BAN 130 - ZBB

Programming for Analytics

Flight Delay Prediction

Group 9:

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INTRODUCTION

The goal of the project is to use a statistical model to determine if a domestic aircraft be delayed or rescheduled for more than 15 minutes in Jan. We have considered various factors, for example, the take-off time, day of the month, and the transporter the traveler is flying with. The travel information of all domestic planes which flew in Jan 2004 was included in the dataset we used to develop the statistical method. Our forecast model would permit a traveler to know his/her possibility of being postponed over 15 minutes, as well as assist airline businesses in measuring their performance and addressing problems that cause flight delays.

Because the airline business is so dynamic, airlines tend to keep their unpleasant performance outcomes hidden. Even though the United States Department of Transportation maintains actual flight information and makes it publicly available, most don't have the analytical background to evaluate the data in depth. Our team would want to use this chance to predict the results aimed at forecasting whether a flight will arrive on time or late, as well as providing consumer recommendations and interrelated parameters for airports and airlines.

DATASET

The database includes information such as day of the month, day of the week, origin, departure time, Flight number, Carrier, Weather, Tail number, Flight Status, Flight Date, Distance, Destination, and CRS Elapsed Time of Flight (estimated elapse time) operated by major airlines.

Goal: Accurately predict whether a flight, will be delayed (e.g., 15 min or more) (outcome 1 = delayed and 0 = on time).

• Data: 2001 record with 5 predictors (variables). All flights from the Washington, DC area into the New Your City area during January 2004.

• Filename: FlightDelays.csv

Day of week: Coded as 1 = Monday, 2 = Tuesday, …, 7 = Sunday

Sch. Dep. Time: Broken down into 18 intervals between 6:00 AM and 10:00 PM **Origin:** The

airport codes: DCA (Reagan National), IAD (Dulles), BWI (BaltimoreWashington Int'l)

Destination: Three airport codes: JFK (Kennedy), LGA (LaGuardia), EWR (Newark)

Carrier: Eight airline codes: CO (Continental), DH (Atlantic Coast), DL (Delta), MQ (American Eagle), OH (Comair), RU (Continental Express), UA (United), and US (USAirways)
FlightDelays.csv is a database that offers details on all passenger airlines that left Washington, D.C., and landed in New York in January 2004. There contains data on the entry and exit airports, the route mileage, the expected timestamp of the trip, and so on for every flight. The variable we're seeking to analyze is whether or not a flight will be delayed. A delay can be defined as a time difference of at least 15 minutes from the anticipated arrival time.

IMPORTING THE DATASET

```
PROC IMPORT DATAFILE="/home/u60687931/BAN130ZBB/FlightDelays.csv"
                    OUT=Flight DBMS=csv;
run;
proc print data=Flight(obs=5);
run;
```

Obs	CRS_DEP_TIME	CARRIER	DEP_TIME	DEST	DISTANCE	FL_DATE	FL_NUM	ORIGIN	Weather	DAY_WEEK	DAY_OF_MONTH	TAIL_NUM	Flight Status	new_DEP_TIME	new_CRS_TIME	CRS_TIME	di
1	1640	DH	1640	JFK	213	2004-01-01	6155	DCA	0	4	1	N405FJ	ontime	16:40	0:00	.	
2	1455	DL	1458	JFK	213	2004-01-01	748	DCA	0	4	1	N918DE	ontime	14:58	0:00	.	
3	930	DL	932	LGA	214	2004-01-01	1746	DCA	0	4	1	N243DL	ontime	9:32	0:00	.	
4	1230	DL	1229	LGA	214	2004-01-01	1752	DCA	0	4	1	N241DL	ontime	12:29	0:00	.	
5	1430	DL	1429	LGA	214	2004-01-01	1758	DCA	0	4	1	N243DL	ontime	14:29	0:00	.	

1. HANDLING MISSING DATA

```
/* Check missing values in Dataset */
TITLE "Checking for missing values";
PROC MEANS DATA=Flight mean median max min n nmiss maxdec=3;
RUN;


DATA Flight;
        SET Flight;
        IF FL_DATE=. then
                delete;
RUN;


/* Check missing values in Dataset after modification*/ TITLE "Check
missing values in Dataset after modification"; PROC MEANS
```

DATA=Flight mean median max min n nmiss maxdec=3; RUN;

Checking for missing values

The MEANS Procedure

Variable	Mean	Median	Maximum	Minimum	N	N Miss
CRS_DEP_TIME	1371.939	1455.000	2130.000	600.000	2201	0
DEP_TIME	1369.299	1450.000	2330.000	10.000	2201	0
DISTANCE	211.871	214.000	229.000	169.000	2201	0
FL_DATE	16086.032	16086.000	16101.000	16071.000	2200	1
FL_NUM	3815.086	2385.000	7924.000	746.000	2201	0
Weather	0.015	0.000	1.000	0.000	2201	0
DAY_WEEK	3.905	4.000	7.000	1.000	2201	0
DAY_OF_MONTH	16.025	16.000	31.000	1.000	2201	0

Check missing values in Dataset after modification

The MEANS Procedure

Variable	Mean	Median	Maximum	Minimum	N	N Miss
CRS_DEP_TIME	1371.901	1455.000	2130.000	600.000	2200	0
DEP_TIME	1369.260	1450.000	2330.000	10.000	2200	0
DISTANCE	211.884	214.000	229.000	169.000	2200	0
FL_DATE	16086.032	16086.000	16101.000	16071.000	2200	0
FL_NUM	3814.123	2385.000	7924.000	746.000	2200	0
Weather	0.015	0.000	1.000	0.000	2200	0
DAY_WEEK	3.905	4.000	7.000	1.000	2200	0
DAY_OF_MONTH	16.032	16.000	31.000	1.000	2200	0

2. NEW DATASET 'FLIGHT DELAYS'

/* Create a new SAS dataset "FlightDelays" containing only one Origin plus a new variable called DelayedFlight with values of 1 for delayed flight and 0 for none */

```
DATA Flight;
    SET Flight;
    WHERE ORIGIN='DCA';
    NewDepTime=input(cats(DEP_TIME, "00"), hhmmss.);
   format NewDepTime time5.;
    NewCRSTime=input(cats(CRS_TIME, "00"), hhmmss.);
   format NewCRSTime time5.;
    MinDiff=intck("minutes", new_CRS_DEP_TIME, NewDepTime);
```

```
        IF MinDiff ge 15 THEN
                DelayedFlight="1";
        ELSE
                DelayedFlight="0";
RUN;


proc print data=Flight(obs=5);
run;
```

Obs	CRS_DEP_TIME	CARRIER	DEP_TIME	DEST	DISTANCE	FL_DATE	FL_NUM	ORIGIN	Weather	DAY_WEEK	DAY_OF_MONTH	TAIL_NUM	Flight Status	NewDepTime	NewCRSTime	CRS_TIME	MinDiff
1	1040	DH	1043	JFK	213	2004-01-01	6133	DCA	0	4	1	N403FJ	ontime	10:40	0:00	.	.
2	1455	DL	1458	JFK	213	2004-01-01	746	DCA	0	4	1	N918DE	ontime	14:58	0:00	.	.
3	930	DL	932	LGA	214	2004-01-01	1766	DCA	0	4	1	N243DL	ontime	9:32	0:00	.	.
4	1230	DL	1228	LGA	214	2004-01-01	1752	DCA	0	4	1	N241DL	ontime	12:28	0:00	.	.
5	1430	DL	1429	LGA	214	2004-01-01	1756	DCA	0	4	1	N243DL	ontime	14:29	0:00	.	.

3. AVERAGE DELAY PER DAY

```
/* Generate a table for the average delay per day for each airport and plot the vertical
bar chart for the 7 days. */
proc sql;
        create table AvgDelayPerDay as select DEST, DAY_WEEK, avg(MinDiff)
                as AvgDelay from Flight where DelayedFlight='1' group by DEST, DAY_WEEK
                order by DEST asc;
quit;
TITLE "FIRST 10 OBSERVATIONS";
PROC PRINT DATA=Flight(OBS=10) NOOBS;
RUN;


/* Display Dataset which contains Delayed Flight = '1' */
```

TITLE "FIRST 10 OBSERVATIONS FOR DELAYED FLIGHTS";

PROC PRINT DATA=Flight(OBS=10) NOOBS;

WHERE DelayedFlight='1';

RUN;

FIRST 10 OBSERVATIONS

CRS_DEP_TIME	CARRIER	DEP_TIME	DEST	DISTANCE	FL_DATE	FL_NUM	ORIGIN	Weather	DAY_WEEK	DAY_OF_MONTH	TAIL_NUM	Flight Status	new_DEP_TIME	new_CRS_TIME	CRS_TIME	diff_in_m
1640	DH	1640	JFK	213	2004-01-01	6155	DCA	0	4	1	N409FJ	ontime	16:40	0:00	.	
1455	DL	1456	JFK	213	2004-01-01	748	DCA	0	4	1	N918DE	ontime	14:56	0:00	.	
930	DL	932	LGA	214	2004-01-01	1748	DCA	0	4	1	N243DL	ontime	9:32	0:00	.	
1230	DL	1228	LGA	214	2004-01-01	1752	DCA	0	4	1	N241DL	ontime	12:28	0:00	.	
1430	DL	1429	LGA	214	2004-01-01	1758	DCA	0	4	1	N243DL	ontime	14:29	0:00	.	
1730	DL	1726	LGA	214	2004-01-01	1762	DCA	0	4	1	N241DL	ontime	17:26	0:00	.	
2030	DL	2029	LGA	214	2004-01-01	1768	DCA	0	4	1	N243DL	ontime	20:29	0:00	.	
1530	MQ	1528	JFK	213	2004-01-01	4152	DCA	0	4	1	N739MQ	ontime	15:28	0:00	.	
600	MQ	556	JFK	213	2004-01-01	4160	DCA	0	4	1	N717MQ	ontime	5:56	0:00	.	
1630	MQ	1622	JFK	213	2004-01-01	4164	DCA	0	4	1	N737MQ	ontime	16:22	0:00	.	

4. REPORT SHOWING MEAN NUMBER OF FLIGHTS /*

Produce a report showing the mean number of flights per day for each Carrier. Give a sample of a scatter plot for one of the Carrier. */

** Calculating the number of flights per day of month for each Carrier*

; PROC MEANS DATA=Flight;

CLASS carrier;

OUTPUT OUT=flight1 MEAN=A;

RUN;

**Deleting the 1st Row with data for all combined;*

PROC SQL;

DELETE FROM flight1 WHERE carrier="";

RUN;

**Getting the average flights per day for each carrier in Average variable;*

DATA flight1_Averaged;

```
        SET flight1;
        Average_Flights_Per_Day=Freq / 30;
        DROP A Type Freq;
RUN;
TITLE "Report for Mean number of flights per day for each airport";
PROC PRINT DATA=flight1_Averaged noobs;
RUN;
 proc means data=Flight;
        where carrier="DH";
        class FL_Date;
        output out=Flight2 mean=A;
run;

 *Deleting extra row;
PROC SQL;
        DELETE FROM Flight2 WHERE FL_Date=.;
run;

 *Plotting our Scatterplot;
Title "Plot for Mean number of flights per day each airport for 'DH' Carrier";
proc sgplot data=Flight2;
        scatter x=fl_date y=freq ;
run;
```


The MEANS Procedure

CARRIER	N Obs	Variable	N	Mean	Std Dev	Minimum	Maximum

CO	94	CRS_DEP_TIME DEP_TIME DISTANCE FL_DATE FL_NUM Weather DAY_WEEK DAY_OF_MONTH new_DEP_TIME new_CRS_TIME CRS_TIME diff_in_minutes new_CRS_DEP_TI ME NewDepTime NewCRSTime MinDiff	9 4 9 4 9 4 9 4 9 4 9 4 9 4 9 4 9 4 9 4 0 0 0 9 4 9 4 0	1419.50 1413.23 199.0000 000 16086 .16 841.2659 574 0.0212 766 3.7446809 16.1595745 51857.87 0 . . . 51857.87 0 .	414.8253 098 422.9878 726 0 8.5387204 169.0298 806 0.1450 787 1.8776339 8.5387204 15236.27 0 . . . 15236.27 0 .	735.0000 000 727.0000 000 199.0000 000 16071.00 806.0000 0 0 0 0 1.0000000 1.0000000 26820.00 0 . . . 26820.00 0 .	1900.00 1959.00 199.0000 000 16101 .00 1767.00 1.0000000 7.0000000 31.0000 000 71940 .00 0 . . . 71940.00 0 .
DH	27	CRS_DEP_TIME DEP_TIME DISTANCE FL_DATE FL_NUM Weather DAY_WEEK DAY_OF_MONTH new_DEP_TIME new_CRS_TIME CRS_TIME diff_in_minutes new_CRS_DEP_TI ME NewDepTime NewCRSTime MinDiff	2 7 2 7 2 7 2 7 2 7 2 7 2 7 2 7 2 7 2 7 0 0 0 2 7 2 7 0	1640.00 1650.44 213.0000 000 16086 .30 6155.00 0 4.2592593 16.2962963 60360.00 0 . . . 60360.00 0 .	0 58.4329 5 5 2 0 8.9520724 0 0 1.9333628 8.9520724 2134.59 0 . . . 2134.59 0 .	1640.00 1630.00 213.0000 000 16071 .00 6155.00 0 1.0000000 1.0000000 59400.00 0 . . . 59400.00 0 .	1640.00 1941.00 213.0000 000 16101 .00 6155.00 0 7.0000000 31.0000 000 70860 .00 0 . . . 70860.00 0 .
DL	388	CRS_DEP_TIME DEP_TIME DISTANCE FL_DATE FL_NUM Weather DAY_WEEK DAY_OF_MONTH new_DEP_TIME new_CRS_TIME CRS_TIME diff_in_minutes new_CRS_DEP_TI ME NewDepTime NewCRSTime MinDiff	38 8 38 8 38 8 38 8 38 8 38 8 38 8 38 8 38 8 38 8 0 0 0 38 8	1369.37 1373.59 213.9201 031 16086 .34 1674.05 0.0077320 3.8608247 16.3402062 50163.71 0 . . . 50163.71 0 .	411.6614 735 413.0830 326 0.271483 6 8.4549410 273.9521 402 0.0877 040 1.8955166 8.4549410 14866.64 0 . . . 14866.64 0 .	630.0000 000 627.0000 000 213.0000 000 16071.00 746.0000 0 0 0 0 1.0000000 1.0000000 23220.00 0 . . . 23220.00 0 .	2030.00 2033.00 214.0000 000 16101 .00 1768.00 1.0000000 7.0000000 31.0000 000 73980 .00 0 . . . 73980.00 0 .

			38 8 0				
MQ	295	CRS_DEP_TIME DEP_TIME DISTANCE FL_DATE FL_NUM Weather DAY_WEEK DAY_OF_MONTH new_DEP_TIME new_CRS_TIME CRS_TIME diff_in_minutes new_CRS_DEP_TIME NewDepTime NewCRSTime MinDiff	29 5 29 5 29 5 29 5 29 5 29 5 29 5 29 5 0 0 0 29 5 29 5 0	1312.97 1305.77 213.6915 254 16085 .74 4902.87 0.0338983 3.7898305 15.7389831 47951.59 0 . . . 47951.59 0 .	421.8907 057 445.2284 223 0.462648 4 8.4986797 92.3125 025 0.1812 749 1.8561989 8.4986797 15865.51 0 . . . 15865.51 0 .	600.0000 000 548.0000 000 213.0000 000 16071.00 4752.00 0 1.0000000 1.0000000 20880.00 0 . . . 20880.00 0 .	1900.00 2023.00 214.0000 000 16101 .00 4976.00 1.0000000 7.0000000 31.0000 000 73380 .00 0 . . . 73380.00 0 .

CARRIER	N Obs	Variable	N	Mean	Std Dev	Minimum	Maximum
RU	162	CRS_DEP_TIME DEP_TIME DISTANCE FL_DATE FL_NUM Weather DAY_WEEK DAY_OF_MONTH new_DEP_TIME new_CRS_TIME CRS_TIME diff_in_minutes new_CRS_DEP_TIME NewDepTime NewCRSTime MinDiff	16 2 16 2 16 2 16 2 16 2 16 2 16 2 16 2 16 2 0 0 0 16 2 16 2 0	1368.43 1372.07 199.0000 000 16085 .58 2454.48 0.0061728 3.9753086 15.5802469 50353.70 0 . . . 50353.70 0 .	463.4422 489 471.5012 646 0 8.8596569 270.6426 491 0.0785 674 1.8548262 8.8596569 16925.79 0 . . . 16925.79 0 .	645.0000 000 638.0000 000 199.0000 000 16071.00 2097.00 0 1.0000000 1.0000000 23880.00 0 . . . 23880.00 0 .	2130.00 2244.00 199.0000 000 16101 .00 2879.00 1.0000000 7.0000000 31.0000 000 81840 .00 0 . . . 81840.00 0 .

US	404	CRS_DEP_TIME	40	1363.37	448.0889	630.0000	2100.00
		DEP_TIME	4	1328.25	163	000	2139.00
		DISTANCE	40	214.0000	446.0715	625.0000	214.0000
		FL_DATE	4	000	547 0	000	000
		FL_NUM	40	16086	8.5436468	214.0000	16101
		Weather	4	.34	151.1816	000	.00
		DAY_WEEK	40	2139.62	387	16071.00	2188.00
		DAY_OF_MONTH	4	0.0024752	0.0497	1479.00	1.0000000
		new_DEP_TIME	40	3.8143564	519	0	7.0000000
		new_CRS_TIME	4	16.3391089	1.9273896	1.0000000	31.0000
		CRS_TIME	40	49011.98	8.5436468	1.0000000	000
		diff_in_minutes	4	0	16064.86	23100.00	77940
		new_CRS_DEP_TI	40	.	0	0	.00
		ME NewDepTime	4	.	.	.	0
		NewCRSTime	40	.	.	.	.
		MinDiff	4	49011.98	.	.	.
			40	0	16064.86	23100.00	.
			4	.	0	0	77940.00
			40		.	.	0
			4				.
			0				
			0				
			0				
			40				
			4				
			40				
			4				
			0				

Report for Mean number of flights per day for each airport

CARRIER	_TYPE_	_FREQ_	Average_Flights_Per_Day
CO	1	94	.
DH	1	27	.
DL	1	388	.
MQ	1	295	.
RU	1	162	.
US	1	404	.

Report for Mean number of flights per day for each airport

The MEANS Procedure

FL_DATE	N Obs	Variable	N	Mean	Std Dev	Minimum	Maximum
04-01-01	1	CRS_DEP_TIME	1	1640.00	.	1640.00	1640.00
		DEP_TIME	1	1640.00	.	1640.00	1640.00
		DISTANCE	1	213.0000	.	213.0000	213.0000
		FL_NUM	1	000	.	000	000
		Weather	1	6155	.	6155	6155
		DAY_WEEK	1	.00	.	.00	.00
		DAY_OF_MONTH	1	0	.	0	0
		new_DEP_TIME	1	4.0000000	.	4.0000000	4.0000000
		new_CRS_TIME	1	1.0000000	.	1.0000000	1.0000000
		CRS_TIME	0	60000.00	.	60000.00	60000.00
		diff_in_minutes	0	0	.	0	0
		new_CRS_DEP_TI	0	.	.	.	.
		ME NewDepTime	1	.	.	.	.
		NewCRSTime	1	.	.	.	.
		MinDiff	0	60000.00	.	60000.00	60000.00
				0		0	0
				.		.	.

FL_DATE	N Obs	Variable	N	Mean	Std Dev	Minimum	Maximum
04-01-02	1	CRS_DEP_TIME	1	1640.00	.	1640.00	1640.00
		DEP_TIME	1	1641.00	.	1641.00	1641.00
		DISTANCE	1	213.0000	.	213.0000	213.0000
		FL_NUM	1	000	.	000	000
		Weather	1	6155	.	6155	6155
		DAY_WEEK	1	.00	.	.00	.00
		DAY_OF_MONTH	1	0	.	0	0
		new_DEP_TIME	1	5.0000000	.	5.0000000	5.0000000
		new_CRS_TIME	1	2.0000000	.	2.0000000	2.0000000
		CRS_TIME	0	60060.00	.	60060.00	60060.00
		diff_in_minutes	0	0	.	0	0
		new_CRS_DEP_TI	0	.	.	.	.
		ME NewDepTime	1	.	.	.	.
		NewCRSTime	1	.	.	.	.
		MinDiff	0	60060.00	.	60060.00	60060.00
				0		0	0
				.		.	.
04-01-04	1	CRS_DEP_TIME	1	1640.00	.	1640.00	1640.00
		DEP_TIME	1	1644.00	.	1644.00	1644.00
		DISTANCE	1	213.0000	.	213.0000	213.0000
		FL_NUM	1	000	.	000	000
		Weather	1	6155	.	6155	6155
		DAY_WEEK	1	.00	.	.00	.00
		DAY_OF_MONTH	1	0	.	0	0
		new_DEP_TIME	1	7.0000000	.	7.0000000	7.0000000
		new_CRS_TIME	1	4.0000000	.	4.0000000	4.0000000
		CRS_TIME	0	60240.00	.	60240.00	60240.00
		diff_in_minutes	0	0	.	0	0
		new_CRS_DEP_TI	0	.	.	.	.
		ME NewDepTime	1	.	.	.	.
		NewCRSTime	1	.	.	.	.
		MinDiff	0	60240.00	.	60240.00	60240.00
				0		0	0
				.		.	.
04-01-05	1	CRS_DEP_TIME	1	1640.00	.	1640.00	1640.00
		DEP_TIME	1	1638.00	.	1638.00	1638.00
		DISTANCE	1	213.0000	.	213.0000	213.0000
		FL_NUM	1	000	.	000	000
		Weather	1	6155	.	6155	6155
		DAY_WEEK	1	.00	.	.00	.00
		DAY_OF_MONTH	1	0	.	0	0
		new_DEP_TIME	1	1.0000000	.	1.0000000	1.0000000
		new_CRS_TIME	1	5.0000000	.	5.0000000	5.0000000
		CRS_TIME	0	59880.00	.	59880.00	59880.00
		diff_in_minutes	0	0	.	0	0
		new_CRS_DEP_TI	0	.	.	.	.
		ME NewDepTime	1	.	.	.	.
		NewCRSTime	1	.	.	.	.
		MinDiff	0	59880.00	.	59880.00	59880.00
				0		0	0
				.		.	.
04-01-07	1	CRS_DEP_TIME	1	1640.00	.	1640.00	1640.00
		DEP_TIME	1	1639.00	.	1639.00	1639.00
		DISTANCE	1	213.0000	.	213.0000	213.0000
		FL_NUM	1	000	.	000	000
		Weather	1	6155	.	6155	6155
		DAY_WEEK	1	.00	.	.00	.00
		DAY_OF_MONTH	1	0	.	0	0
		new_DEP_TIME	1	3.0000000	.	3.0000000	3.0000000
		new_CRS_TIME	1	7.0000000	.	7.0000000	7.0000000
		CRS_TIME	0	59940.00	.	59940.00	59940.00
		diff_in_minutes	0	0	.	0	0
		new_CRS_DEP_TI	0	.	.	.	.
		ME NewDepTime	1	.	.	.	.
		NewCRSTime	1	.	.	.	.
		MinDiff	0	59940.00	.	59940.00	59940.00
				0		0	0
				.		.	.

04-01-08	1	CRS_DEP_TIME	1	1640.00	.	1640.00	1640.00
		DEP_TIME	1	1640.00	.	1640.00	1640.00
		DISTANCE	1	213.0000	.	213.0000	213.0000
		FL_NUM	1	000	.	000	000
		Weather	1	6155	.	6155	6155
		DAY_WEEK	1	.00	.	.00	.00
		DAY_OF_MONTH	1	0	.	0	0
		new_DEP_TIME	1	4.0000000	.	4.0000000	4.0000000
		new_CRS_TIME	1	8.0000000	.	8.0000000	8.0000000
		CRS_TIME	0	60000.00	.	60000.00	60000.00
		diff_in_minutes	0	0	.	0	0
		new_CRS_DEP_TI	0	.	.	.	.
		ME NewDepTime	1	.	.	.	.
		NewCRSTime	1	.	.	.	.
		MinDiff	0	60000.00	.	60000.00	60000.00
				0		0	0
				.		.	.

FL_DATE	N Obs	Variable	N	Mean	Std Dev	Minimum	Maximum
04-01-09	1	CRS_DEP_TIME	1	1640.00	.	1640.00	1640.00
		DEP_TIME	1	1634.00	.	1634.00	1634.00
		DISTANCE	1	213.0000	.	213.0000	213.0000
		FL_NUM	1	000	.	000	000
		Weather	1	6155	.	6155	6155
		DAY_WEEK	1	.00	.	.00	.00
		DAY_OF_MONTH	1	0	.	0	0
		new_DEP_TIME	1	5.0000000	.	5.0000000	5.0000000
		new_CRS_TIME	1	9.0000000	.	9.0000000	9.0000000
		CRS_TIME	0	59640.00	.	59640.00	59640.00
		diff_in_minutes	0	0	.	0	0
		new_CRS_DEP_TI	0	.	.	.	.
		ME NewDepTime	1	.	.	.	.
		NewCRSTime	1	.	.	.	.
		MinDiff	0	59640.00	.	59640.00	59640.00
				0		0	0
				.		.	.
04-01-10	1	CRS_DEP_TIME	1	1640.00	.	1640.00	1640.00
		DEP_TIME	1	1638.00	.	1638.00	1638.00
		DISTANCE	1	213.0000	.	213.0000	213.0000
		FL_NUM	1	000	.	000	000
		Weather	1	6155	.	6155	6155
		DAY_WEEK	1	.00	.	.00	.00
		DAY_OF_MONTH	1	0	.	0	0
		new_DEP_TIME	1	6.0000000	.	6.0000000	6.0000000
		new_CRS_TIME	1	10.0000000	.	10.0000000	10.0000000
		CRS_TIME	0	59880.00	.	59880.00	59880.00
		diff_in_minutes	0	0	.	0	0
		new_CRS_DEP_TI	0	.	.	.	.
		ME NewDepTime	1	.	.	.	.
		NewCRSTime	1	.	.	.	.
		MinDiff	0	59880.00	.	59880.00	59880.00
				0		0	0
				.		.	.
04-01-11	1	CRS_DEP_TIME	1	1640.00	.	1640.00	1640.00
		DEP_TIME	1	1634.00	.	1634.00	1634.00
		DISTANCE	1	213.0000	.	213.0000	213.0000
		FL_NUM	1	000	.	000	000
		Weather	1	6155	.	6155	6155
		DAY_WEEK	1	.00	.	.00	.00
		DAY_OF_MONTH	1	0	.	0	0
		new_DEP_TIME	1	7.0000000	.	7.0000000	7.0000000
		new_CRS_TIME	1	11.0000000	.	11.0000000	11.0000000
		CRS_TIME	0	59640.00	.	59640.00	59640.00
		diff_in_minutes	0	0	.	0	0
		new_CRS_DEP_TI	0	.	.	.	.
		ME NewDepTime	1	.	.	.	.
		NewCRSTime	1	.	.	.	.
		MinDiff	0	59640.00	.	59640.00	59640.00
				0		0	0
				.		.	.

04-01-12	1	CRS_DEP_TIME	1	1640.00	.	1640.00	1640.00
		DEP_TIME	1	1640.00	.	1640.00	1640.00
		DISTANCE	1	213.0000	.	213.0000	213.0000
		FL_NUM	1	000	.	000	000
		Weather	1	6155	.	6155	6155
		DAY_WEEK	1	.00	.	.00	.00
		DAY_OF_MONTH	1	0	.	0	0
		new_DEP_TIME	1	1.0000000	.	1.0000000	1.0000000
		new_CRS_TIME	1	12.0000000	.	12.0000000	12.0000000
		CRS_TIME	0	60000.00	.	60000.00	60000.00
		diff_in_minutes	0	0	.	0	0
		new_CRS_DEP_TI	0	.	.	.	.
		ME NewDepTime	1	.	.	.	.
		NewCRSTime	1	.	.	.	.
		MinDiff	0	60000.00	.	60000.00	60000.00
				0		0	0
				.		.	.
04-01-13	1	CRS_DEP_TIME	1	1640.00	.	1640.00	1640.00
		DEP_TIME	1	1639.00	.	1639.00	1639.00
		DISTANCE	1	213.0000	.	213.0000	213.0000
		FL_NUM	1	000	.	000	000
		Weather	1	6155	.	6155	6155
		DAY_WEEK	1	.00	.	.00	.00
		DAY_OF_MONTH	1	0	.	0	0
		new_DEP_TIME	1	2.0000000	.	2.0000000	2.0000000
		new_CRS_TIME	1	13.0000000	.	13.0000000	13.0000000
		CRS_TIME	0	59940.00	.	59940.00	59940.00
		diff_in_minutes	0	0	.	0	0
		new_CRS_DEP_TI	0	.	.	.	.
		ME NewDepTime	1	.	.	.	.
		NewCRSTime	1	.	.	.	.
		MinDiff	0	59940.00	.	59940.00	59940.00
				0		0	0
				.		.	.

FL_DATE	N Obs	Variable	N	Mean	Std Dev	Minimum	Maximum
04-01-14	1	CRS_DEP_TIME	1	1640.00	.	1640.00	1640.00
		DEP_TIME	1	1630.00	.	1630.00	1630.00
		DISTANCE	1	213.0000	.	213.0000	213.0000
		FL_NUM	1	000	.	000	000
		Weather	1	6155	.	6155	6155
		DAY_WEEK	1	.00	.	.00	.00
		DAY_OF_MONTH	1	0	.	0	0
		new_DEP_TIME	1	3.0000000	.	3.0000000	3.0000000
		new_CRS_TIME	1	14.0000000	.	14.0000000	14.0000000
		CRS_TIME	0	59400.00	.	59400.00	59400.00
		diff_in_minutes	0	0	.	0	0
		new_CRS_DEP_TI	0	.	.	.	.
		ME NewDepTime	1	.	.	.	.
		NewCRSTime	1	.	.	.	.
		MinDiff	0	59400.00	.	59400.00	59400.00
				0		0	0
				.		.	.
04-01-15	1	CRS_DEP_TIME	1	1640.00	.	1640.00	1640.00
		DEP_TIME	1	1637.00	.	1637.00	1637.00
		DISTANCE	1	213.0000	.	213.0000	213.0000
		FL_NUM	1	000	.	000	000
		Weather	1	6155	.	6155	6155
		DAY_WEEK	1	.00	.	.00	.00
		DAY_OF_MONTH	1	0	.	0	0
		new_DEP_TIME	1	4.0000000	.	4.0000000	4.0000000
		new_CRS_TIME	1	15.0000000	.	15.0000000	15.0000000
		CRS_TIME	0	59820.00	.	59820.00	59820.00
		diff_in_minutes	0	0	.	0	0
		new_CRS_DEP_TI	0	.	.	.	.
		ME NewDepTime	1	.	.	.	.
		NewCRSTime	1	.	.	.	.
		MinDiff	0	59820.00	.	59820.00	59820.00
				0		0	0
				.		.	.

04-01-16	1	CRS_DEP_TIME	1	1640.00	.	1640.00	1640.00
		DEP_TIME	1	1648.00	.	1648.00	1648.00
		DISTANCE	1	213.0000	.	213.0000	213.0000
		FL_NUM	1	000	.	000	000
		Weather	1	6155	.	6155	6155
		DAY_WEEK	1	.00	.	.00	.00
		DAY_OF_MONTH	1	0	.	0	0
		new_DEP_TIME	1	5.0000000	.	5.0000000	5.0000000
		new_CRS_TIME	1	16.0000000	.	16.0000000	16.0000000
		CRS_TIME	0	60480.00	.	60480.00	60480.00
		diff_in_minutes	0	0	.	0	0
		new_CRS_DEP_TI	0	.	.	.	.
		ME NewDepTime	1	.	.	.	.
		NewCRSTime	1	.	.	.	.
		MinDiff	0	60480.00	.	60480.00	60480.00
				0		0	0
				.		.	.
04-01-17	1	CRS_DEP_TIME	1	1640.00	.	1640.00	1640.00
		DEP_TIME	1	1637.00	.	1637.00	1637.00
		DISTANCE	1	213.0000	.	213.0000	213.0000
		FL_NUM	1	000	.	000	000
		Weather	1	6155	.	6155	6155
		DAY_WEEK	1	.00	.	.00	.00
		DAY_OF_MONTH	1	0	.	0	0
		new_DEP_TIME	1	6.0000000	.	6.0000000	6.0000000
		new_CRS_TIME	1	17.0000000	.	17.0000000	17.0000000
		CRS_TIME	0	59820.00	.	59820.00	59820.00
		diff_in_minutes	0	0	.	0	0
		new_CRS_DEP_TI	0	.	.	.	.
		ME NewDepTime	1	.	.	.	.
		NewCRSTime	1	.	.	.	.
		MinDiff	0	59820.00	.	59820.00	59820.00
				0		0	0
				.		.	.
04-01-18	1	CRS_DEP_TIME	1	1640.00	.	1640.00	1640.00
		DEP_TIME	1	1659.00	.	1659.00	1659.00
		DISTANCE	1	213.0000	.	213.0000	213.0000
		FL_NUM	1	000	.	000	000
		Weather	1	6155	.	6155	6155
		DAY_WEEK	1	.00	.	.00	.00
		DAY_OF_MONTH	1	0	.	0	0
		new_DEP_TIME	1	7.0000000	.	7.0000000	7.0000000
		new_CRS_TIME	1	18.0000000	.	18.0000000	18.0000000
		CRS_TIME	0	61140.00	.	61140.00	61140.00
		diff_in_minutes	0	0	.	0	0
		new_CRS_DEP_TI	0	.	.	.	.
		ME NewDepTime	1	.	.	.	.
		NewCRSTime	1	.	.	.	.
		MinDiff	0	61140.00	.	61140.00	61140.00
				0		0	0
				.		.	.

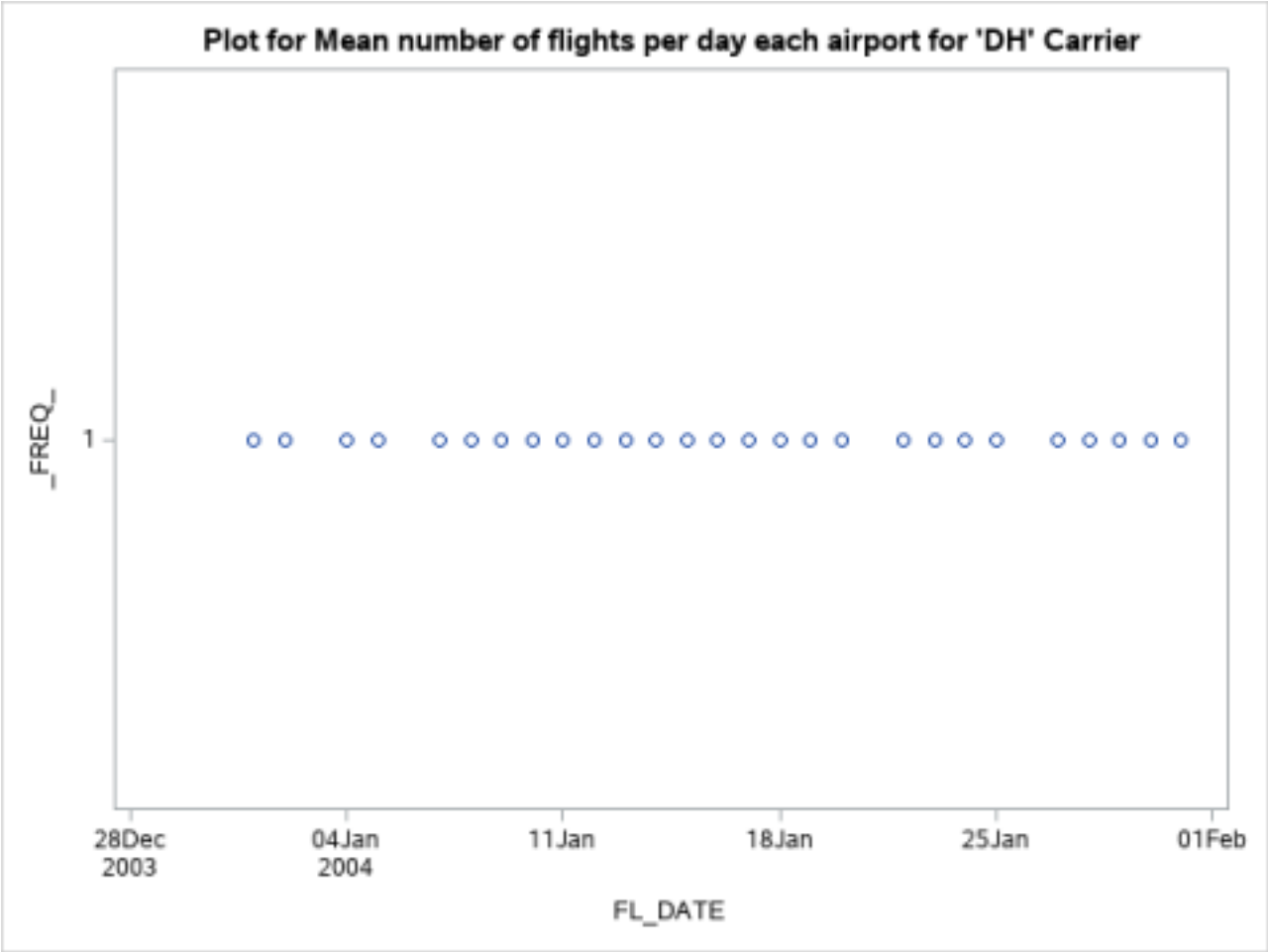
FL_DATE	N Obs	Variable	N	Mean	Std Dev	Minimum	Maximum
04-01-19	1	CRS_DEP_TIME	1	1640.00	.	1640.00	1640.00
		DEP_TIME	1	1636.00	.	1636.00	1636.00
		DISTANCE	1	213.0000	.	213.0000	213.0000
		FL_NUM	1	000	.	000	000
		Weather	1	6155	.	6155	6155
		DAY_WEEK	1	.00	.	.00	.00
		DAY_OF_MONTH	1	0	.	0	0
		new_DEP_TIME	1	1.0000000	.	1.0000000	1.0000000
		new_CRS_TIME	1	19.0000000	.	19.0000000	19.0000000
		CRS_TIME	0	59760.00	.	59760.00	59760.00
		diff_in_minutes	0	0	.	0	0
		new_CRS_DEP_TI	0	.	.	.	.
		ME NewDepTime	1	.	.	.	.
		NewCRSTime	1	.	.	.	.
		MinDiff	0	59760.00	.	59760.00	59760.00
				0		0	0
				.		.	.

04-01-20	1	CRS_DEP_TIME	1	1640.00	.	1640.00	1640.00
		DEP_TIME	1	1637.00	.	1637.00	1637.00
		DISTANCE	1	213.0000	.	213.0000	213.0000
		FL_NUM	1	000	.	000	000
		Weather	1	6155	.	6155	6155
		DAY_WEEK	1	.00	.	.00	.00
		DAY_OF_MONTH	1	0	.	0	0
		new_DEP_TIME	1	2.0000000	.	2.0000000	2.0000000
		new_CRS_TIME	1	20.0000	.	20.0000	20.0000
		CRS_TIME	0	000	.	000	000
		diff_in_minutes	0	59820	.	59820	59820
		new_CRS_DEP_TI	0	.00	.	.00	.00
		ME NewDepTime	1	0	.	0	0
		NewCRSTime	1	.	.	.	.
		MinDiff	0	.	.	.	.
				.		.	.
				59820.00		59820.00	59820.00
				0		0	0
				.		.	.
04-01-22	1	CRS_DEP_TIME	1	1640.00	.	1640.00	1640.00
		DEP_TIME	1	1641.00	.	1641.00	1641.00
		DISTANCE	1	213.0000	.	213.0000	213.0000
		FL_NUM	1	000	.	000	000
		Weather	1	6155	.	6155	6155
		DAY_WEEK	1	.00	.	.00	.00
		DAY_OF_MONTH	1	0	.	0	0
		new_DEP_TIME	1	4.0000000	.	4.0000000	4.0000000
		new_CRS_TIME	1	22.0000	.	22.0000	22.0000
		CRS_TIME	0	000	.	000	000
		diff_in_minutes	0	60060	.	60060	60060
		new_CRS_DEP_TI	0	.00	.	.00	.00
		ME NewDepTime	1	0	.	0	0
		NewCRSTime	1	.	.	.	.
		MinDiff	0	.	.	.	.
				.		.	.
				60060.00		60060.00	60060.00
				0		0	0
				.		.	.
04-01-23	1	CRS_DEP_TIME	1	1640.00	.	1640.00	1640.00
		DEP_TIME	1	1640.00	.	1640.00	1640.00
		DISTANCE	1	213.0000	.	213.0000	213.0000
		FL_NUM	1	000	.	000	000
		Weather	1	6155	.	6155	6155
		DAY_WEEK	1	.00	.	.00	.00
		DAY_OF_MONTH	1	0	.	0	0
		new_DEP_TIME	1	5.0000000	.	5.0000000	5.0000000
		new_CRS_TIME	1	23.0000	.	23.0000	23.0000
		CRS_TIME	0	000	.	000	000
		diff_in_minutes	0	60000	.	60000	60000
		new_CRS_DEP_TI	0	.00	.	.00	.00
		ME NewDepTime	1	0	.	0	0
		NewCRSTime	1	.	.	.	.
		MinDiff	0	.	.	.	.
				.		.	.
				60000.00		60000.00	60000.00
				0		0	0
				.		.	.
04-01-24	1	CRS_DEP_TIME	1	1640.00	.	1640.00	1640.00
		DEP_TIME	1	1633.00	.	1633.00	1633.00
		DISTANCE	1	213.0000	.	213.0000	213.0000
		FL_NUM	1	000	.	000	000
		Weather	1	6155	.	6155	6155
		DAY_WEEK	1	.00	.	.00	.00
		DAY_OF_MONTH	1	0	.	0	0
		new_DEP_TIME	1	6.0000000	.	6.0000000	6.0000000
		new_CRS_TIME	1	24.0000	.	24.0000	24.0000
		CRS_TIME	0	000	.	000	000
		diff_in_minutes	0	59580	.	59580	59580
		new_CRS_DEP_TI	0	.00	.	.00	.00
		ME NewDepTime	1	0	.	0	0
		NewCRSTime	1	.	.	.	.
		MinDiff	0	.	.	.	.
				.		.	.
				59580.00		59580.00	59580.00
				0		0	0
				.		.	.

FL_DATE	N Obs	Variable	N	Mean	Std Dev	Minimum	Maximum
04-01-25	1	CRS_DEP_TIME	1	1640.00	.	1640.00	1640.00
		DEP_TIME	1	1656.00	.	1656.00	1656.00
		DISTANCE	1	213.0000	.	213.0000	213.0000
		FL_NUM	1	000	.	000	000
		Weather	1	6155	.	6155	6155
		DAY_WEEK	1	.00	.	.00	.00
		DAY_OF_MONTH	1	0	.	0	0
		new_DEP_TIME	1	7.0000000	.	7.0000000	7.0000000
		new_CRS_TIME	1	25.0000	.	25.0000	25.0000
		CRS_TIME	0	000	.	000	000
		diff_in_minutes	0	60960	.	60960	60960
		new_CRS_DEP_TIME	0	.00	.	.00	.00
		NewDepTime	1	0	.	0	0
		NewCRSTime	1	.	.	.	.
		MinDiff	0	.	.	.	.
				.		.	.
				60960.00		60960.00	60960.00
				0		0	0
				.		.	.
04-01-27	1	CRS_DEP_TIME	1	1640.00	.	1640.00	1640.00
		DEP_TIME	1	1941.00	.	1941.00	1941.00
		DISTANCE	1	213.0000	.	213.0000	213.0000
		FL_NUM	1	000	.	000	000
		Weather	1	6155	.	6155	6155
		DAY_WEEK	1	.00	.	.00	.00
		DAY_OF_MONTH	1	0	.	0	0
		new_DEP_TIME	1	2.0000000	.	2.0000000	2.0000000
		new_CRS_TIME	1	27.0000	.	27.0000	27.0000
		CRS_TIME	0	000	.	000	000
		diff_in_minutes	0	70860	.	70860	70860
		new_CRS_DEP_TIME	0	.00	.	.00	.00
		NewDepTime	1	0	.	0	0
		NewCRSTime	1	.	.	.	.
		MinDiff	0	.	.	.	.
				.		.	.
				70860.00		70860.00	70860.00
				0		0	0
				.		.	.
04-01-28	1	CRS_DEP_TIME	1	1640.00	.	1640.00	1640.00
		DEP_TIME	1	1631.00	.	1631.00	1631.00
		DISTANCE	1	213.0000	.	213.0000	213.0000
		FL_NUM	1	000	.	000	000
		Weather	1	6155	.	6155	6155
		DAY_WEEK	1	.00	.	.00	.00
		DAY_OF_MONTH	1	0	.	0	0
		new_DEP_TIME	1	3.0000000	.	3.0000000	3.0000000
		new_CRS_TIME	1	28.0000	.	28.0000	28.0000
		CRS_TIME	0	000	.	000	000
		diff_in_minutes	0	59460	.	59460	59460
		new_CRS_DEP_TIME	0	.00	.	.00	.00
		NewDepTime	1	0	.	0	0
		NewCRSTime	1	.	.	.	.
		MinDiff	0	.	.	.	.
				.		.	.
				59460.00		59460.00	59460.00
				0		0	0
				.		.	.

04-01-29	1	CRS_DEP_TIME	1	1640.00	.	1640.00	1640.00
		DEP_TIME	1	1636.00	.	1636.00	1636.00
		DISTANCE	1	213.0000	.	213.0000	213.0000
		FL_NUM	1	000	.	000	000
		Weather	1	6155	.	6155	6155
		DAY_WEEK	1	.00	.	.00	.00
		DAY_OF_MONTH	1	0	.	0	0
		new_DEP_TIME	1	4.0000000	.	4.0000000	4.0000000
		new_CRS_TIME	1	29.0000	.	29.0000	29.0000
		CRS_TIME	0	000	.	000	000
		diff_in_minutes	0	59760	.	59760	59760
		new_CRS_DEP_TI	0	.00	.	.00	.00
		ME NewDepTime	1	0	.	0	0
		NewCRSTime	1	.	.	.	.
		MinDiff	0	.	.	.	.
				.		.	.
				59760.00		59760.00	59760.00
				0		0	0
				.		.	.
04-01-30	1	CRS_DEP_TIME	1	1640.00	.	1640.00	1640.00
		DEP_TIME	1	1640.00	.	1640.00	1640.00
		DISTANCE	1	213.0000	.	213.0000	213.0000
		FL_NUM	1	000	.	000	000
		Weather	1	6155	.	6155	6155
		DAY_WEEK	1	.00	.	.00	.00
		DAY_OF_MONTH	1	0	.	0	0
		new_DEP_TIME	1	5.0000000	.	5.0000000	5.0000000
		new_CRS_TIME	1	30.0000	.	30.0000	30.0000
		CRS_TIME	0	000	.	000	000
		diff_in_minutes	0	60000	.	60000	60000
		new_CRS_DEP_TI	0	.00	.	.00	.00
		ME NewDepTime	1	0	.	0	0
		NewCRSTime	1	.	.	.	.
		MinDiff	0	.	.	.	.
				.		.	.
				60000.00		60000.00	60000.00
				0		0	0
				.		.	.

FL_DATE	N Obs	Variable	N	Mean	Std Dev	Minimum	Maximum
04-01-31	1	CRS_DEP_TIME	1	1640.00	.	1640.00	1640.00
		DEP_TIME	1	1633.00	.	1633.00	1633.00
		DISTANCE	1	213.0000	.	213.0000	213.0000
		FL_NUM	1	000	.	000	000
		Weather	1	6155	.	6155	6155
		DAY_WEEK	1	.00	.	.00	.00
		DAY_OF_MONTH	1	0	.	0	0
		new_DEP_TIME	1	6.0000000	.	6.0000000	6.0000000
		new_CRS_TIME	1	31.0000	.	31.0000	31.0000
		CRS_TIME	0	000	.	000	000
		diff_in_minutes	0	59580	.	59580	59580
		new_CRS_DEP_TI	0	.00	.	.00	.00
		ME NewDepTime	1	0	.	0	0
		NewCRSTime	1	.	.	.	.
		MinDiff	0	.	.	.	.
				.		.	.
				59580.00		59580.00	59580.00
				0		0	0
				.		.	.



5. GRAPHS FOR QUANTITATIVE VARIABLES

```
/* Plot a histogram for each of the quantitative variables. */

TITLE "Histogram representing the quantitative variables";

PROC UNIVARIATE DATA=Flight;

        VAR DISTANCE FL_DATE FL_NUM Weather DAY_WEEK DAY_OF_MONTH;

        HISTOGRAM;

RUN;
```

Histogram representing the quantitative variables

The UNIVARIATE Procedure
Variable: DISTANCE

Moments			
N	1370	Sum Weights	1370
Mean	211.088321	Sum Observations	289191
Std Deviation	5.80510802	Variance	33.6992791
Skewness	-1.5980104	Kurtosis	0.57103678
Uncorrected SS	61090977	Corrected SS	46134.3131
Coeff Variation	2.75008489	Std Error Mean	0.15683754

Basic Statistical Measures			
Location		Variability	
Mean	211.0883	Std Deviation	5.80511
Median	214.0000	Variance	33.69928
Mode	214.0000	Range	15.00000
		Interquartile Range	1.00000

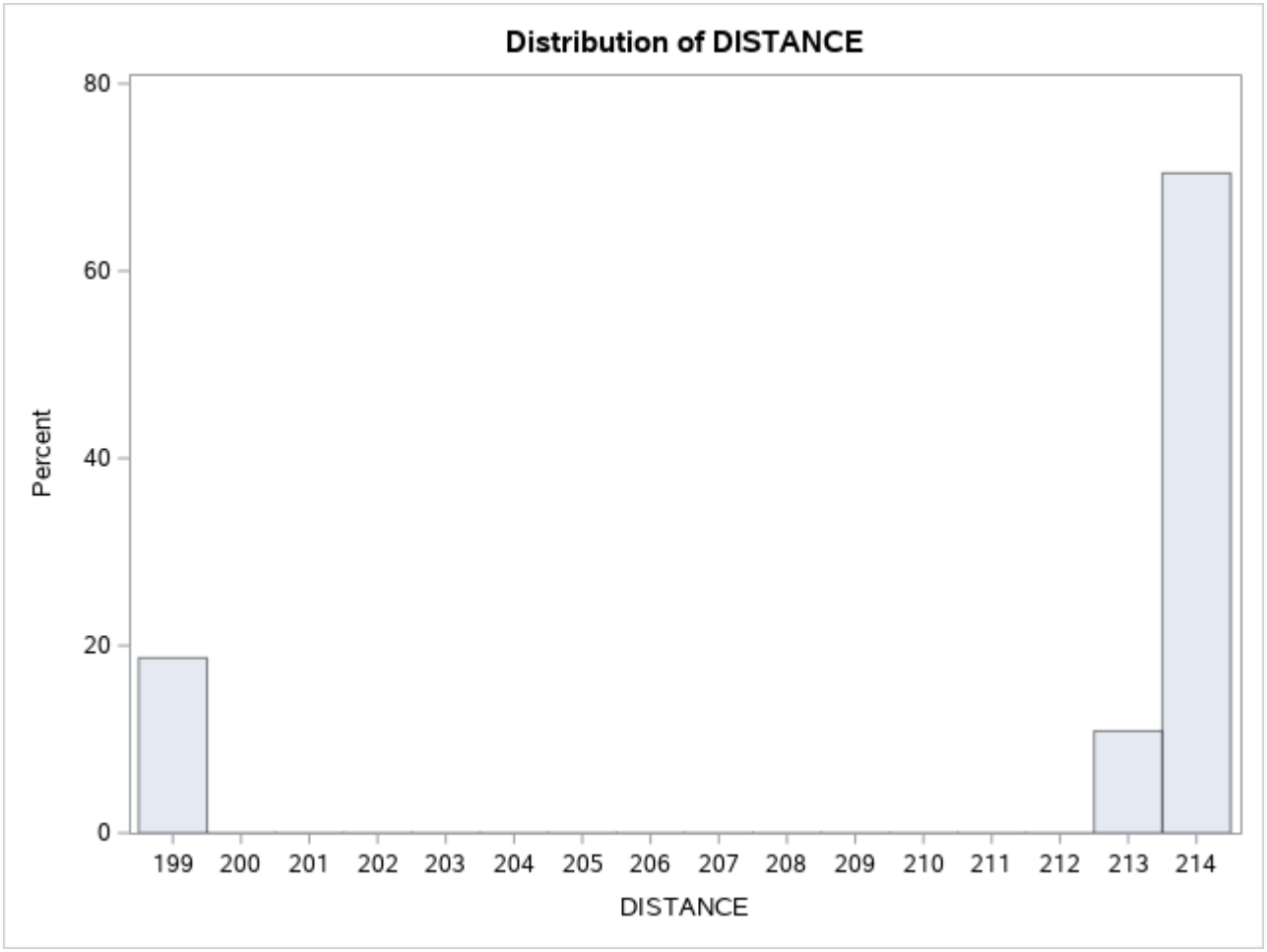
Tests for Location: Mu0=0				
Test	Statistic		p Value	
Student's t	t	1345.904	Pr > |t|	<.0001
Sign	M	685	Pr >= |M|	<.0001
Signed Rank	S	469567.5	Pr >= |S|	<.0001

Quantiles (Definition 5)	
Level	Quantile
100% Max	214
99%	214
95%	214
90%	214
75% Q3	214
50% Median	214
25% Q1	213
10%	199
5%	199
1%	199
0% Min	199

Extreme Observations			
Lowest		Highest	
Value	Obs	Value	Obs
199	1370	214	1360
199	1369	214	1361
199	1368	214	1362
199	1367	214	1363
199	1366	214	1364

Histogram representing the quantitative variables

The UNIVARIATE Procedure



Histogram representing the quantitative variables

The UNIVARIATE Procedure
Variable: FL_DATE

Moments			
N	1370	**Sum Weights**	1370
Mean	16086.1073	**Sum Observations**	22037967
Std Deviation	8.54444091	**Variance**	73.0074704
Skewness	0.04353289	**Kurtosis**	-1.1460507
Uncorrected SS	3.54505E11	**Corrected SS**	99947.227
Coeff Variation	0.0531169	**Std Error Mean**	0.23084654

Basic Statistical Measures			
Location		**Variability**	
Mean	16086.11	**Std Deviation**	8.54444
Median	16086.00	**Variance**	73.00747
Mode	16083.00	**Range**	30.00000
		Interquartile Range	14.00000

Note: The mode displayed is the smallest of 2 modes with a count of 56.

Tests for Location: Mu0=0				
Test	**Statistic**		**p Value**	
Student's t	**t**	69683.12	**Pr > |t|**	<.0001
Sign	**M**	685	**Pr >= |M|**	<.0001

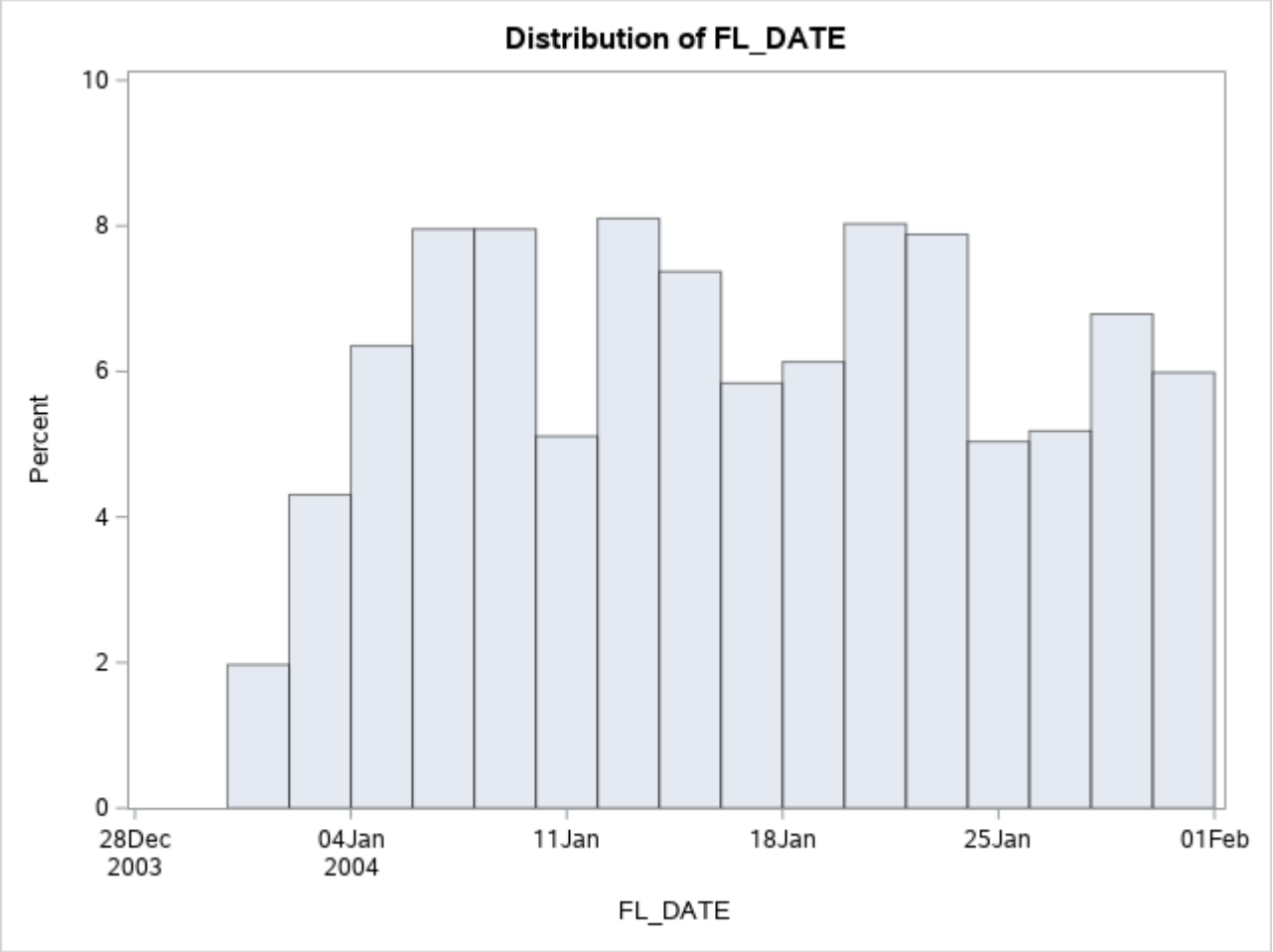
Tests for Location: Mu0=0				
Test	Statistic		p Value	
Signed Rank	S	469567.5	Pr >= |S|	<.0001

Quantiles (Definition 5)	
Level	Quantile
100% Max	16101
99%	16101
95%	16100
90%	16098
75% Q3	16093
50% Median	16086
25% Q1	16079
10%	16075
5%	16073
1%	16071
0% Min	16071

Extreme Observations			
Lowest		Highest	
Value	Obs	Value	Obs
16071	27	16101	1366
16071	26	16101	1367
16071	25	16101	1368
16071	24	16101	1369
16071	23	16101	1370

Histogram representing the quantitative variables

The UNIVARIATE Procedure



Histogram representing the quantitative variables

The UNIVARIATE Procedure
Variable: FL_NUM

Moments			
N	1370	**Sum Weights**	1370
Mean	2630.05474	**Sum Observations**	3603175
Std Deviation	1397.09603	**Variance**	1951877.32
Skewness	0.9638961	**Kurtosis**	-0.3548852
Uncorrected SS	1.21487E10	**Corrected SS**	2672120045
Coeff Variation	53.1204163	**Std Error Mean**	37.7455688

Basic Statistical Measures			
Location		**Variability**	
Mean	2630.055	**Std Deviation**	1397
Median	2172.000	**Variance**	1951877
Mode	746.000	**Range**	5409
		Interquartile Range	1123

Note: The mode displayed is the smallest of 4 modes with a count of 31.

Tests for Location: Mu0=0				
Test	**Statistic**		**p Value**	
Student's t	**t**	69.6785	**Pr > |t|**	<.0001
Sign	**M**	685	**Pr >= |M|**	<.0001

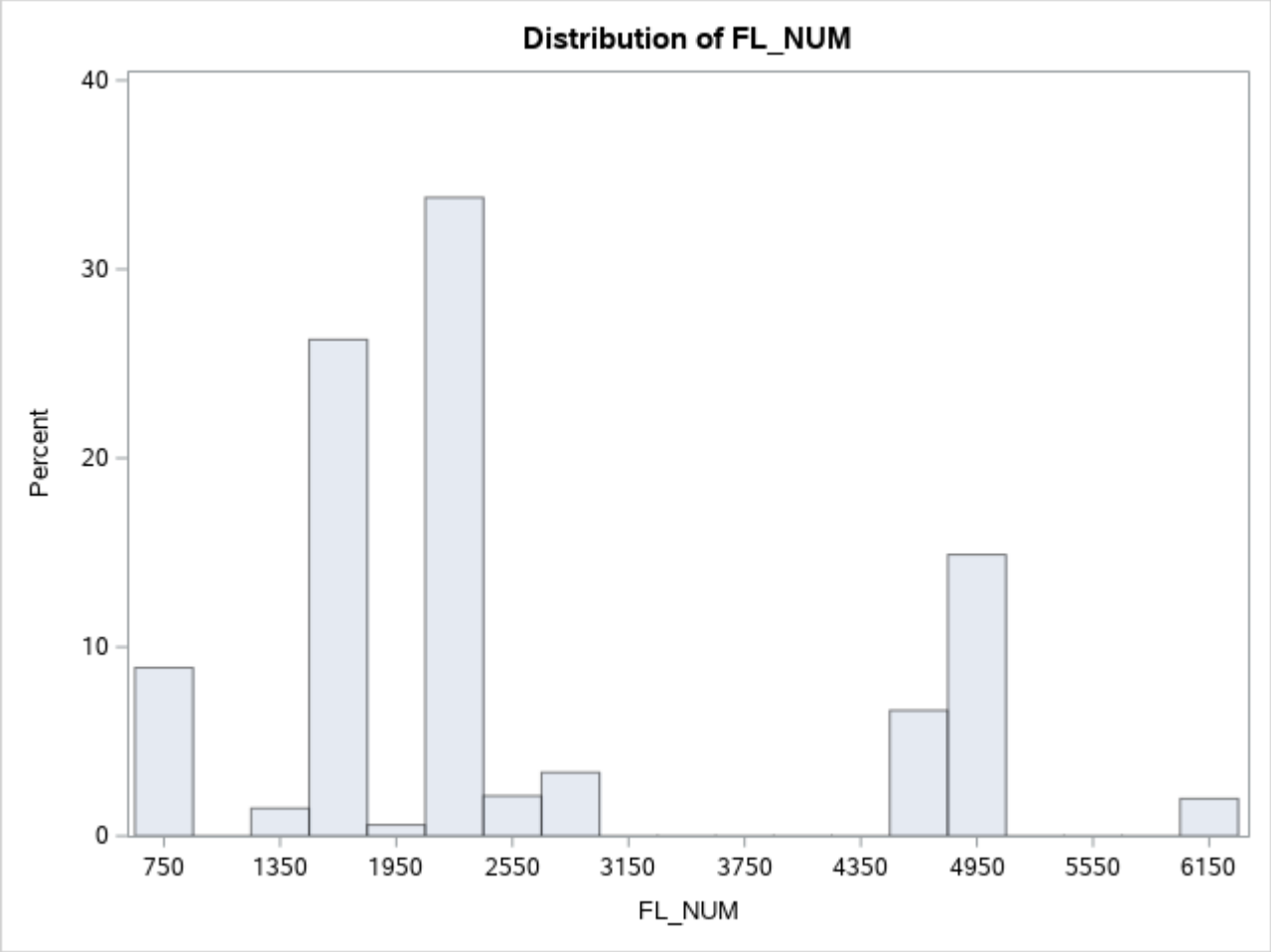
Tests for Location: Mu0=0				
Test	Statistic		p Value	
Signed Rank	S	469567.5	Pr >= |S|	<.0001

Quantiles (Definition 5)	
Level	Quantile
100% Max	6155
99%	6155
95%	4972
90%	4964
75% Q3	2879
50% Median	2172
25% Q1	1756
10%	1479
5%	808
1%	746
0% Min	746

Extreme Observations			
Lowest		Highest	
Value	Obs	Value	Obs
746	1344	6155	1164
746	1290	6155	1196
746	1237	6155	1236
746	1197	6155	1289
746	1165	6155	1343

Histogram representing the quantitative variables

The UNIVARIATE Procedure



Histogram representing the quantitative variables

The UNIVARIATE Procedure
Variable: Weather

Moments			
N	1370	**Sum Weights**	1370
Mean	0.01240876	**Sum Observations**	17
Std Deviation	0.11074174	**Variance**	0.01226373
Skewness	8.81879017	**Kurtosis**	75.8818345
Uncorrected SS	17	**Corrected SS**	16.7890511
Coeff Variation	892.448157	**Std Error Mean**	0.00299193

Basic Statistical Measures			
Location		**Variability**	
Mean	0.012409	**Std Deviation**	0.11074
Median	0.000000	**Variance**	0.01226
Mode	0.000000	**Range**	1.00000
		Interquartile Range	0

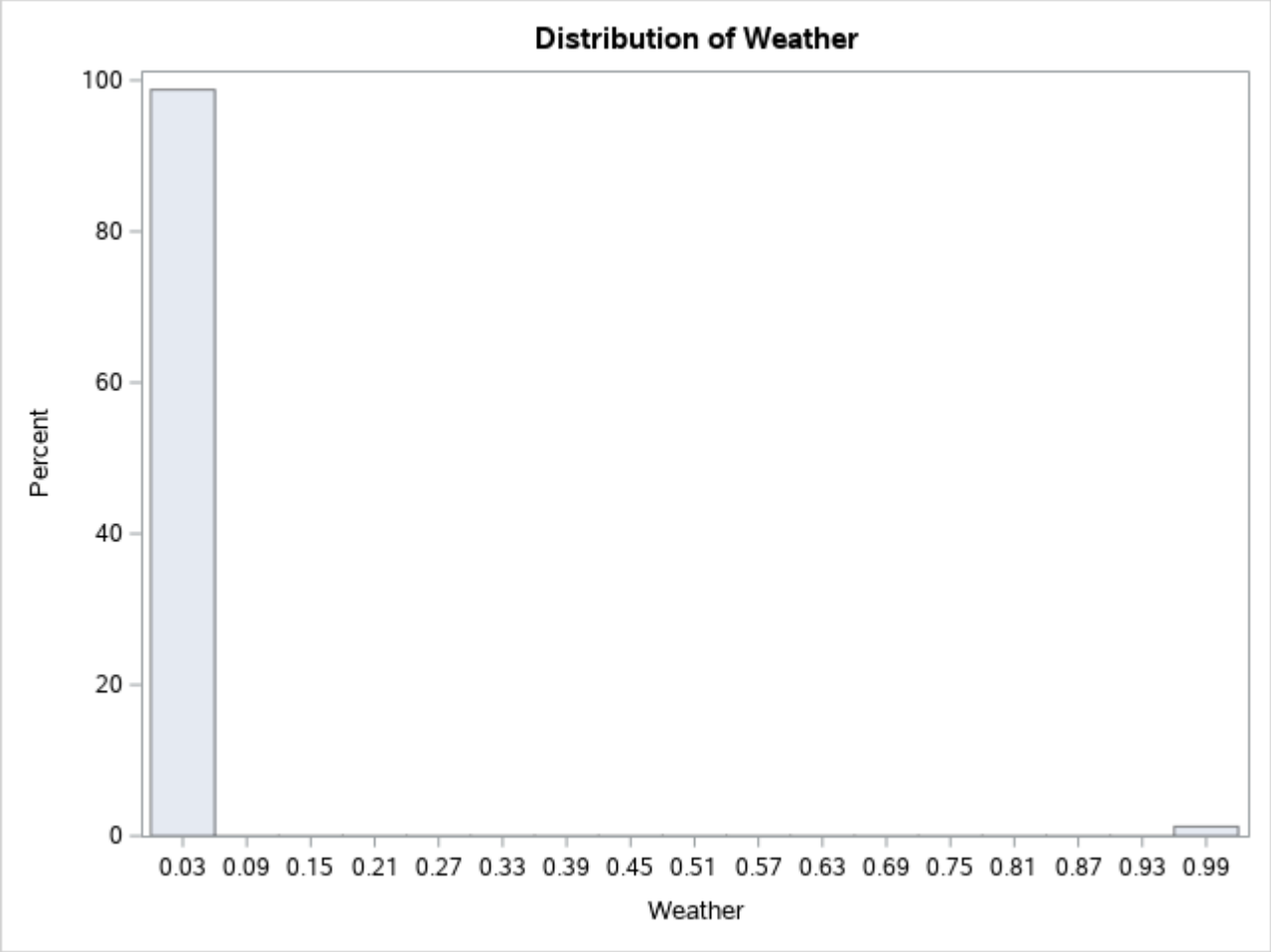
Tests for Location: Mu0=0				
Test	**Statistic**		**p Value**	
Student's t	**t**	4.147413	**Pr > |t|**	<.0001
Sign	**M**	8.5	**Pr >= |M|**	<.0001
Signed Rank	**S**	76.5	**Pr >= |S|**	<.0001

Quantiles (Definition 5)	
Level	**Quantile**
100% Max	1
99%	1
95%	0
90%	0
75% Q3	0
50% Median	0
25% Q1	0
10%	0
5%	0
1%	0
0% Min	0

Extreme Observations			
Lowest		**Highest**	
Value	**Obs**	**Value**	**Obs**
0	1370	1	1175
0	1369	1	1178
0	1368	1	1180
0	1367	1	1193
0	1366	1	1309

Histogram representing the quantitative variables

The UNIVARIATE Procedure



Histogram representing the quantitative variables

The UNIVARIATE Procedure
Variable: DAY_WEEK

Moments			
N	1370	**Sum Weights**	1370
Mean	3.84525547	**Sum Observations**	5268
Std Deviation	1.88980467	**Variance**	3.5713617
Skewness	0.06945538	**Kurtosis**	-1.068596
Uncorrected SS	25146	**Corrected SS**	4889.19416
Coeff Variation	49.1464009	**Std Error Mean**	0.05105716

Basic Statistical Measures			
Location		**Variability**	
Mean	3.845255	**Std Deviation**	1.88980
Median	4.000000	**Variance**	3.57136
Mode	5.000000	**Range**	6.00000
		Interquartile Range	3.00000

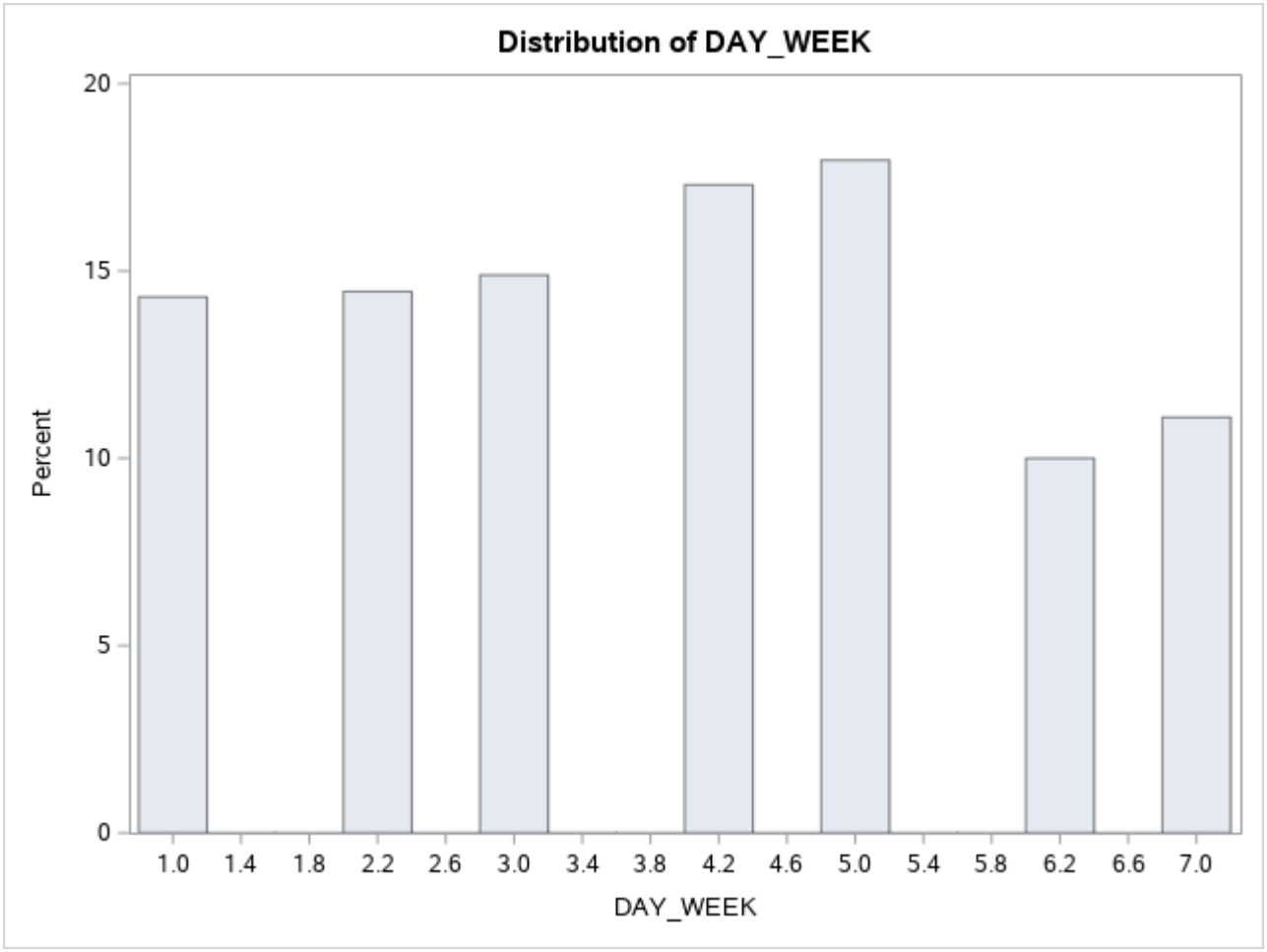
Tests for Location: Mu0=0				
Test	**Statistic**		**p Value**	
Student's t	**t**	75.31276	**Pr > |t|**	<.0001
Sign	**M**	685	**Pr >= |M|**	<.0001
Signed Rank	**S**	469567.5	**Pr >= |S|**	<.0001

Quantiles (Definition 5)	
Level	**Quantile**
100% Max	7
99%	7
95%	7
90%	7
75% Q3	5
50% Median	4
25% Q1	2
10%	1
5%	1
1%	1
0% Min	1

Extreme Observations			
Lowest		**Highest**	
Value	**Obs**	**Value**	**Obs**
1	1163	7	1120
1	1162	7	1121
1	1161	7	1122
1	1160	7	1123
1	1159	7	1124

Histogram representing the quantitative variables

The UNIVARIATE Procedure



Histogram representing the quantitative variables

The UNIVARIATE Procedure
Variable: DAY_OF_MONTH

Moments			
N	1370	**Sum Weights**	1370
Mean	16.1072993	**Sum Observations**	22067
Std Deviation	8.54444091	**Variance**	73.0074704
Skewness	0.04353289	**Kurtosis**	-1.1460507
Uncorrected SS	455387	**Corrected SS**	99947.227
Coeff Variation	53.0470116	**Std Error Mean**	0.23084654

Basic Statistical Measures			
Location		**Variability**	
Mean	16.10730	**Std Deviation**	8.54444
Median	16.00000	**Variance**	73.00747
Mode	13.00000	**Range**	30.00000
		Interquartile Range	14.00000

Note: The mode displayed is the smallest of 2 modes with a count of 56.

Tests for Location: Mu0=0				
Test	**Statistic**		**p Value**	
Student's t	**t**	69.77492	**Pr > |t|**	<.0001
Sign	**M**	685	**Pr >= |M|**	<.0001

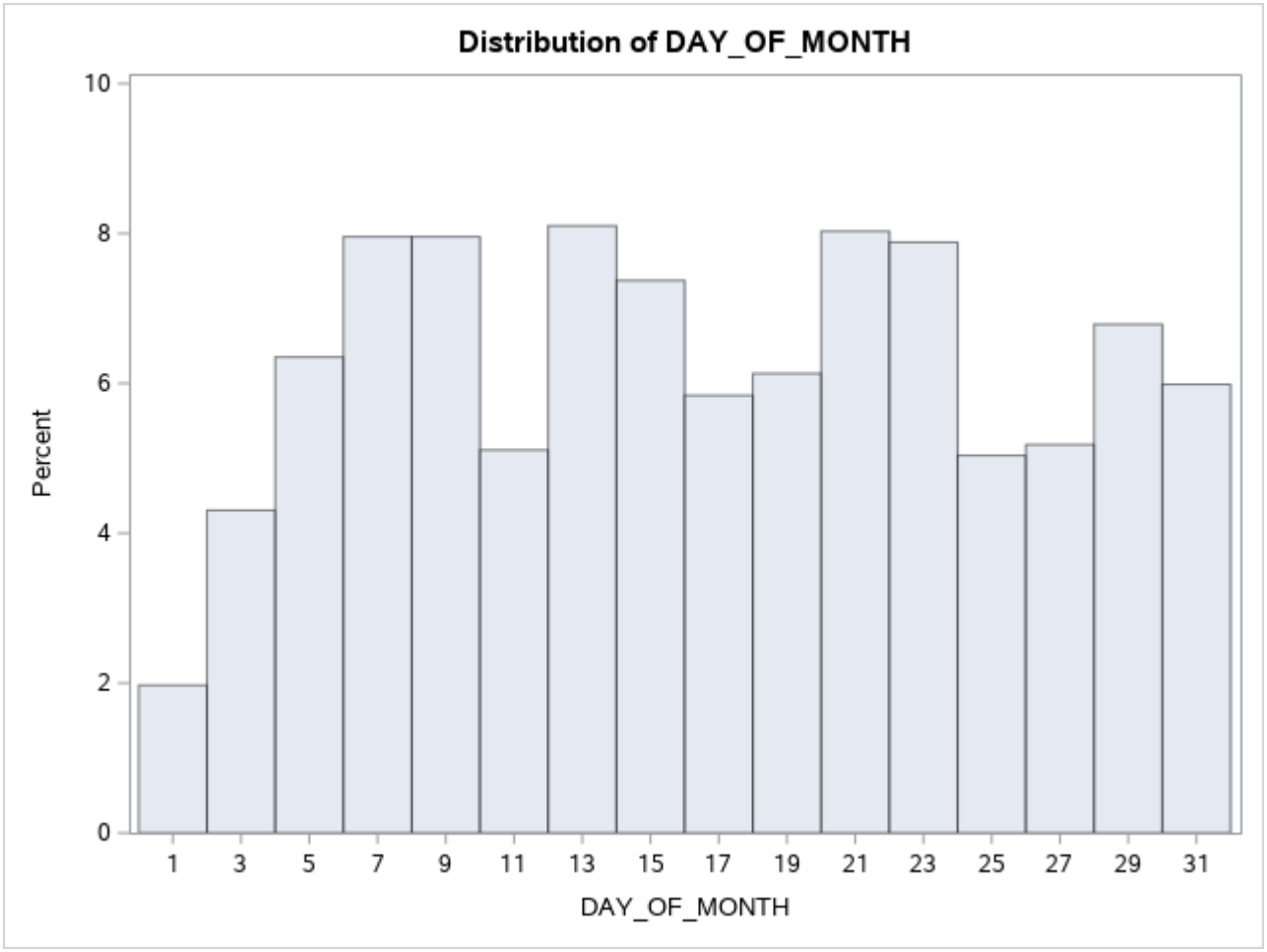
Tests for Location: Mu0=0				
Test	Statistic		p Value	
Signed Rank	S	469567.5	Pr >= |S|	<.0001

Quantiles (Definition 5)	
Level	Quantile
100% Max	31
99%	31
95%	30
90%	28
75% Q3	23
50% Median	16
25% Q1	9
10%	5
5%	3
1%	1
0% Min	1

Extreme Observations			
Lowest		Highest	
Value	Obs	Value	Obs
1	27	31	1366
1	26	31	1367
1	25	31	1368
1	24	31	1369
1	23	31	1370

Histogram representing the quantitative variables

The UNIVARIATE Procedure


Distribution of DAY_OF_MONTH
Percent
10
8
6
4
2
0
1
3
5
7
9
11
13
15
17
19
21
23
25
27
29
31
DAY_OF_MONTH