Weight of NBA player n=30

01:08 Sunday, April 09, 2023

The SURVEYSELECT Procedure

My code with its comments is posted below. The following pages are the outputs I exported. I highlighted the parts of code that corresponds to the instructions posted. I used the same sample data I used for HW1.

```
ods rtf file="C:\Users\lb943\Box\HW3_LukeBeebe_lb943_nbaplayers" style=journal;
/* import data */
proc import out=all_seasons
datafile="C:\Users\lb943\Box\all_seasons.csv"
dbms=csv
replace;
getnames=YES;
run;
/* same simple random sample from HW1 */
proc surveyselect data=all_seasons
out=sample
method=srs
sampsize=30
seed=123;
run;
/* uses quintiles to seperate player's positions based on height and weight */
data sample2;
set sample;
if player_height>=209.55 then height_position=5;
if 203.2<=player_height<209.55 then height_position=4;
if 198.12<=player_height<203.2 then height_position=3;
if 193.04<=player_height<198.12 then height_position=2;
if player_height<193.04 then height_position=1;
if player_weight>=115.212 then weight_position=5;
if 107.048<=player_weight<115.212 then weight_position=4;
if 98.2027<=player_weight<107.048 then weight_position=3;
if 92.3060<=player_weight<98.2027 then weight_position=2;
if player_weight<92.3060 then weight_position=1;
run;
/* create bar charts */
proc chart data=sample2;
vbar height_position;
title1 'Bar Chart of Positions in NBA by height n=30';
run;
proc chart data=sample2;
vbar weight_position;
title1 'Bar Chart of Positions in NBA by weight n=30';
run;
/* create histograms */
proc univariate data=sample2;
var height_position;
histogram height_position;
title1 'Freq of Positions in NBA by height n=30';
run;
proc univariate data=sample2;
var weight_position;
histogram weight_position;
title1 'Freq of Positions in NBA by weight n=30';
```

```
run;
/* create freq tables */
proc freq data=sample2;
tables height_position;
run;
proc freq data=sample2;
tables weight_position;
run;
/* table for two classification vars */
proc tabulate data=sample2;
var height_position weight_position;
table (height_position weight_position)*(N MEAN STD MIN MAX);
title1 'Height vs Weight positioning';
run;
/* boxplots for height and weight */
proc sgplot data=sample2;
vbox player_height;
title1 'Height of NBA players n=30';
run;
proc sgplot data=sample2;
vbox player_weight;
title1 'Weight of NBA player n=30';
run;
/* scatter plot for height by weight */
proc plot data=sample2;
plot player_weight*player_height;
run;
proc sgscatter data=sample2;
plot player_weight*player_height;
run;
ods rtf close;
```

Weight of NBA player n=30

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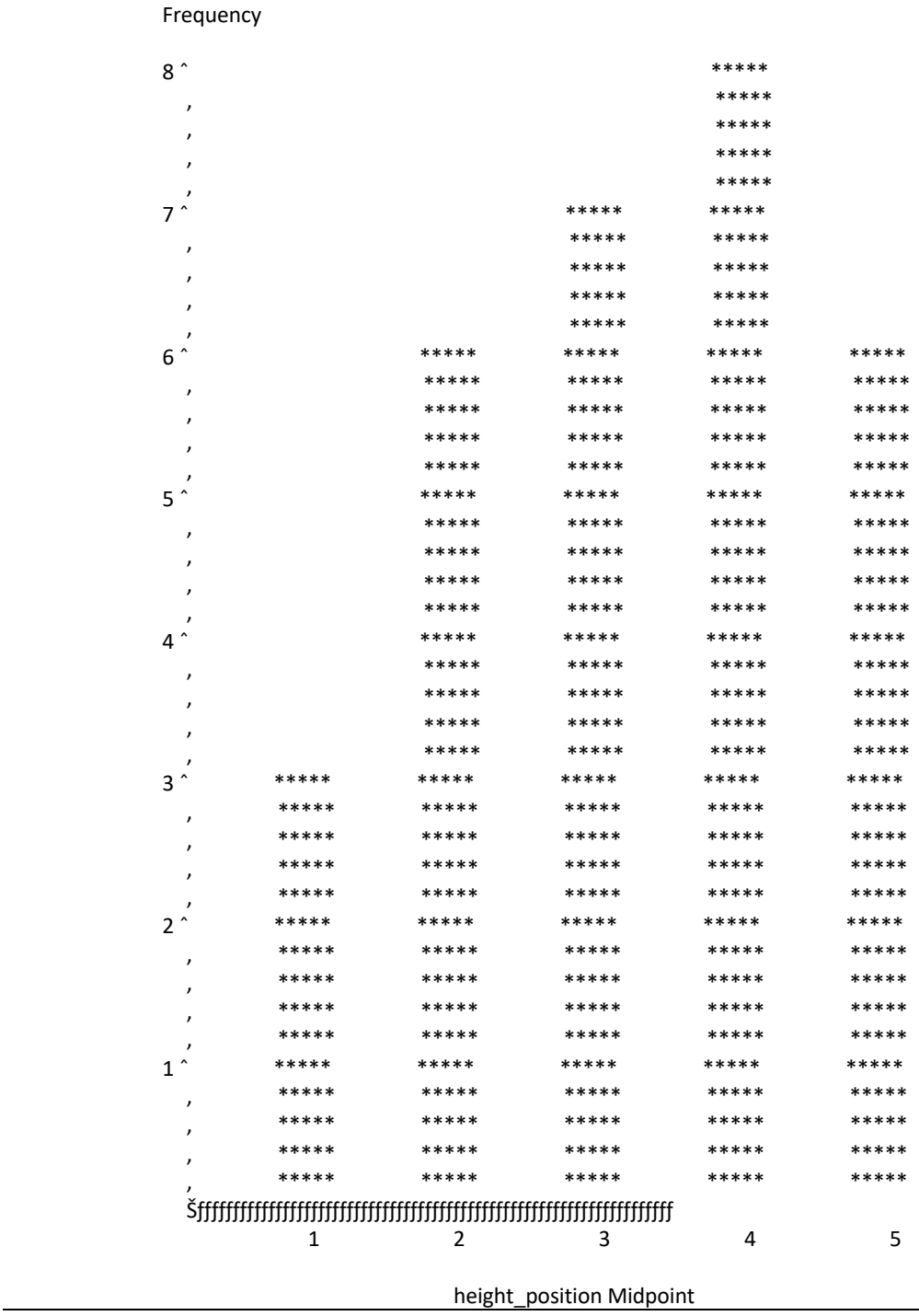
The SURVEYSELECT Procedure

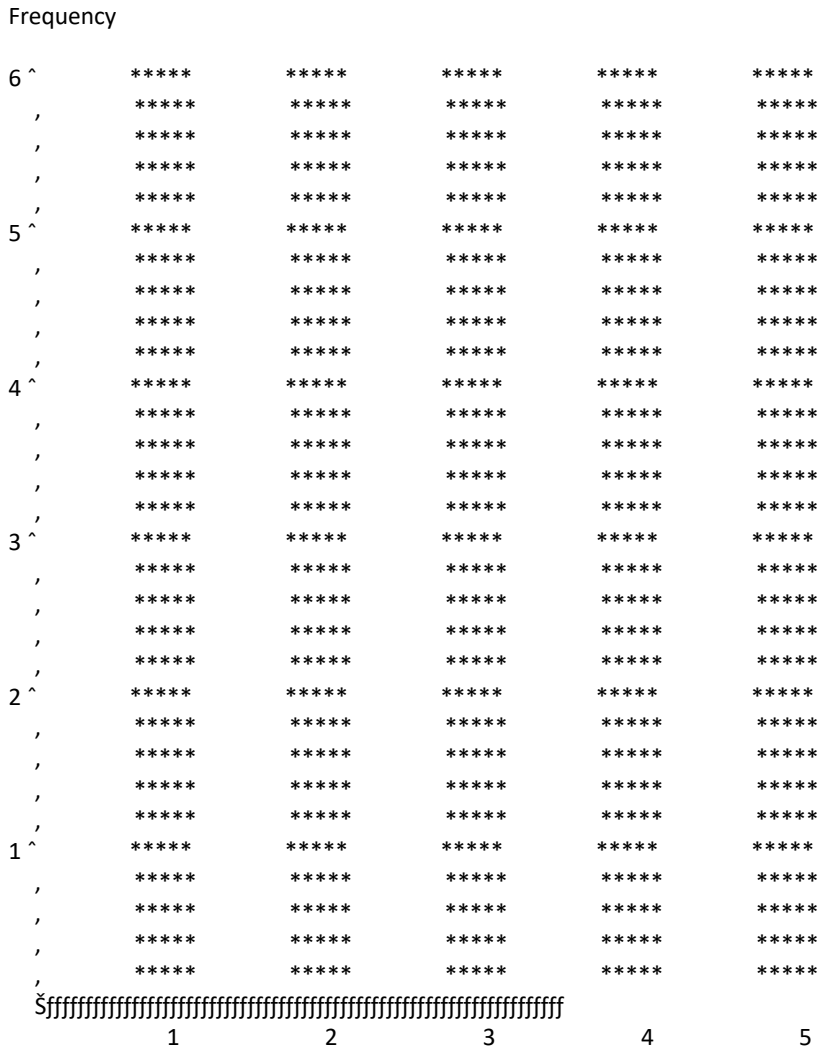
Selection Method	Simple Random Sampling

Input Data Set	ALL_SEASONS
Random Number Seed	123
Sample Size	30
Selection Probability	0.002438
Sampling Weight	410.16667
Output Data Set	SAMPLE

Bar Chart of Positions in NBA by height n=30



Bar Chart of Positions in NBA by weight n=30



Freq of Positions in NBA by height n=30

The UNIVARIATE Procedure
Variable: height_position

Moments			
N	30	*Sum Weights*	30
Mean	3.26666667	*Sum Observations*	98
Std Deviation	1.28474694	*Variance*	1.65057471
Skewness	-0.2240931	*Kurtosis*	-0.9839531
Uncorrected SS	368	*Corrected SS*	47.8666667
Coeff Variation	39.3289881	*Std Error Mean*	0.23456163

Basic Statistical Measures			
Location		*Variability*	
Mean	3.266667	*Std Deviation*	1.28475
Median	3.000000	*Variance*	1.65057
Mode	4.000000	*Range*	4.00000
		Interquartile Range	2.00000

Tests for Location: Mu0=0				
Test		*Statistic*	*p Value*	
Student's t	*t*	13.92669	*Pr* > |*t*|	<.0001
Sign	*M*	15	*Pr* >= |*M*|	<.0001
Signed Rank	*S*	232.5	*Pr* >= |*S*|	<.0001

Quantiles (Definition 5)	
Level	*Quantile*
100% Max	5.0
99%	5.0
95%	5.0
90%	5.0
75% Q3	4.0
50% Median	3.0
25% Q1	2.0
10%	1.5
5%	1.0
1%	1.0
0% Min	1.0

Freq of Positions in NBA by height n=30

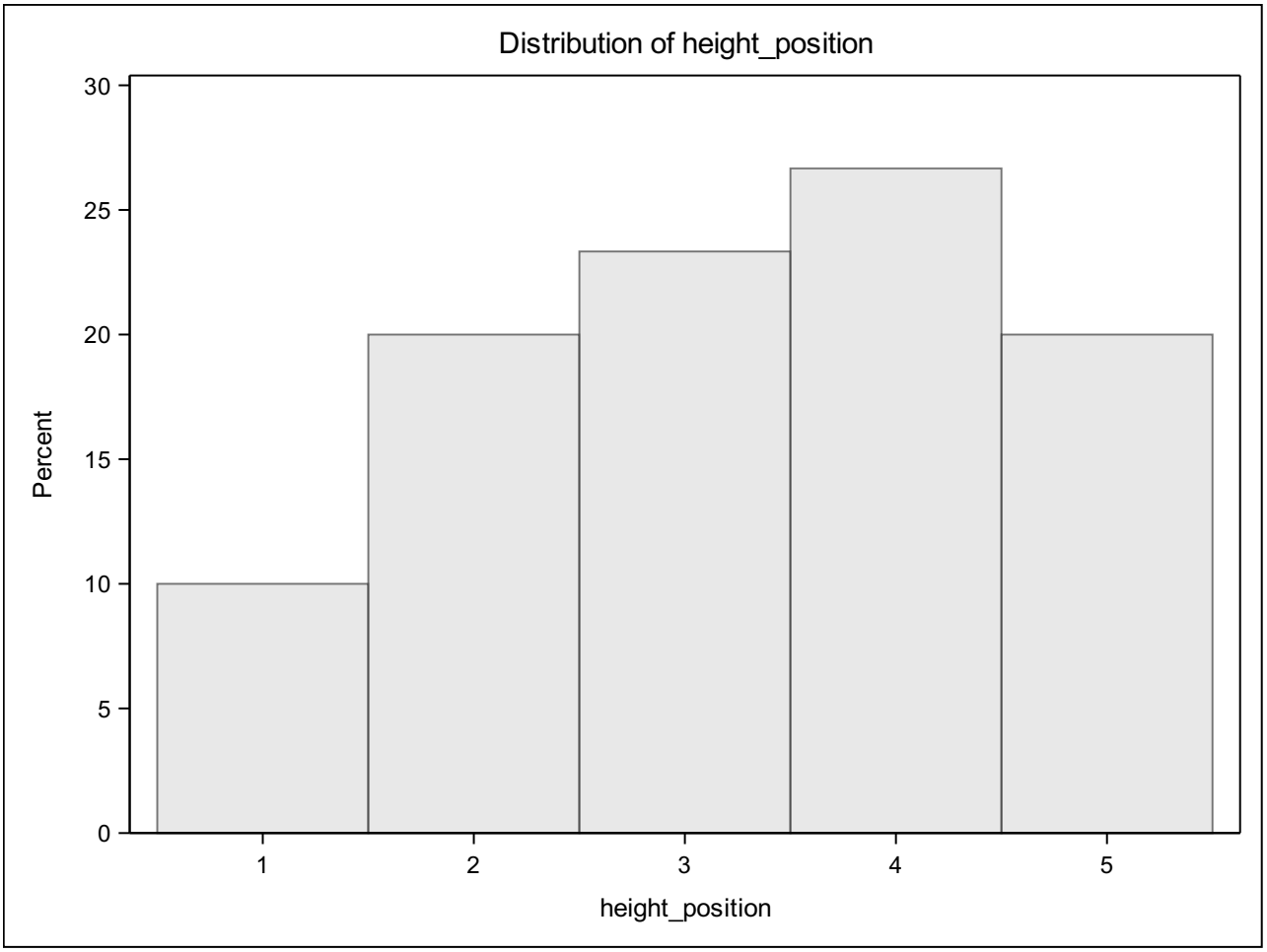
The UNIVARIATE Procedure
Variable: height_position

Extreme Observations

Lowest		*Highest*	
Value	*Obs*	*Value*	*Obs*
1	21	5	7
1	12	5	15
1	4	5	16
2	27	5	19
2	26	5	30

Freq of Positions in NBA by height n=30

The UNIVARIATE Procedure



Freq of Positions in NBA by weight n=30

The UNIVARIATE Procedure
Variable: weight_position

Moments			
N	30	*Sum Weights*	30
Mean	3	*Sum Observations*	90
Std Deviation	1.4383899	*Variance*	2.06896552
Skewness	0	*Kurtosis*	-1.3157407
Uncorrected SS	330	*Corrected SS*	60
Coeff Variation	47.9463301	*Std Error Mean*	0.26261287

Basic Statistical Measures			
Location		*Variability*	
Mean	3.000000	*Std Deviation*	1.43839
Median	3.000000	*Variance*	2.06897
Mode	1.000000	*Range*	4.00000
		Interquartile Range	2.00000

Note: The mode displayed is the smallest of 5 modes with a count of 6.

Tests for Location: Mu0=0				
Test		*Statistic*	*p Value*	
Student's t	*t*	11.42366	*Pr* > |*t*|	<.0001
Sign	*M*	15	*Pr* >= |*M*|	<.0001
Signed Rank	*S*	232.5	*Pr* >= |*S*|	<.0001

Quantiles (Definition 5)	
Level	*Quantile*
100% Max	5
99%	5
95%	5
90%	5
75% Q3	4
50% Median	3
25% Q1	2
10%	1
5%	1

Freq of Positions in NBA by weight n=30

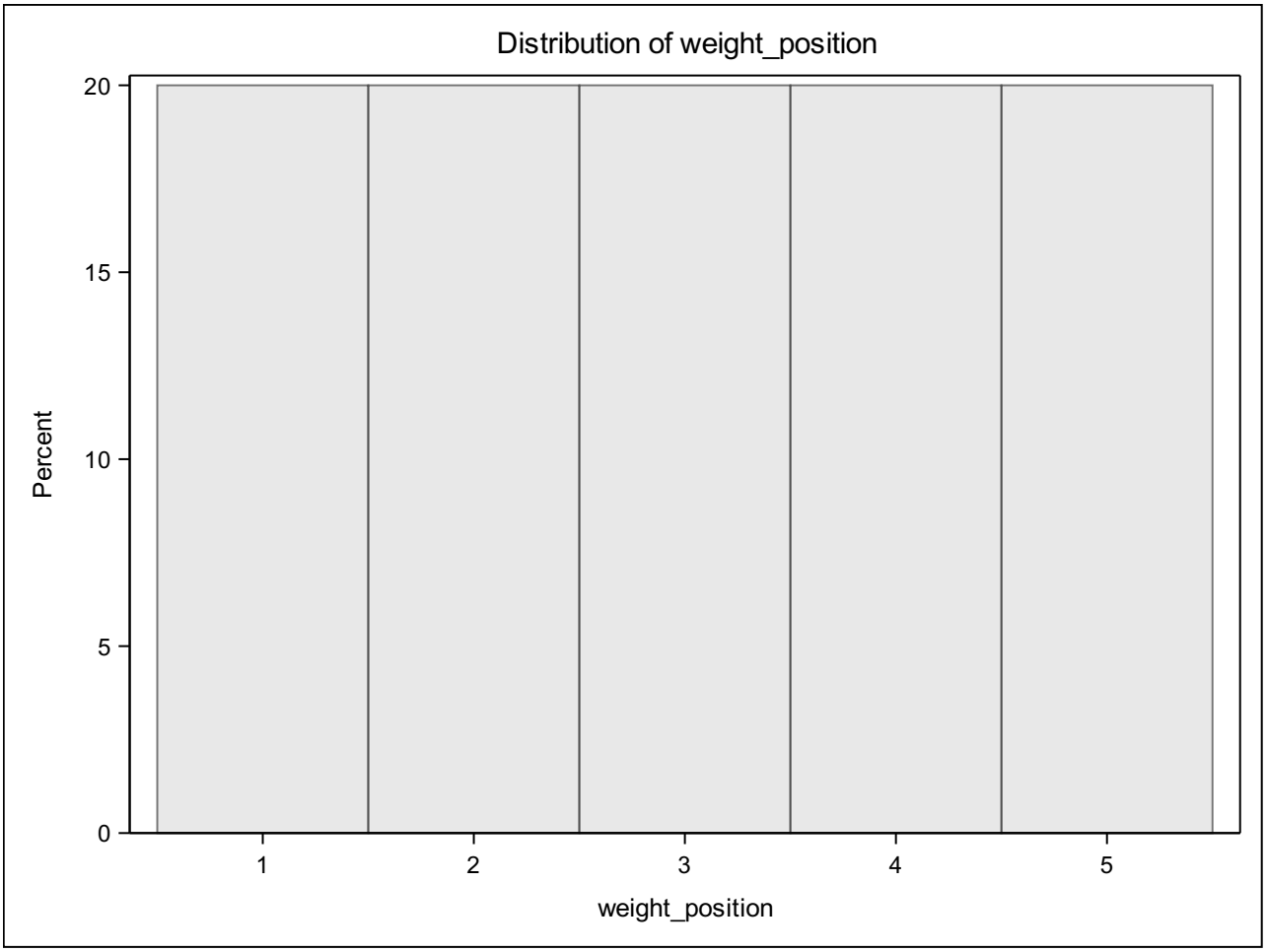
The UNIVARIATE Procedure
Variable: weight_position

Quantiles (Definition 5)	
Level	*Quantile*
1%	1
0% Min	1

Extreme Observations			
Lowest		*Highest*	
Value	*Obs*	*Value*	*Obs*
1	24	5	7
1	21	5	9
1	14	5	10
1	12	5	15
1	8	5	23

Freq of Positions in NBA by weight n=30

The UNIVARIATE Procedure



Freq of Positions in NBA by weight n=30

The FREQ Procedure

height_position	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	3	10.00	3	10.00
2	6	20.00	9	30.00
3	7	23.33	16	53.33
4	8	26.67	24	80.00
5	6	20.00	30	100.00

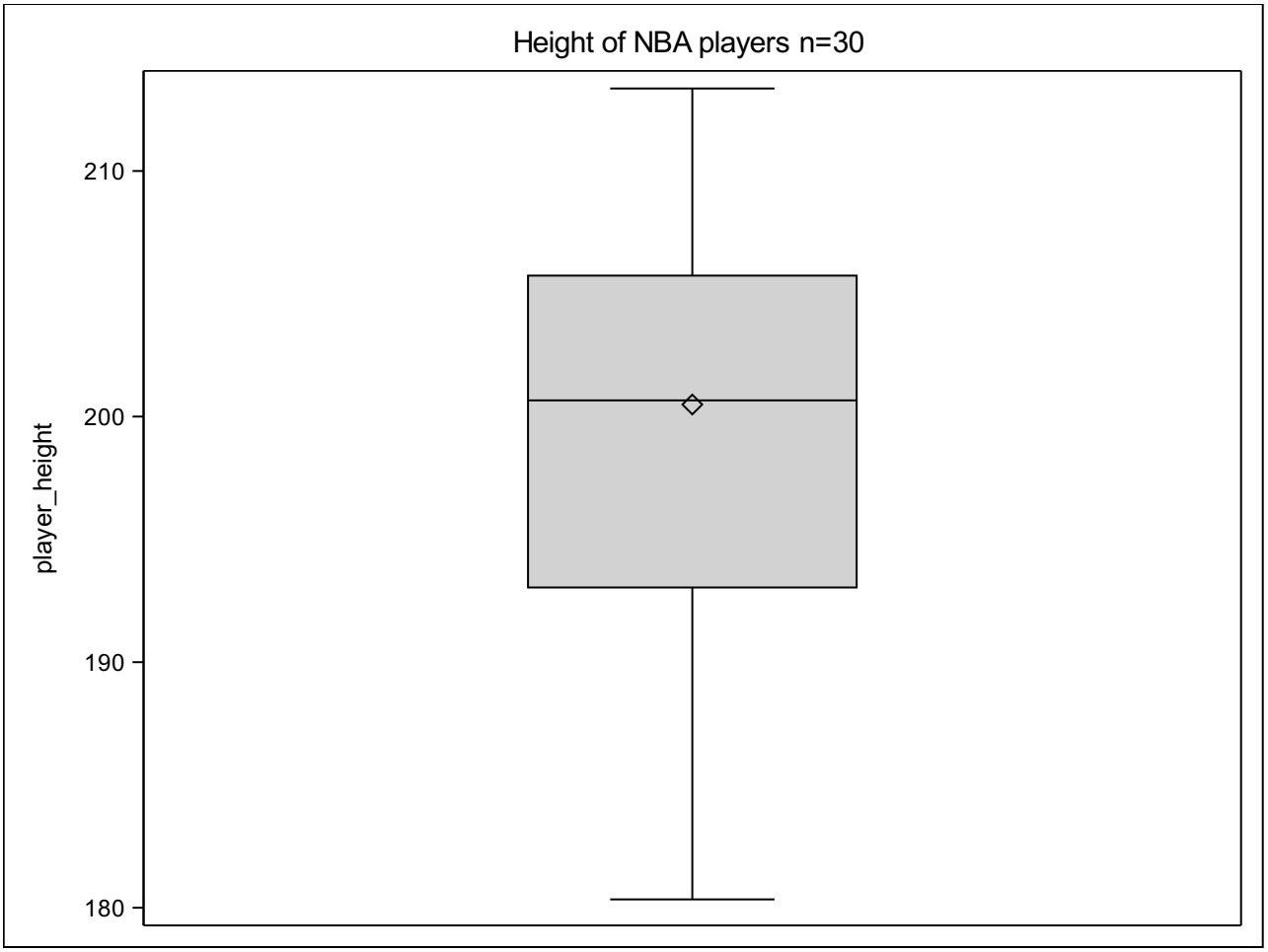
Freq of Positions in NBA by weight n=30

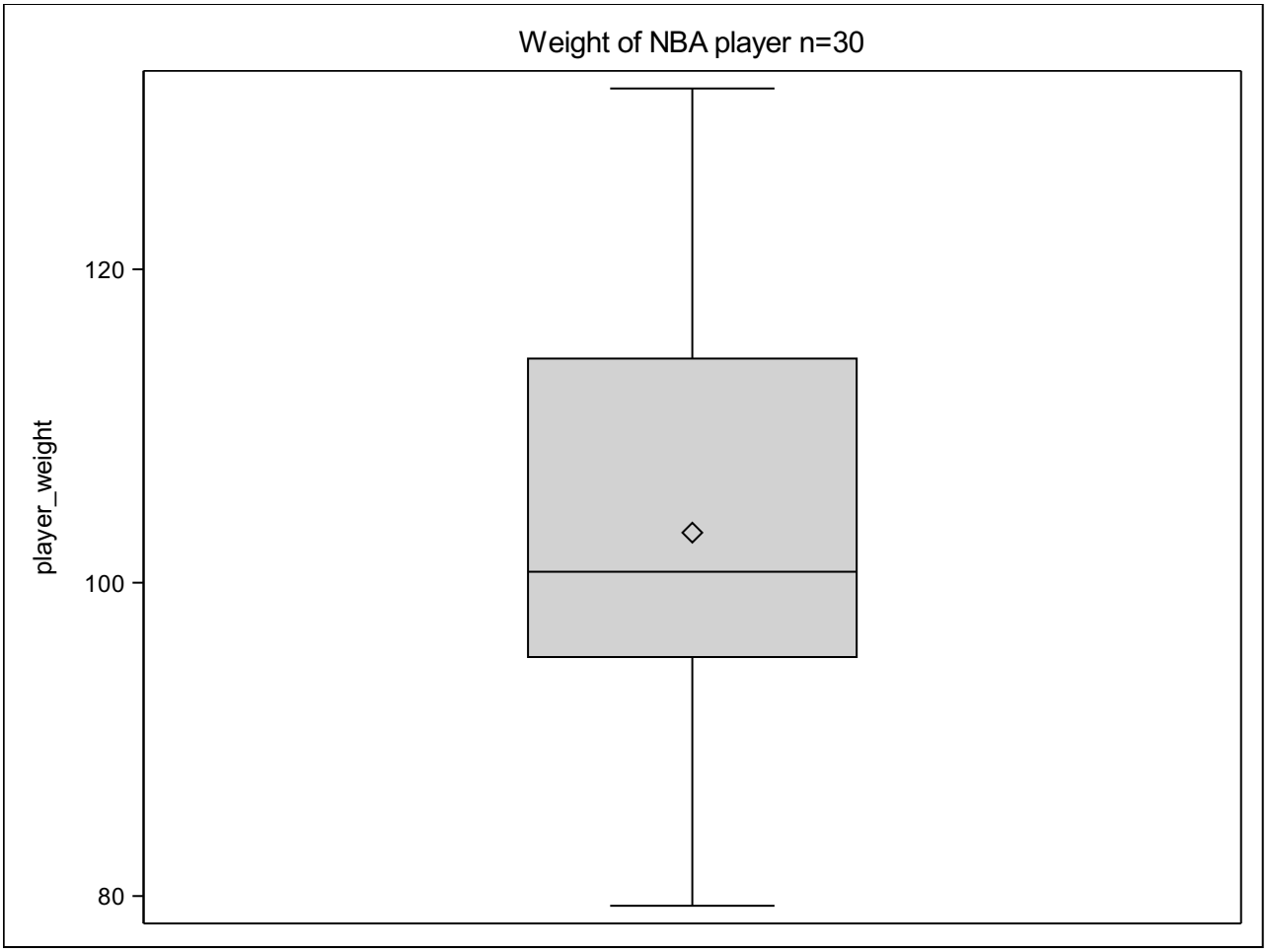
The FREQ Procedure

weight_position	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	6	20.00	6	20.00
2	6	20.00	12	40.00
3	6	20.00	18	60.00
4	6	20.00	24	80.00
5	6	20.00	30	100.00

Height vs Weight positioning

	height_position					*weight_position*			
N	*Mean*	*Std*	*Min*	*Max*	*N*	*Mean*	*Std*	*Min*	*Max*
30	3.27	1.28	1.00	5.00	30	3.00	1.44	1.00	5.00


Height of NBA players n=30
player_height
210
200
190
180


Weight of NBA player n=30
player_weight
120
100
80

Weight of NBA player n=30