BootStrap Regression

Code

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```
library(car)
library(QuantPsyc)
library(boot)
library(dplyr) # data mainpulation
library(cowplot)
library(ggplot2)
```

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```
df2<- read.delim('/home/atrides/Desktop/R/statistics_with_R/07_Regression/Da
ta_Files/album.dat', header=TRUE)

head(df2)
```

	adverts <dbl>	sal… <int>	airplay <int>	attract <int>	residuals <dbl>	standarized.residuals <dbl>	stud
1	10.256	330	43	10	100.079745	2.1774041	
2	985.685	120	28	7	-108.948992	-2.3230828	
3	1445.563	360	35	7	68.442368	1.4688016	
4	1188.193	270	33	7	7.024026	0.1501160	
5	574.513	220	44	5	-5.752861	-0.1237983	
6	568.954	170	19	5	28.904643	0.6182597	

6 rows | 1-8 of 19 columns

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```
bootReg<- function(formula, data, i){
  d<- data[i, ]
  fit<- lm(formula, data=d)
  return(coef(fit))
}

bootResults<- boot(statistic = bootReg, formula=sales~adverts+airplay+attrac
t, data=df2, R=2000)
```

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```
print(boot.ci(bootResults,type='bca', index=2))
```

```
BOOTSTRAP CONFIDENCE INTERVAL CALCULATIONS
Based on 2000 bootstrap replicates

CALL :
boot.ci(boot.out = bootResults, type = "bca", index = 2)

Intervals :
Level       BCa
95%   ( 0.0693,  0.0978 )
Calculations and Intervals on Original Scale
```

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```
print(boot.ci(bootResults,type='bca', index=3))
```

```
BOOTSTRAP CONFIDENCE INTERVAL CALCULATIONS
Based on 2000 bootstrap replicates

CALL :
boot.ci(boot.out = bootResults, type = "bca", index = 3)

Intervals :
Level       BCa
95%   ( 2.740,  4.004 )
Calculations and Intervals on Original Scale
```

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```
print(boot.ci(bootResults,type='bca', index=4))
```

```
BOOTSTRAP CONFIDENCE INTERVAL CALCULATIONS
Based on 2000 bootstrap replicates

CALL :
boot.ci(boot.out = bootResults, type = "bca", index = 4)

Intervals :
Level       BCa
95%   ( 6.39, 15.43 )
Calculations and Intervals on Original Scale
```