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# MyGov Gmail Contacts
# written by Bret Costain
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# Retrieve Users Address based on GoogleID
# Execute curl script to retrieve contacts relevant to User address
# Flatten nested JSON file
# Output CSV file
# NEXT STEP: CSV File imported in Gmail into "myGov" folder within Contacts
#
# BEGIN
# Set Working Directory
setwd("~/Desktop/MyGov")
# Install Packages
install.packages("RCurl")
library("RCurl")
install.packages("devtools")
library(devtools)
install.packages("rjson")
library("rjson")
install.packages("jsonlite")
library("jsonlite")
install.packages("foreach")
library("foreach")
install.packages("stringr")
library("stringr")

#
# FORMAT ADDRESS AS CURL EXPRESSION TO RETRIEVE USER ADDRESS
API_KEY = "AIzaSyA7KrZQYcgLz00c40bJL9G0f3IIsznpmro"
userGooglePlusID= "102823877180866545771"
expression1 = "https://www.googleapis.com/plus/v1/people/" # First part of getURL command BEFORE userGooglePlusID
expression2= "?fields=placesLived&key=" # First part of getURL command AFTER userGooglePlusID BEFORE API_KEY
addressRequest = paste(expression1, userGooglePlusID, expression2, API_KEY, sep="")
addressTest= getURL(addressRequest)
#
# LOAD AS JSON ADDRESS AND CLEAN
json_address <- fromJSON(addressTest)
userAddress=json_address$placesLived$value
userAddressClean = str_replace_all(userAddress,",","") # REMOVE COMMAS
userAddressClean = str_replace_all(userAddress," ","%20") # REPLACE SPACES with %20
#
# RETRIEVE CONTACTS FROM GOOGLE CIVIC API
a = "https://www.googleapis.com/civicinfo/v2/representatives?key=AIzaSyA7KrZQYcgLz00c40bJL9G0f3IIsznpmro&address=" # First part of getURL command BEFORE clean address
c= paste(a, userAddressClean, sep = "")
z= getURL(c)
#
# Load JSON File
json_file <- z
json_data <- fromJSON(json_file)
#
# CLEAN NULL FROM EMAIL
json_data$officials$email[sapply(json_data$officials$email, is.null)] <- NA
json_data$officials$emails[sapply(json_data$officials$emails, is.null)] <- NA
#
# CREATE OFFICE RELATED VECTORS
officialInd=NULL
officeInd=NULL
officeName=NULL
q= json_data$offices$officialIndices
imax=length(q)
for (i in 1:imax )
{
  smax=length(q[[i]])
  for (s in 1:smax )
  {officialInd=c(officialInd,q[[i]][s])
    officeInd=c(officeInd,i)
    officeName=c(officeName,json_data$offices$name[i])
  }
}
#
d = (json_data$officials$name) # CREATE OFFICIAL NAME VECTOR
e = (json_data$officials$emails) # CREATE OFFICIAL EMAIL VECTOR
f = as.character(e) # CONVERT EMAIL to CHARACTER
#
# CREATE MASTER DATE FRAME FOR CONTACTS
z = data.frame(d,officeName,f,officialInd,officeInd)
colnames(z) <- c("Name","officeName", "E-mail","officialInd","officeInd")
write.csv(z, file = "MyGov.csv") # CREATE CSV File
# PRINT RESULTS
print("API_KEY:"); API_KEY
print("User's Google+ ID: "); userGooglePlusID
print("User's Primary Address: "); userAddress
print("User's Contact List:"); z
# END

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