# Please use "<-" sign but not "=" to assign objects

# Please write as simple as possible

# You can write some explanation in words, as comments

# GOOD LUCK!

# 1. Set your working directory and then download and use libraries XML, httr, ggplot2

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# 2. Go to: https://www.wunderground.com/

# Search for "Boston, Massachusetts using "search locations" part

# Click the "History" link to see the weather data in previous days up to today

# Set the history date as "01 March 2018" using the "Change the Weather History Date" link

# extract that data

# Call this data frame as: boston\_weather (note: Abbreviation is KBOS for Boston )

#boston\_weather <- do.call(rbind,table) #list to df

#boston\_weather <- table$searchResultsTable #list to df

# ---------------------------------------------------------------------------------------------

# 3. You will need Temp. column and Wind Speed columns. You can remove the other columns

# In the Temp. column, you should do a transformation like:

# Convert "5.0 Â°C" into "5"

# In the "Wind Speed" column, you should do a transformation like:

# Convert "13.0 km/h / 3.6 m/s" into just "13"

# ---------------------------------------------------------------------------------------------

# 4. Convert the variables into the correct format (numeric, integer, character, factor, ...)

# ---------------------------------------------------------------------------------------------

# 5. Create a new dataframe (of size 1x6) which gives the information about the location, date,

# and then min temp, max temp; and then min wind speed, max wind speed, which looks like:

# location date min\_temp max\_temp min\_wind max\_wind

# 1 KBOS 2018-03-01 4 12 11 20

# Note: You'll add up your location and date column by yourself.

# ---------------------------------------------------------------------------------------------

# 6. Now we are ready to write a function to scrap (extract) weather information

# on any date in Boston:

# Write a function which scraps and then combines the days that you specify in the function

# Your data must be in correct format at the end

# After writing the function, try it to combine the first days of last 6 months

# (2017-10-01, 2017-11-01, 2017-12-01, 2018-03-01, 2018-02-01, 2018-01-01)

# trick: you have to use gsub("-","/",date) in order to write the link in correct format

# Call the final data frame as: boston\_hist\_weather (of size 6x6), which looks like:

# location date min\_temp max\_temp min\_wind max\_wind

# 1 KBOS 2017-10-01 -14 1 12 22

# 2 KBOS 2017-11-01 -7 3 6 13

# ...

# 6 KBOS 2018-03-01 4 12 11 20

# ---------------------------------------------------------------------------------------------

# 7. Now we are ready to write a function to scrap (extract) weather information

# for any city; on any date:

# Write a function which scraps and then combines the cities and the days that you specify in the function

# Your data must be in correct format at the end

#

# After writing the function, try it to combine the locations:

# KBOS(Boston), KSFO(San Francisco), KMCJ(Houston), KNYC(NY) on first days of last 6 months

# (2017-10-01, 2017-11-01, 2017-12-01, 2018-03-01, 2018-02-01, 2018-01-01)

# Call this data frame as: hist\_weather, it should be of size 24x6

# delete this line and write your codes right here

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# 8. Use the data frame called hist\_weather, and draw a scatterplot,

# where x is wind speed and y is temperature

# if possible, also add a smooth curve

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# 9. Use the data frame called boston\_hist\_weather.

# Draw a histogram , where x axis is the first day of last 6 months

# and y axis is the max and min temperatures

# (two different graphs is also fine, but single graph with different colors is another option)

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# 10. BONUS: If you can do step 9, do it for hist\_weather data again (which includes 4 cities),

# implement the same graph in step 9, but add facets for each city

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# GOOD LUCK!