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:

```
#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)
```

Lecture Videos
Comprehension Check due Mar 15, 2016 at 18:00 UTC

R Tutorial Videos

Pre-Lab
Pre-Lab due Mar 15, 2016 at 18:00 UTC

Lab
Lab due Mar 15, 2016 at 18:00 UTC

Problem Set
Problem Set due Mar 15, 2016 at 18:00 UT

(1/1 point)
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. ✔

Click here for a video explanation of how to answer this question.

You have used 1 of 1 submissions

(1/1 point)
2) Which variable will be on the x-axis of each scatterplot?

- Sex (male or female)
- Year ✔
- Distance

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(1/1 point)
3) Which function will we use to fit a linear model to the world record data?

- linFit ✔

- menshot
- plot

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(1/1 point)

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

- Sex (male or female)
- Shotput distance ✔
- Year

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(1/1 point)

5) Suppose we wanted to subset our dataset for only world records that were from 1990 and later. What caused the error below? (You may want to examine the dataset in R for help.)

```
WR<-WorldRecords
recent<-WR[Year>=1990,]

Error in [.data.frame (WR, Year >= 1990, ) : object
'Year' not found
```

- We forgot to tell R to look in the "recent" dataset for "Year" (ie. recent$Year).

- (●) We forgot to tell R to look in the "WR" dataset for "Year" (ie. WR$Year).> ✔
- ( ) We need quotation marks around 1990 even though it is numerical.
- ( ) The "Year" variable is spelled differently in our dataset.

Click here for a video explanation of how to answer this question.

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