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Reflect on the Question

Analyze the Data

Draw Conclusions

Primary Research Question

How has the men's shotput world record changed over time? What about the women's world record?

Breakdown Your Analysis

Let's break this analysis into its required steps:

1. Create a subset of the dataset that contains only the World Record cases for men's shotput.
2. Create a subset that contains only the World Record cases for women's shotput.
3. Create a scatterplot of year and record shotput distance: one for men and one for women.
4. Confirm from these plots that a linear model is appropriate.
5. Run a linear model for each event and then interpret the results.

Here is the code you will use:

```
#Invoke the SDSFoundataions package
```

```
library(SDSFoundations)
```

```
#Subset the data
```

```
menshot <- WR[WR$Event=='Mens Shotput',]
```

```
womenshot <- WR[WR$Event=='Womens Shotput',]
```

```
#Create scatterplots
```

```
plot(menshot$Year,menshot$Record,main='Mens Shotput World Records',xlab='Year',ylab='World Record Distance (m)',pch=16)
```

```
plot(womenshot$Year,womenshot$Record,main='Womens Shotput World Records',xlab='Year',ylab='World Record Distance (m)',pch=16)
```

```
#Run linear models
```

```
linFit(menshot$Year, menshot$Record)
```

```
linFit(womenshot$Year,womenshot$Record)
```

(4/4 points)

1) What is the best description of what will be included in the new dataframe "**menshot**"?

- ☐ Only those columns in WR that include data from the men's shotput.
- ☐ All rows and columns from WR.
- ☒ Only those rows in WR that include the event Mens Shotput. ✓

CORRECT. "MENSHOT" CONSISTS OF ONLY THOSE ROWS PERTAIN TO MENS' SHOTPUT EVENT AND NO OTHERS.

2) Which variable will be on the x-axis of each scatterplot?

- ☐ sex (male or female)
- ☒ year ✓
- ☐ distance

CORRECT. SCATTERPLOTS ARE CODED IN R AS "PLOT(X,Y)." IN THIS CASE "X" IS CONSTITUED BY THE VARIABLE "YEAR." IT MAKES MORE SENSE TO TREAT "YEAR" AS AN INDEPENDENT RATHER THAN DEPENDENT VARIABLE GIVEN THE CONTEXT.


3) Which function will we use to fit a linear model to the world record data?

- ☒ linFit ✓
- ☐ menshot
- ☐ plot

CORRECT. THIS FUNCTION WILL RESULT IN A LINEAR REGRESSION LINE VISUALIZED OVER SCATTERPLOT, AS WELL AS ITS SLOPE, INTERCEPT, AND VARIANCE VALUES.

Help

4) What is the **dependent** variable in our linear models?

- ☐ sex (male or female)
- ☒ shotput distance 
- ☐ year

CORRECT. SHOTPUT DISTANCE IS ON OUR VERTICAL ACCESS, AS MOST LIKELY, WE WILL WANT USE YEAR TO PREDICT SHOTPUT DISTANCE.

Final Check

Save

Hide Answer

You have used 1 of 2 submissions



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