weatherData API

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Git Hub link : https://github.com/jba17/weatherDataAPI

What is weatherData API ?

- This API helps in fetching weather data (such as temperature, pressure, etc.) from various websites
- The main purpose of this function is to perform weather analysis, but do not wish to do data scraping for any weather related analyses.
- This particular API gets the data from:

  https://www.wunderground.com/

Functions and Example

How to get started ?

- The latest version of weatherData is on Github. Install and load the packages as below:

```
install.packages("devtools")
library("devtools")
install_github("weatherData", "Ram-N")

```

```
library(weatherData)
library(ggplot2)

```

- getCurrentTemperature("City Code") : This function is to get the current temperature of a city.

```
#Function to get current Temperature

getCurrentTemperature("NYC")
```

```
> getCurrentTemperature("NYC")
                  Time TemperatureF
22 2017-03-05 21:51:00           30
```

getWeatherForYear() Function

- This function helps to compare the daily temperature differences for two cities. In this example, we get 1 year's data for two cities, and plot the daily differences.

```
city1 <- "DFW"

city2 <- "NYC"

df1 <- getWeatherForYear(city1, 2016)

df2 <- getWeatherForYear(city2, 2016)

df1
df2

getDailyDifferences <- function(df1, df2){
  Delta_Means <- df1$Mean_TemperatureF - df2$Mean_TemperatureF
  Delta_Max <- df1$Max_TemperatureF - df2$Max_TemperatureF
  Delta_Min <- df1$Min_TemperatureF - df2$Min_TemperatureF

  diff_df <- data.frame(Date=df1$Date, Delta_Means, Delta_Max, Delta_Min)
  return(diff_df)
}

differences<- getDailyDifferences(df1, df2)
```

```
> differences
         Date Delta_Means Delta_Max Delta_Min
1  2016-01-01          6         7         5
2  2016-01-02          9        11         6
3  2016-01-03          9        15         2
4  2016-01-04         18        18        18
5  2016-01-05         20        18        21
6  2016-01-06         13         9        17
7  2016-01-07         17        18        17
8  2016-01-08         12        12        12
9  2016-01-09         -2         0        -4
10 2016-01-10        -14       -16       -12
11 2016-01-11          8        10         5
12 2016-01-12         12        19         6
```

Plot Differences

```
plotDifferences <- function (differences, city1, city2) {
  library(reshape2)
  m.diff <- melt(differences, id.vars=c("Date"))
  p <- ggplot(m.diff, aes(x=Date, y=value)) + geom_point(aes(color=variable)) +
    facet_grid(variable ~ .) +geom_hline(yintercept=0)
  p <- p + labs(title=paste0("Daily Temperature Differences: ", city1, " minus ",city2))
  print(p)
}

plotDifferences(differences, city1, city2)
```