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STAT506

HW6

1. Changing Variable Types

Show all your new code and screenshots of both (i) the last table from the descriptor portion and (ii) the data portion.

```
data bad;  
input date $10. zip;  
datalines;  
2023/10/31 47907  
2023/11/23 47906  
;  
  
data better;  
set bad(rename=(date=chardate zip=numzip));  
date=input(chardate, yymmdd10.);  
zip=put(numzip, date9.);  
  
run;  
  
proc contents data=better;  
run;  
  
proc print data=better;  
run;
```

Alphabetic List of Variables and Attributes			
#	Variable	Type	Len
1	chardate	Char	10
3	date	Num	8
2	numzip	Num	8
4	zip	Char	9

Obs	chardate	numzip	date	zip
1	2023/10/31	47907	23314	01MAR2091
2	2023/11/23	47906	23337	28FEB2091

2. Creating Custom Permanent Formats

Show all your code and a screenshot of the PROC FREQ output.

```
options fmtsearch=(pg2.hwformats);
proc format library=pg2.hwformats;
    value $SOMEREG 'MW'='Midwest'
                  'NE'='Northeast'
                  'SE'='Southeast'
                  other='All other Regions';
    value PARKSIZE low-<30000='Small'
                  30000-<600000='Average'
                  600000-high='Large';
run;

proc freq data=pg2.np_summary;
    table Reg*Acres;
    format Reg $SOMEREG. Acres PARKSIZE.;
run;
```

The FREQ Procedure

Frequency Percent Row Pct Col Pct	Table of Reg by Acres				
	Reg(Region Code)	Acres(Gross Acres)			
		Small	Average	Large	Total
All other Regions		32	35	15	82
		23.70	25.93	11.11	60.74
		39.02	42.68	18.29	
		51.61	61.40	93.75	
Midwest		10	8	0	18
		7.41	5.93	0.00	13.33
		55.56	44.44	0.00	
		16.13	14.04	0.00	
Northeast		8	5	0	13
		5.93	3.70	0.00	9.63
		61.54	38.46	0.00	
		12.90	8.77	0.00	
Southeast		12	9	1	22
		8.89	6.67	0.74	16.30
		54.55	40.91	4.55	
		19.35	15.79	6.25	
Total		62	57	16	135
		45.93	42.22	11.85	100.00

3. Creating a Custom Date Format Using an Existing Format

Show your code and a screenshot of the PROC FREQ output.

```

proc format;
  value DECADE '01JAN2000'd-'31DEC2009'd='2000-2009'
               '01JAN2010'd-'31DEC2017'd='2010-2017'
               '01JAN2018'd-'31MAR2018'd='1st Quarter 2018'
               '01APR2018'd-high=[MMDDYY10.];
run;
proc freq data=pg2.np_weather;
  table Date;
  format Date DECADE.;
  where Prcp > 0.35;
run;

```

The FREQ Procedure

Date				
Date	Frequency	Percent	Cumulative Frequency	Cumulative Percent
2000-2009	496	51.56	496	51.56
2010-2017	455	47.30	951	98.86
1st Quarter 2018	7	0.73	958	99.58
04/02/2018	1	0.10	959	99.69
04/08/2018	1	0.10	960	99.79
04/12/2018	1	0.10	961	99.90
04/13/2018	1	0.10	962	100.00

4. Creating a Custom Format from a Table

Show all your new code and a screenshot of the new PROC FREQ output.

```

* Create an output table named typfmtout from the existing $TypCode format;
proc format library=work cntlout=typfmtout;
  select $TypCode;
run;

proc print data=pg2.np_newcodes;
run;

data typfmt_update;
  set typfmtout pg2.np_newcodes;
  fmtname='$TypCode';
  keep fmtname start label;
run;

proc format cntlin=typfmt_update;
run;
* run the original proc freq;
proc freq data=pg2.np_summary;
  table Type / nocum;
  format Type $TypCode.;
run;

```

The FREQ Procedure

Type	Frequency	Percent
National Monument	63	46.67
National Park	52	38.52
National Preserve	7	5.19
National Seashore	10	7.41
National River	3	2.22

5. Merging Tables

Show all your code and a screenshot of the PROC PRINT output.

```
proc sort data=pg2.np_acres out=sort_acres;
    by ParkCode;
run;

data first_merge;
    merge pg2.np_2016traffic(rename=(Code=ParkCode) in=a) sort_acres(in=b);
    by ParkCode;
    if month=11 and a and b;
run;

proc sort data=first_merge;
    by Region;
run;

proc sort data=pg2.np_types_regions(rename=(Label=Region)) out=region_sort;
    by Region;
run;

data nov_merged;
    merge first_merge(in=a) region_sort(in=b);
    by Region;
    if a and b;
    drop Year Month FmtName;
run;

proc print data=nov_merged(obs=10);
run;
```

Obs	ParkCode	MonthCount	Region	ParkName	State	GrossAcres	Start
1	KATM	0	Alaska	KATMAI NP & PRES	AK	4,093,228.13	A
2	KEFJ	0	Alaska	KENAI FJORDS NP	AK	669,650.05	A
3	AMIS	19,510	Intermountain	AMISTAD NRA	TX	58,500.00	IM
4	ARCH	28,693	Intermountain	ARCHES NP	UT	76,678.98	IM
5	BAND	0	Intermountain	BANDELIER NM	NM	33,676.67	IM
6	BIBE	15,988	Intermountain	BIG BEND NP	TX	801,163.21	IM
7	BICA	5,166	Intermountain	BIGHORN CANYON NRA	WY	120,296.22	IM
8	BITH	2,865	Intermountain	BIG THICKET N PRESERVE	TX	112,500.81	IM
9	BLCA	3,759	Intermountain	BLACK CANYON OF GUNNISON NP	CO	30,749.75	IM
10	BRCA	26,777	Intermountain	BRYCE CANYON NP	UT	35,835.08	IM