STAT 506 Homework 3

Zeru Zhou

Question 1

Code:

```
libname pg1 base "E:\SAS\PG1\data" ;

data eu_occ2014;
set pg1.eu_occ;
where substr(YearMon,1,4)="2014";
format Hotel ShortStay Camp COMMA17.;
drop Geo;
run;

proc print data = eu_occ2014 (OBS=6);
run;
```

Output:

The SAS System

Obs	Country	YearMon	Hotel	ShortStay	Camp
1	Austria	2014M12	7,180,250	1,580,808	127,138
2	Austria	2014M11	3,372,024	591,386	16,591
3	Austria	2014M10	5,374,878	895,056	146,412
4	Austria	2014M09	7,169,364	1,269,970	427,523
5	Austria	2014M08	10,872,383	2,790,575	1,480,369
6	Austria	2014M07	8,709,923	2,275,520	1,416,192

Question 2

Code:

```
data np_summary_update;
set pg1.np_summary;
SqMiles = Acres/640;
Camping = sum(OtherCamping, TentCampers, RVCampers, BackcountryCampers);
format SqMiles Camping COMMA.;
keep  SqMiles Camping ParkName;
run;

proc print data = np_summary_update (OBS=10);
run;
```

Output:

The SAS System

Obs	ParkName	SqMiles	Camping
1	Cape Krusenstern National Monument	1,014	6,375
2	Kenai Fjords National Park	1,046	2,162
3	Kobuk Valley National Park	2,735	7,050
4	Yukon-Charley Rivers National Preserve	3,943	3,063
5	Bering Land Bridge National Preserve	4,215	1,123
6	Noatak National Preserve	10,292	5,500
7	Alibates Flint Quarries National Monument	2	0
8	Aztec Ruins National Monument	0	0
9	Bandelier National Monument	53	10,533
10	Canyon De Chelly National Monument	131	11,918

Question 3

(a)

Code:

```
proc freq data = pg1.np_summary;
tables Type;
run;
```

(b)

Code:

```
data park_type;
set pg1.np_summary;
length Parktype $ 8;
if Type = "NP" then ParkType = "Park";
else if Type = "NM" then ParkType = "Monument";
else if Type = "NS" then ParkType = "Seashore";
else if Type in ("RVR" "RIVERWAYS") then ParkType = "River";
else Parktype = "Preserve";
run;
```

Log notes:

```
49   data park_type;
50   set pg1.np_summary;
51   length Parktype $ 8;
52   if Type = "NP" then ParkType = "Park";
53   else if Type = "NM" then ParkType = "Monument";
54   else if Type = "NS" then ParkType = "Seashore";
55   else if Type in ("RVR" "RIVERWAYS") then ParkType = "River";
56   else Parktype = "Preserve";
57   run;

NOTE: There were 135 observations read from the data set PG1.NP_SUMMARY.
NOTE: The data set WORK.PARK_TYPE has 135 observations and 11 variables.
NOTE: DATA statement used (Total process time):
      real time           0.01 seconds
      cpu time            0.01 seconds
```

(c)

Code:

```
proc freq data = park_type;
tables ParkType;
run;
```

Output:

The SAS System

The FREQ Procedure

Parktype	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Monument	63	46.67	63	46.67
Park	51	37.78	114	84.44
Preserve	8	5.93	122	90.37
River	3	2.22	125	92.59
Seashore	10	7.41	135	100.00

Question 4

Code:

```
title1 "Class Overview";
title3 "Birth Year versus Sex";
footnote "Zeru Zhou";
proc freq data = pg1.class_birthdate;
tables birthdate * sex / nocol;
format birthdate year.;
label birthdate = "Year";
run;
title;
footnote;
```

Output:

Class Overview

Birth Year versus Sex

The FREQ Procedure

Frequency Percent Row Pct	Table of Birthdate by Sex		
	Sex		
Birthdate(Year)	F	M	Total
2002	0 0.00 0.00	1 5.26 100.00	1 5.26
2003	2 10.53 50.00	2 10.53 50.00	4 21.05
2004	2 10.53 50.00	2 10.53 50.00	4 21.05
2005	2 10.53 66.67	1 5.26 33.33	3 15.79
2006	2 10.53 40.00	3 15.79 60.00	5 26.32
2007	1 5.26 50.00	1 5.26 50.00	2 10.53
Total	9 47.37	10 52.63	19 100.00

Zeru Zhou

Question 5

(a)

Label part of the output:

Alphabetic List of Variables and Attributes				
#	Variable	Type	Len	Label
6	Camp	Num	8	Nights Spent at Camp Grounds or RV Parks
2	Country	Char	40	Reporting Country
1	Geo	Char	2	Country Code
4	Hotel	Num	8	Nights Spent at Hotels
5	ShortStay	Num	8	Nights Spent at Short Stay Accommodations
3	YearMon	Char	8	Year Month

(b)

Code:

```
proc print data = pg1.eu_occ (OBS = 6) label;
label ShortStay = "Nights Spent at Short Stays";
run;
```

Output:

Obs	Country Code	Reporting Country	Year Month	Nights Spent at Hotels	Nights Spent at Short Stays	Nights Spent at Camp Grounds or RV Parks
1	AT	Austria	2017M09	7768564	1453530	524121
2	AT	Austria	2017M08	11353432	3140217	1997801
3	AT	Austria	2017M07	10124106	2836425	1752605
4	AT	Austria	2017M06	7391827	1568683	914560
5	AT	Austria	2017M05	5068884	1054870	359560
6	AT	Austria	2017M04	5647811	1360315	171094

Question 6

(a)

Code:

```
proc means data = pg1.eu_occ noprint;
var hotel;
class country;
output out = med_hotel median = MedianHotel;
run;
```

Log notes:

```
3    proc means data = pg1.eu_occ noprint;
4    var hotel;
5    class country;
6    output out = med_hotel median = MedianHotel;
7    run;

NOTE: There were 4785 observations read from the data set PG1.EU_OCC.
NOTE: The data set WORK.MED_HOTEL has 30 observations and 4 variables.
NOTE: PROCEDURE MEANS used (Total process time):
      real time           0.03 seconds
      cpu time            0.00 seconds
```

(b)

Code:

```
proc sort data = med_hotel;
where Country is not missing;
by descending MedianHotel;
run;
```

Log notes:

```
9    proc sort data = med_hotel;
10   where Country is not missing;
11   by descending MedianHotel;
12   run;

NOTE: There were 29 observations read from the data set WORK.MED_HOTEL.
      WHERE Country is not null;
NOTE: The data set WORK.MED_HOTEL has 29 observations and 4 variables.
NOTE: PROCEDURE SORT used (Total process time):
      real time           0.01 seconds
      cpu time            0.00 seconds
```

(c)

Code:

```
data med_hotel;
set med_hotel;
drop _TYPE_ _FREQ_;
label MedianHotel = "Median of Nights Spent at Hotels";
run;
```

Log notes:

```
14   data med_hotel;
15   set med_hotel;
16   drop _TYPE_ _FREQ_;
17   label MedianHotel = "Median of Nights Spent at Hotels";
18   run;

NOTE: There were 29 observations read from the data set WORK.MED_HOTEL.
NOTE: The data set WORK.MED_HOTEL has 29 observations and 2 variables.
NOTE: DATA statement used (Total process time):
      real time           0.02 seconds
      cpu time            0.00 seconds
```

(d)

Code:

```
proc print data = med_hotel(OBS=6) label;
run;
```

Output:

The SAS System

Obs	Reporting Country	Median of Nights Spent at Hotels
1	Spain	22298622
2	Germany	19774500
3	Italy	17008159
4	France	16776595
5	United Kingdom	14340174
6	Austria	6794087