STAT 506 HW 4

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Question 1

Code:

```sas
libname pg1 base "E:\SAS\PG1\data";
%let outpath = E:\SAS\PG1\output;

data ToCSV ;
  set pg1.storm_range;
  length Speeds $ 6;
  if mean(Wind1, Wind2, Wind3, Wind4)>90 then do;
      Speeds = "High";
      Name = upcase(Name);
      end;
  else if mean(Wind1, Wind2, Wind3, Wind4)>50 then do;
      Speeds = "Medium";
      Name = propcase(Name);
      end;
  else do;
      Speeds = "Low";
      Name = lowcase(Name);
      end;

proc export data = ToCSV  outfile = "&outpath/ToCSV.csv" dbms = 'csv';
  run;
```

First five rows:

```
Season,Basin,Name,Wind1,Wind2,Wind3,Wind4,Speeds
1980,EP,AGATHA,100,95,90,85,High
1980,EP,blas,50,50,50,45,Low
1980,EP,Celia,65,65,65,65,Medium
1980,EP,darby,45,45,35,30,Low
1980,EP,estelle,40,35,35,25,Low
```

Question 2

Code:

```sas
libname sby xlsx "&outpath/StormsByYear.xlsx";

data sby.Storms1980s;
  set pg1.storm_final;
  where Season between 1980 and 1989;
  Decade = "1980s";
  run;

data sby.Storms1990s;
  set pg1.storm_final;
  where Season between 1990 and 1999;
  Decade = "1990s";
  run;

libname sby clear;
```

Log notes:

```
97    libname sby xlsx "&outpath/StormsByYear.xlsx";
NOTE: Libref SBY was successfully assigned as follows:
      Engine:        XLSX
      Physical Name: E:\SAS\PG1\output/StormsByYear.xlsx
98
99    data sby.Storms1980s;
100   set pg1.storm_final;
101   where Season between 1980 and 1989;
102   Decade = "1980s";
103   run;

NOTE: There were 815 observations read from the data set PG1.STORM_FINAL.
      WHERE (Season>=1980 and Season<=1989);
NOTE: The data set SBY.Storms1980s has 815 observations and 16 variables.
NOTE: The export data set has 815 observations and 16 variables.
NOTE: DATA statement used (Total process time):
      real time           0.06 seconds
      cpu time            0.04 seconds


104
105   data sby.Storms1990s;
106   set pg1.storm_final;
107   where Season between 1990 and 1999;
108   Decade = "1990s";
109   run;

NOTE: There were 793 observations read from the data set PG1.STORM_FINAL.
      WHERE (Season>=1990 and Season<=1999);
NOTE: The data set SBY.Storms1990s has 793 observations and 16 variables.
NOTE: The export data set has 793 observations and 16 variables.
NOTE: DATA statement used (Total process time):
      real time           0.06 seconds
      cpu time            0.06 seconds


110
111   libname sby clear;
NOTE: Libref SBY has been deassigned.
```

Question 3

Code:

```sas
ODS EXCEL file = "&outpath/StormStats.xlsx" style = snow options(sheet_name = "South Pacific Summary");
ODS noproctitle;
proc means data=pg1.storm_detail maxdec=0 median max;
  class Season;
  var Wind;
  where Basin='SP' and Season in (2014, 2015, 2016);
run;

ODS EXCEL options(sheet_name = "Detail");
proc print data=pg1.storm_detail noobs;
  where Basin='SP' and Season in (2014, 2015, 2016);
  by Season;
run;

ODS proctitle;
ODS EXCEL close;
```

Log note:

```
128  ODS EXCEL file = "&outpath/StormStats.xlsx" style = snow options(sheet_name = "South Pacific
128! Summary");
129  ODS noproctitle;
130  proc means data=pg1.storm_detail maxdec=0 median max;
131   class Season;
132   var Wind;
133   where Basin='SP' and Season in (2014, 2015, 2016);
134  run;

NOTE: There were 1132 observations read from the data set PG1.STORM_DETAIL.
      WHERE (Basin='SP') and Season in (2014, 2015, 2016);
NOTE: PROCEDURE MEANS used (Total process time):
      real time           0.02 seconds
      cpu time            0.03 seconds


135
136  ODS EXCEL options(sheet_name = "Detail");
137  proc print data=pg1.storm_detail noobs;
138   where Basin='SP' and Season in (2014, 2015, 2016);
139   by Season;
140  run;

NOTE: There were 1132 observations read from the data set PG1.STORM_DETAIL.
      WHERE (Basin='SP') and Season in (2014, 2015, 2016);
NOTE: PROCEDURE PRINT used (Total process time):
      real time           2.22 seconds
      cpu time            2.14 seconds


141
142  ODS proctitle;
143  ODS EXCEL close;
NOTE: Writing EXCEL file: E:\SAS\PG1\output\StormStats.xlsx
```

Question 4

Code:

```
ODS PDF file = "&outpath/StormSummary.pdf" style = Journal ;
options orientation = landscape;
ods layout gridded rows = 1 columns = 2;
ods region;
title "2016 Northern Atlantic Storms";
proc print data=pg1.storm_final noobs;
var name StartDate MaxWindMPH StormLength;
where Basin="NA" and Season=2016;
format StartDate monyy7. ;
run;
title;
ods region;
ods noproctitle;
proc means data=pg1.storm_final min mean max maxdec=1;
var MaxWindMPH StormLength;
where Basin="NA" and Season=2016;
class StartDate;
format StartDate monname. ;
run;

ods layout end;
options orientation = portrait;
ODS PDF close;
```

Output:

The SAS System

2016 Northern Atlantic Storms

Name	StartDate	MaxWindMPH	StormLength
ALEX	JAN2016	86	10
BONNIE	MAY2016	46	13
COLIN	JUN2016	58	3
DANIELLE	JUN2016	46	3
EARL	AUG2016	86	4
FIONA	AUG2016	52	8
GASTON	AUG2016	121	13
EIGHT	AUG2016	35	5
HERMINE	AUG2016	81	11
IAN	SEP2016	63	5
KARL	SEP2016	69	14
JULIA	SEP2016	52	8
LISA	SEP2016	52	7
MATTHEW	SEP2016	167	12
NICOLE	OCT2016	138	15
OTTO	NOV2016	115	8

StartDate	N Obs	Variable	Minimum	Mean	Maximum
January	1	MaxWindMPH	86.0	86.0	86.0
		StormLength	10.0	10.0	10.0
May	1	MaxWindMPH	46.0	46.0	46.0
		StormLength	13.0	13.0	13.0
June	2	MaxWindMPH	46.0	52.0	58.0
		StormLength	3.0	3.0	3.0
August	5	MaxWindMPH	35.0	75.0	121.0
		StormLength	4.0	8.2	13.0
September	5	MaxWindMPH	52.0	80.6	167.0
		StormLength	5.0	9.2	14.0
October	1	MaxWindMPH	138.0	138.0	138.0
		StormLength	15.0	15.0	15.0
November	1	MaxWindMPH	115.0	115.0	115.0
		StormLength	8.0	8.0	8.0

Question 5

Code:

```
proc sql;
  select ParkName, propcase(Location) as Location, Count*28 as EntranceFees format = DOLLAR10.
  from pg1.np_traffic
  order by ParkName, EntranceFees desc;
  quit;
```

Output:

Park Name	Location	EntranceFees
Abraham Lincoln Birthplace National Historical Park	Traffic Count At Main Entrance	$36,456
Abraham Lincoln Birthplace National Historical Park	Traffic Count At Knob Creek	$13,888
Abraham Lincoln Birthplace National Historical Park	Traffic Count At Picnic Parking Lot	$10,108
Acadia National Park	Traffic Count At Sand Beach	$112,812
Acadia National Park	Traffic Count At Schoodic	$54,600

Question 6

Code:

```
proc sql;
  create table pg1.storm_2017join as
  select Year, ps.Basin, BasinName, Name, StartDate format = mmddyy10., EndDate format = mmddyy10.
  from pg1.storm_2017 as ps inner join pg1.storm_basincodes as pb
  on ps.Basin = pb.Basin
  where MaxWindMPH > 115;
  quit;

proc print data = pg1.storm_2017join ;
  run;
```

Output:

Obs	Year	Basin	BasinName	Name	StartDate	EndDate
1	2017	NA	North Atlantic	HARVEY	08/17/2017	09/01/2017
2	2017	NA	North Atlantic	IRMA	08/30/2017	09/12/2017
3	2017	NA	North Atlantic	JOSE	09/05/2017	09/22/2017
4	2017	NA	North Atlantic	MARIA	09/16/2017	09/30/2017
5	2017	EP	East Pacific	FERNANDA	07/12/2017	07/22/2017
6	2017	EP	East Pacific	KENNETH	08/18/2017	08/23/2017
7	2017	SP	South Pacific	DEBBIE	03/23/2017	03/30/2017
8	2017	SI	South Indian	ERNIE	04/05/2017	04/10/2017
9	2017	SP	South Pacific	DONNA	05/01/2017	05/10/2017