



## Exercises 4

For these exercises, use SAS data sets stored in a permanent SAS data library.

Fill in the blank with the location of your SAS data library. Submit the LIBNAME statement to assign the libref **ia** to the SAS data library.

```
libname ia '_____';
```

### 1. Printing All Variables and Observations

Produce a list report that displays all the variables and observations in the **ia.passngrs** data set. Show column totals for the **FClass**, **BClass**, and **EClass** variables.

#### Partial SAS Output

The SAS System						
Obs	Flight ID	Dest	Depart	FClass	BClass	EClass
1	IA01802	SEA	15101	10	9	132
2	IA01804	SEA	15101	11	12	111
3	IA02901	HNL	15101	13	24	138
4	IA03100	ANC	15101	13	22	150
5	IA03101	ANC	15101	14	.	133
6	IA01802	SEA	15102	12	11	126
7	IA01804	SEA	15102	12	8	119
8	IA02901	HNL	15102	14	25	132
9	IA03100	ANC	15102	16	26	143
10	IA01802	SEA	15103	12	13	115
11	IA01804	SEA	15103	12	12	136
12	IA02901	HNL	15103	12	21	155
13	IA03100	ANC	15103	14	18	137
.						
.						
.						
20	IA01804	SEA	15105	11	18	104
21	IA02901	HNL	15105	13	14	145
22	IA03100	ANC	15105	15	22	99
23	IA01802	SEA	15106	12	15	106
24	IA01804	SEA	15106	10	15	111
25	IA02901	HNL	15106	13	24	137
26	IA03100	ANC	15106	15	16	137
27	IA01802	SEA	15107	12	17	131
28	IA01804	SEA	15107	10	13	113
29	IA02901	HNL	15107	13	19	144
30	IA03100	ANC	15107	15	23	105
				=====	=====	=====
				376	485	3859

## Selecting Variables and Observations

- a. Use the `ia.passngrs` data set to produce a list report that displays only flights to Seattle (`Dest='SEA'`).

### SAS Output

The SAS System						
Obs	Flight ID	Dest	Depart	FClass	BClass	EClass
1	IA01802	SEA	15101	10	9	132
2	IA01804	SEA	15101	11	12	111
6	IA01802	SEA	15102	12	11	126
7	IA01804	SEA	15102	12	8	119
10	IA01802	SEA	15103	12	13	115
11	IA01804	SEA	15103	12	12	136
14	IA01802	SEA	15104	10	18	128
15	IA01804	SEA	15104	11	17	105
19	IA01802	SEA	15105	11	14	131
20	IA01804	SEA	15105	11	18	104
23	IA01802	SEA	15106	12	15	106
24	IA01804	SEA	15106	10	15	111
27	IA01802	SEA	15107	12	17	131
28	IA01804	SEA	15107	10	13	113

- b. Alter the program so that only the variables `FlightID`, `Depart`, `FClass`, `BClass`, and `EClass` are displayed. Suppress the observation number.

### SAS Output

The SAS System					
Flight ID	Depart	FClass	BClass	EClass	
IA01802	15101	10	9	132	
IA01804	15101	11	12	111	
IA01802	15102	12	11	126	
IA01804	15102	12	8	119	
IA01802	15103	12	13	115	
IA01804	15103	12	12	136	
IA01802	15104	10	18	128	
IA01804	15104	11	17	105	
IA01802	15105	11	14	131	
IA01804	15105	11	18	104	
IA01802	15106	12	15	106	
IA01804	15106	10	15	111	
IA01802	15107	12	17	131	
IA01804	15107	10	13	113	

- c. Alter the program so that only the flights to Seattle with at least 120 **EClass** passengers but fewer than 15 **BClass** passengers are displayed.

### SAS Output

The SAS System				
Flight ID	Depart	FClass	BClass	EClass
IA01802	15101	10	9	132
IA01802	15102	12	11	126
IA01804	15103	12	12	136
IA01802	15105	11	14	131

## 2. Printing Reports with Page Breaks

Create the listing described below using the **ia.passngrs** data set.

- Sequence the report in ascending order by destination (**Dest**) and place the listing for each destination on a separate page.
- Print only the variables **Depart**, **FClass**, **BClass**, and **EClass**.
- Display column totals and subtotals for the variables **FClass**, **BClass**, and **EClass**.

### SAS Output

The SAS System					1
----- Dest=ANC -----					
Obs	Depart	FClass	BClass	EClass	
1	15101	13	22	150	
2	15101	14	.	133	
3	15102	16	26	143	
4	15103	14	18	137	
5	15104	14	17	144	
6	15104	13	.	142	
7	15105	15	22	99	
8	15106	15	16	137	
9	15107	15	23	105	
-----	-----	-----	-----	-----	
Dest		129	144	1190	

The SAS System					2
----- Dest=HNL -----					
Obs	Depart	FClass	BClass	EClass	
10	15101	13	24	138	
11	15102	14	25	132	
12	15103	12	21	155	
13	15104	13	22	150	
14	15105	13	14	145	
15	15106	13	24	137	
16	15107	13	19	144	
----		-----	-----	-----	
Dest		91	149	1001	

The SAS System					3
----- Dest=SEA -----					
Obs	Depart	FClass	BClass	EClass	
17	15101	10	9	132	
18	15101	11	12	111	
19	15102	12	11	126	
20	15102	12	8	119	
21	15103	12	13	115	
22	15103	12	12	136	
23	15104	10	18	128	
24	15104	11	17	105	
25	15105	11	14	131	
26	15105	11	18	104	
27	15106	12	15	106	
28	15106	10	15	111	
29	15107	12	17	131	
30	15107	10	13	113	
----		-----	-----	-----	
Dest		156	192	1668	
		=====	=====	=====	
		376	485	3859	

For these exercises, use SAS data sets stored in a permanent SAS data library.

Fill in the blank with the location of your SAS data library. **If you have started a new SAS session since the previous lab**, submit the LIBNAME statement to assign the libref **ia** to the SAS data library.

```
libname ia '_____';
```

### 3. Identifying Observations and Using Page Breaks

Create the listing described below using the **ia.passngrs** data set.

- Sequence the report in ascending order by destination (**Dest**) and place the listing for each destination on a separate page.
- Only print the variables **Dest**, **Depart**, **FClass**, **BClass**, and **EClass**. Display **Dest** as the leftmost column, suppress the observation number, and suppress redundant values of the **Dest** variable.
- Display column totals and subtotals for the variables **FClass**, **BClass**, and **EClass**.

#### SAS Output

The SAS System					1
Dest	Depart	FClass	BClass	EClass	
ANC	15101	13	22	150	
	15101	14	.	133	
	15102	16	26	143	
	15103	14	18	137	
	15104	14	17	144	
	15104	13	.	142	
	15105	15	22	99	
	15106	15	16	137	
	15107	15	23	105	
----		-----	-----	-----	
ANC		129	144	1190	

The SAS System					2
Dest	Depart	FClass	BClass	EClass	
HNL	15101	13	24	138	
	15102	14	25	132	
	15103	12	21	155	
	15104	13	22	150	
	15105	13	14	145	
	15106	13	24	137	
	15107	13	19	144	
	----		-----	-----	-----
HNL		91	149	1001	

The SAS System					3
Dest	Depart	FClass	BClass	EClass	
SEA	15101	10	9	132	
	15101	11	12	111	
	15102	12	11	126	
	15102	12	8	119	
	15103	12	13	115	
	15103	12	12	136	
	15104	10	18	128	
	15104	11	17	105	
	15105	11	14	131	
	15105	11	18	104	
	15106	12	15	106	
	15106	10	15	111	
	15107	12	17	131	
	15107	10	13	113	
----		-----	-----	-----	
SEA		156	192	1668	
		=====	=====	=====	
		376	485	3859	

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```
libname ia '_____';
```

#### 4. Using Special WHERE Statement Operators

Create the listing described below using the **ia.person1** data set.

- Only print the variables **LName** and **FName**.
- Only display observations where the value of **LName** begins with **BR**.

#### SAS Output

The SAS System		
Obs	LName	FName
13	BRADLEY	JEREMY
14	BRADY	CHRISTINE
15	BROWN	JASON

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```
libname ia '_____';
```

## 5. Enhanced List Reports

Create the listing described below using the **ia.passngrs** data set.

- Do not display the date and time the SAS session began, set the line size to 64, and start the page number at 1.
- Sequence the report in ascending order by destination (**Dest**) and place the listing for each destination on a separate page.
- Print only the variables **Depart**, **FClass**, **BClass**, and **EClass**.
- Display column totals for the variables **FClass**, **BClass**, and **EClass**.
- Place the title **San Francisco Passenger Data** on the report.
- Display the **Depart** values with the DATE9. format and **FClass**, **BClass**, and **EClass** values with commas and zero decimal places.
- Use the labels below to replace the variable names.

Variable	Label
Dest	Destination
Depart	Departure Date
FClass	First Class
BClass	Business Class
EClass	Economy Class



Be sure to save your program. You will use your solution to this exercise as the basis of a subsequent workshop.

## SAS Output

San Francisco Passenger Data					1
----- Destination=ANC -----					
Obs	Departure Date	First Class	Business Class	Economy Class	
1	06MAY2001	13	22	150	
2	06MAY2001	14	.	133	
3	07MAY2001	16	26	143	
4	08MAY2001	14	18	137	
5	09MAY2001	14	17	144	
6	09MAY2001	13	.	142	
7	10MAY2001	15	22	99	
8	11MAY2001	15	16	137	
9	12MAY2001	15	23	105	
-----		-----	-----	-----	
Dest		129	144	1,190	

San Francisco Passenger Data					2
----- Destination=HNL -----					
Obs	Departure Date	First Class	Business Class	Economy Class	
10	06MAY2001	13	24	138	
11	07MAY2001	14	25	132	
12	08MAY2001	12	21	155	
13	09MAY2001	13	22	150	
14	10MAY2001	13	14	145	
15	11MAY2001	13	24	137	
16	12MAY2001	13	19	144	
-----		-----	-----	-----	
Dest		91	149	1,001	



San Francisco Passenger Data					3
----- Destination=SEA -----					
Obs	Departure Date	First Class	Business Class	Economy Class	
17	06MAY2001	10	9	132	
18	06MAY2001	11	12	111	
19	07MAY2001	12	11	126	
20	07MAY2001	12	8	119	
21	08MAY2001	12	13	115	
22	08MAY2001	12	12	136	
23	09MAY2001	10	18	128	
24	09MAY2001	11	17	105	
25	10MAY2001	11	14	131	
26	10MAY2001	11	18	104	
27	11MAY2001	12	15	106	
28	11MAY2001	10	15	111	
29	12MAY2001	12	17	131	
30	12MAY2001	10	13	113	
-----					
Dest		156	192	1,668	
=====					
		376	485	3,859	

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```
libname ia '_____';
```

## 6. Creating User-defined Formats

Create a format for the variable **Dest** that assigns

- **Anchorage** to the value **ANC**
- **Honolulu** to the value **HNL**
- **Seattle** to the value **SEA**.

## 7. Applying User-defined Formats

Alter the program you wrote in the earlier **Enhanced List Reports** exercise to use the format you created in the previous exercise to display city names instead of airport codes. Reset the starting page number for the output to 1.



Be sure to save your modified program. You will use your solution to this exercise as the basis of a subsequent workshop.

## SAS Output

San Francisco Passenger Data					1
----- Destination=Anchorage -----					
Obs	Departure Date	First Class	Business Class	Economy Class	
1	06MAY2001	13	22	150	
2	06MAY2001	14	.	133	
3	07MAY2001	16	26	143	
4	08MAY2001	14	18	137	
5	09MAY2001	14	17	144	
6	09MAY2001	13	.	142	
7	10MAY2001	15	22	99	
8	11MAY2001	15	16	137	
9	12MAY2001	15	23	105	
-----		-----	-----	-----	
Dest		129	144	1,190	

San Francisco Passenger Data					2
----- Destination=Honolulu -----					
Obs	Departure Date	First Class	Business Class	Economy Class	
10	06MAY2001	13	24	138	
11	07MAY2001	14	25	132	
12	08MAY2001	12	21	155	
13	09MAY2001	13	22	150	
14	10MAY2001	13	14	145	
15	11MAY2001	13	24	137	
16	12MAY2001	13	19	144	
-----		-----	-----	-----	
Dest		91	149	1,001	

San Francisco Passenger Data					3
----- Destination=Seattle -----					
Obs	Departure Date	First Class	Business Class	Economy Class	
17	06MAY2001	10	9	132	
18	06MAY2001	11	12	111	
19	07MAY2001	12	11	126	
20	07MAY2001	12	8	119	
21	08MAY2001	12	13	115	
22	08MAY2001	12	12	136	
23	09MAY2001	10	18	128	
24	09MAY2001	11	17	105	
25	10MAY2001	11	14	131	
26	10MAY2001	11	18	104	
27	11MAY2001	12	15	106	
28	11MAY2001	10	15	111	
29	12MAY2001	12	17	131	
30	12MAY2001	10	13	113	
-----		-----	-----	-----	
Dest		156	192	1,668	
		=====	=====	=====	
		376	485	3,859	

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```
libname ia '_____';
```

## 8. Creating HTML Reports

Alter the program you wrote in the earlier **Applying User-defined Formats** exercise to create an HTML report using ODS.

### San Francisco Passenger Data

Destination=Anchorage

Obs	Departure Date	First Class	Business Class	Economy Class
1	06MAY2001	13	22	150
2	06MAY2001	14	.	133
3	07MAY2001	16	26	143
4	08MAY2001	14	18	137
5	09MAY2001	14	17	144
6	09MAY2001	13	.	142
7	10MAY2001	15	22	99
8	11MAY2001	15	16	137
9	12MAY2001	15	23	105
<b>Dest</b>		<b>129</b>	<b>144</b>	<b>1,190</b>

### San Francisco Passenger Data

Destination=Honolulu

Obs	Departure Date	First Class	Business Class	Economy Class
10	06MAY2001	13	24	138
11	07MAY2001	14	25	132
12	08MAY2001	12	21	155
13	09MAY2001	13	22	150
14	10MAY2001	13	14	145
15	11MAY2001	13	24	137
16	12MAY2001	13	19	144
<b>Dest</b>		<b>91</b>	<b>149</b>	<b>1,001</b>