

Task 1

SAS® Studio

Frequency
Percent

Table of Type by Region								
Type	Region							Total
	Intermountain	Northeast	Southeast	Pacific West	Midwest	National Capital	Alaska	
National Historic Site	9	26	13	7	16	5	0	76
	2.52	7.28	3.64	1.96	4.48	1.40	0.00	21.29
National Monument	34	8	8	9	8	0	2	69
	9.52	2.24	2.24	2.52	2.24	0.00	0.56	19.33
National Park	18	2	7	17	7	0	8	59
	5.04	0.56	1.96	4.76	1.96	0.00	2.24	16.53
National Historical Park	6	14	7	9	3	2	2	43
	1.68	3.92	1.96	2.52	0.84	0.56	0.56	12.04
National Memorial	2	7	3	1	5	11	0	29
	0.56	1.96	0.84	0.28	1.40	3.08	0.00	8.12
National Recreation Area	6	3	1	7	0	0	0	17
	1.68	0.84	0.28	1.96	0.00	0.00	0.00	4.76
National Battlefield	0	2	4	1	1	2	0	10
	0.00	0.56	1.12	0.28	0.28	0.56	0.00	2.80
National Seashore	1	3	5	1	0	0	0	10
	0.28	0.84	1.40	0.28	0.00	0.00	0.00	2.80
National Military Park	0	2	6	0	1	0	0	9
	0.00	0.56	1.68	0.00	0.28	0.00	0.00	2.52
National Preserve	1	0	3	1	1	0	3	9
	0.28	0.00	0.84	0.28	0.28	0.00	0.84	2.52
National Wild & Scenic River	1	2	1	0	3	0	0	7
	0.28	0.56	0.28	0.00	0.84	0.00	0.00	1.96
National River	0	1	1	0	3	0	0	5
	0.00	0.28	0.28	0.00	0.84	0.00	0.00	1.40
National Battlefield Park	0	1	1	0	1	1	0	4
	0.00	0.28	0.28	0.00	0.28	0.28	0.00	1.12
National Lakeshore	0	0	0	0	4	0	0	4
	0.00	0.00	0.00	0.00	1.12	0.00	0.00	1.12
National Parkway	1	0	2	0	0	1	0	4
	0.28	0.00	0.56	0.00	0.00	0.28	0.00	1.12
International Historic Site	0	1	0	0	0	0	0	1
	0.00	0.28	0.00	0.00	0.00	0.00	0.00	0.28
National Reserve	0	0	0	1	0	0	0	1
	0.00	0.00	0.00	0.28	0.00	0.00	0.00	0.28
Total	79	72	62	54	53	22	15	357
	22.13	20.17	17.37	15.13	14.85	6.16	4.20	100.00
Frequency Missing = 347								

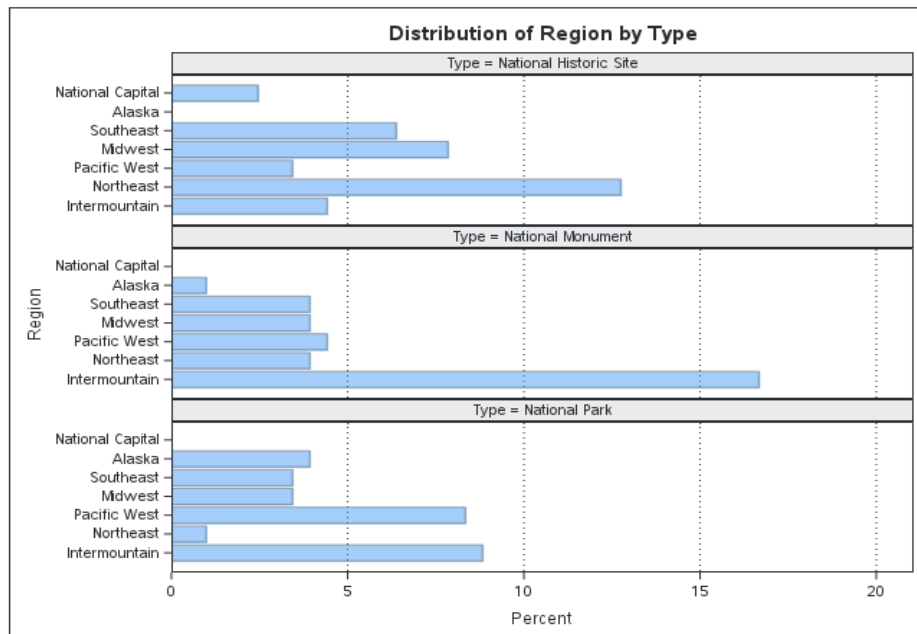
Selected Park Types by Region

The FREQ Procedure

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Table of Type by Region

Type	Region	Frequency	Percent	Row Percent
National Historic Site	Intermountain	9	4.41	11.84
	Northeast	26	12.75	34.21
	Pacific West	7	3.43	9.21
	Midwest	16	7.84	21.05
	Southeast	13	6.37	17.11
	Alaska	0	0.00	0.00
	National Capital	5	2.45	6.58
National Monument	Total	76	37.25	100.00
	Intermountain	34	16.67	49.28
	Northeast	8	3.92	11.59
	Pacific West	9	4.41	13.04
	Midwest	8	3.92	11.59
	Southeast	8	3.92	11.59
	Alaska	2	0.98	2.90
National Park	National Capital	0	0.00	0.00
	Total	69	33.82	100.00
	Intermountain	18	8.82	30.51
	Northeast	2	0.98	3.39
	Pacific West	17	8.33	28.81
	Midwest	7	3.43	11.86
	Southeast	7	3.43	11.86
Total	Alaska	8	3.92	13.56
	National Capital	0	0.00	0.00
	Total	59	28.92	100.00
	Intermountain	61	29.90	
	Northeast	36	17.65	
	Pacific West	33	16.18	
	Midwest	31	15.20	
	Southeast	28	13.73	
	Alaska	10	4.90	
	National Capital	5	2.45	
	Total	204	100.00	



Task 2

Start Page

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Run

Cancel

Copy to My Snippets

Code to Flow

Debug

Clear Log

27 Nov 2024, 11:14:33

Code

```
49
50 /* Task 2 - Analyzing Precipitation Data for National Parks */
51
52 /* Part a */
53 /* Cleaning the input dataset */
54 data filtered_weather;
55     set pgl.np_weather;
56     /* Excluding rows with missing Year, zero or missing Precip, or missing Name */
57     if Year ne . and Precip > 0 and Name ne '';
58 run;
59
60 /* Using PROC MEANS to calculate statistics */
61 proc means data=filtered_weather noprint;
62     class Name Year; /* Group data by park Name and Year */
63     var Precip; /* Analyzing precipitation amounts */
64     /* Creating a raw output table with columns for RainDays (N) and TotalRain (SUM) */
65     output out=rainstats_raw (drop=_type_ _freq_)
66           n=RainDays sum=TotalRain;
67 run;
68
69 /* Cleaning the raw output dataset by filtering out invalid entries*/
70 data rainstats;
71     set rainstats_raw;
72     /* Removing rows where Year is missing, RainDays is zero, or Name is missing */
73     if Year ne . and RainDays > 0 and Name ne '';
74 run;
75
76 /* Part b: Printing the final rainstats table */
77 title "Rain Statistics by Year and Park";
78
79 proc print data=rainstats label noobs;
80     var Name Year RainDays TotalRain; /* Displaying columns in the correct order */
81     label Name="Park Name"
82           RainDays="Number of Days Raining"
83           TotalRain="Total Rain Amount (inches)"; /* Added column labels */
84 run;
85
86 /* Part c */
87 /* Some rows had missing Year values in the output. */
88 /* To address this, rows with missing Year (Year = .) were removed in Step 1. */
89
90 /* Blank Name values were observed in some rows. */
91 /* These were filtered out in Step 1, and a second check was added in Step 3
92    to ensure all invalid rows were excluded. */
93
94 /* Rows with RainDays = 0 were included in the initial results. */
95 /* To ensure only meaningful statistics, rows where RainDays = 0 were removed in Step 3. */
96
97 /* The final rainstats table contains only valid Name, Year, and statistics. */
98
```

Log

Results

Output Data (3)

Rain Statistics by Year and Park

Park Name	Year	Number of Days Raining	Total Rain Amount (Inches)
DEATH VALLEY, CA US	2015	15	2.45
DEATH VALLEY, CA US	2016	16	1.42
DEATH VALLEY, CA US	2017	11	1.46
GRAND CANYON VISITOR CENTER, AZ US	2015	97	25.9
GRAND CANYON VISITOR CENTER, AZ US	2016	82	21.1
GRAND CANYON VISITOR CENTER, AZ US	2017	65	11
YELLOWSTONE NATIONAL PARK EAST ENTRANCE, WY US	2015	150	22.2
YELLOWSTONE NATIONAL PARK EAST ENTRANCE, WY US	2016	149	23.4
YELLOWSTONE NATIONAL PARK EAST ENTRANCE, WY US	2017	143	25.7
ZION NATIONAL PARK, UT US	2015	77	16.9
ZION NATIONAL PARK, UT US	2016	68	21.7
ZION NATIONAL PARK, UT US	2017	56	14.5

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