' ';
      input ID Last $  Title $ HireDate Salary;
      format HireDate DATE9.;
run;
proc contents data=work.salesmgmt;
run;
proc print data=work.salesmgmt;
run;
```

CHAPTER 9

Exercises 9

1)
```
data work.increase;
   set orion.staff;
   increase=salary*0.1;
   Newsalary=salary+increase;
   BdayQtr=QTR(birth_date);
   keep employee_id salary Birth_date increase newsalary bdayqtr;
   label salary='Employee Annual Salary'
         birth_date='Employee Birth Date'
         bdayqtr='Bday Qtr';

run;

proc print data=work.increase label split='*';
      label salary='Employee*Annual*Salary'
            birth_date='Employee*Birth Date'
            bdayqtr='Bday*Qtr';
run;
```

Obs	Employee ID	Employee Annual Salary	Employee Birth Date	increase	Newsalary	Bday Qtr
1	120101	$163,040	18AUG1980	16304.0	179344.0	3
2	120102	$108,255	11AUG1973	10825.5	119080.5	3
3	120103	$87,975	22JAN1953	8797.5	96772.5	1
4	120104	$46,230	11MAY1958	4623.0	50853.0	2
5	120105	$27,110	21DEC1978	2711.0	29821.0	4
6	120106	$26,960	23DEC1948	2696.0	29656.0	4

2)
```
libname orion "C:\Users\Admin\Desktop\P1 DATA";
data work.birthday;
      set orion.customer;
      Bday2012=MDY(month(birth_date),day(birth_date),2012);
      BdayDOW2012=weekday(bday2012);
      Age2012=(Bday2012-birth_date)/365.25;
      keep customer_name birth_date Bday2012 BdayDOW2012 Age2012;
      format Bday2012 date9. age2012 12.;
run;
proc print data=work.birthday split='*';
      label birth_date='Birth_*Date'
                  BdayDOW2012='Bday*DOW2012';
run;
```

Obs	Customer Name	Birth_ Date	Bday2012	Bday DOW2012	Age2012
1	James Kvarniq	27JUN1978	27JUN2012	4	34
2	Sandrina Stephano	09JUL1983	09JUL2012	2	29
3	Cornelia Krahl	27FEB1978	27FEB2012	2	34
4	Karen Ballinger	18OCT1988	18OCT2012	5	24
5	Elke Wallstab	16AUG1978	16AUG2012	5	34
6	David Black	12APR1973	12APR2012	5	39

3)
```
libname orion "C:\Users\Admin\Desktop\P1 DATA";
data work.employees;
      set orion.sales;
      Fullname=CATX(separator,first_name,last_name);
      Yrs2012=INTCK('year',hire_date,'01Jan2012'd,'continuous');
      format hire_date ddmmyy10.;
      label yrs2012='Years of Employment as of 2012';
      keep Fullname hire_date yrs2012;
run;
proc print data=work.employees label split='*';
      label yrs2012='Years of*Employment*as of 2012';
run;
```

Obs	Hire_Date	Fullname	Years of Employment as of 2012
1	01/06/1993	Tom .Zhou	18
2	01/01/1978	Wilson .Dawes	34
3	01/01/1978	Irenie .Elvish	34
4	01/07/1982	Christina .Ngan	29
5	01/10/1989	Kimiko .Hotstone	22
6	01/03/1983	Lucian .Daymond	28

4.
```
libname orion "C:\Users\Admin\Desktop\P1 DATA";
data work.ordertype;
      set orion.orders;
      length method $12;
      if order_type=1 then method='Retail';
      else if order_type=2 then method='Catalog';
      else if order_type=3 then method='Internet';
      else method='Unknown';
      run;
proc print data=work.ordertype label split='*';
      var order_id order_type method;
      label order_type='Order_*Type';

run;
```

Obs	Order ID	Order_ Type	method
1	1230058123	1	Retail
2	1230080101	2	Catalog
3	1230106883	2	Catalog
4	1230147441	1	Retail
5	1230315085	1	Retail
6	1230333319	2	Catalog

5.

```
libname orion "C:\Users\Admin\Desktop\P1 DATA";
data work.region;
   set orion.supplier;
   keep Supplier_Name Country Discount DiscountType;
   if Country='US' or Country='CA' then do;
   Discount=0.10;
   DiscountType='Required';
   Region='North America';
end;
   else if Country~='CA' or Country~='US' then do;
   Discount=0.05;
   DiscountType='Optional';
   Region='Not North America';
   end;
run;

proc print data=work.region;
run;
```

Obs	Supplier_Name	Country	Discount	DiscountType
1	Scandinavian Clothing A/S	NO	0.05	Optional
2	Petterson AB	SE	0.05	Optional
3	Prime Sports Ltd	GB	0.05	Optional
4	Top Sports	DK	0.05	Optional
5	AllSeasons Outdoor Clothing	US	0.10	Required

LEVEL 2

6.

```
data work.season;
set orion.customer_dim;
length Promo2 $ 6;
if month(Customer_birth_date)='JAN' OR 'FEB' OR 'MAR'
then Promo='Winter';
else if month(Customer_birth_date)='APR' OR 'MAY' OR 'JUN'
then Promo='Spring';
else if month(Customer_birth_date)='JUL' OR 'AUG' OR 'SEP'
then Promo='Summer';
else Promo='Fall';
```

```
if customer_age>=18 and customer_age<=25
then Promo2='YA';
else if customer_age>=65
then Promo2='Senior';

keep Customer_FirstName Customer_LastName Customer_BirthDate Customer_Age
Promo Promo2;
run;

proc print data=work.season split='*';
var Customer_FirstName Customer_LastName Customer_BirthDate Customer_Age
Promo Promo2;
label customer_firstname='Customer_*FirstName'
customer_lastname='Customer_*LastName'
Customer_BirthDate='Customer_*BirthDate'
Customer_Age='Customer_*Age';
run;
```

```
NOTE: There were 77 observations read from the data set WORK.SEASON.
```

Obs	Customer_ FirstName	Customer_ LastName	Customer_ BirthDate	Customer_ Age	Promo	Promo2
1	James	Kvarniq	27JUN1978	33	Winter	
2	Sandrina	Stephano	09JUL1983	28	Winter	
3	Cornelia	Krahl	27FEB1978	33	Winter	
4	Karen	Ballinger	18OCT1988	23	Winter	YA
5	Elke	Wallstab	16AUG1978	33	Winter	
6	David	Black	12APR1973	38	Winter	
7	Markus	Sepke	21JUL1992	19	Winter	YA
8	Ulrich	Heyde	16JAN1943	68	Winter	Senior

7.

```
data work.ordertype;
set orion.orders;
DayOfWeek=weekday(order_date);

if order_type=1
then do Type='Retail Sale';
end;
else if order_type=2
then do Type='Catalog Sale';
SaleAds='Mail';
end;
else if order_type=3
then do Type='Internet Sale';
SaleAds='Email';
end;
drop order_type employee_id customer_id;
run;

proc print data=work.ordertype split='*';
var order_id order_date delivery_date Type saleads dayofweek;
label order_date='Order_*Date'
Delivery_date='Delivery_*Date'
SaleAds='Sale*Ads'
```

```
DayOfWeek='Day*Of*Week';
run;
```

```
NOTE: There were 490 observations read from the data set WORK.ORDERTYPE.
```

Obs	Order ID	Order_ Date	Delivery_ Date	Type	Sale Ads	Day Of Week
1	1230058123	11JAN2007	11JAN2007	Retail Sale		5
2	1230080101	15JAN2007	19JAN2007	Catalog Sal	Mail	2
3	1230106883	20JAN2007	22JAN2007	Catalog Sal	Mail	7
4	1230147441	28JAN2007	28JAN2007	Retail Sale		1
5	1230315085	27FEB2007	27FEB2007	Retail Sale		3

CHALLENGE

8.

```
data work.gifts;
set orion.nonsales;
length Gift1 Gift2 $ 20;
select (Gender);

when ('F') do;
Gift1='Scarf';
Gift2='Pedometer';
end;

when ('M') do;
Gift1='Gloves';
Gift2='Money Clips';
end;

otherwise do;
Gift1='Coffee';
Gift2='Calendar';
end;

end;
keep employee_id first last gender gift1 gift2;
run;

proc print data=work.gifts noobs;
run;
```

```
NOTE: There were 235 observations read from the data set WORK.GIFTS.
```

Employee_ID	First	Last	Gender	Gift1	Gift2
120101	Patrick	Lu	M	Gloves	Money Clips
120104	Kareen	Billington	F	Scarf	Pedometer
120105	Liz	Povey	F	Scarf	Pedometer
120106	John	Hornsey	M	Gloves	Money Clips
120107	Sherie	Sheedy	F	Scarf	Pedometer
120108	Gladys	Gromek	F	Scarf	Pedometer