|  |
| --- |
| #Attempting to Generalize Distance Script |
|  |  |
|  | #install.packages("functional") |
|  | #install.packages("geosphere") |
|  |  |
|  | library(functional) |
|  | library(geosphere) |
|  | #Finds the distance of each point in a dataframe to cityhall |
|  |  |
|  | distanceCalcu <- function(x){ |
|  | cityHallLat <- 29.951065 |
|  | CityHallLong <- -90.071533 |
|  | city <- c(CityHallLong,cityHallLat) |
|  |  |
|  | #Fixes scope of the variables |
|  | x <- x[x$longitude < 360, ] |
|  | y <- nrow(x) |
|  |  |
|  | lat <- x$latitude[1 : nrow(x) ] |
|  | long <- x$long[1: nrow(x) ] |
|  |  |
|  | # Provides a vector to store the results of the loop |
|  | distancex <- seq( 1: nrow(x)) |
|  |  |
|  | for (i in 1: nrow(x)){ |
|  | lat <- x$latitude[i] |
|  | long <- x$longitude[i] |
|  | loc <- c(long,lat) |
|  |  |
|  | distancex[i] <- distHaversine(loc,city ) |
|  | } |
|  | return(distancex) |
|  | } |
|  |  |
|  | distanceRecyclingProgram <- distanceCalcu( recyclingProgram) |
|  |  |
|  | #Finds the distance where each problem occured in relation to city hall |
|  | distances <- lapply(list(abandonedVehicle, catchBasin, codeEnforcement, recyclingProgram, grassService, |
|  | illegalDumping, potholeRepair, streetFlooding, treeServiceEmergency, largeItem, |
|  | mosquitoControl, treeService, trafficSign, streetLight, generalService, trash, |
|  | streetLight, rodentComplaint, streetSign, roadMarking, deadAnimalPickup, subsidence , |
|  | trafficSignal, roadShoulder, curbRepair, parkMaintenance, sidewalkRepair, treeMainteneance, |
|  | park, manholeCover, otherAnimal, parkCompliant , parkGrass, inspection), distanceCalcu) |
|  |  |
|  | names <- c(abandonedVehicleDistance, catchBasin, codeEnforcementDistance, recyclingProgramDistance, grassServiceDistance, |
|  | illegalDumpingDistance, potholeRepairDistance, streetFloodingDistance, treeServiceEmergencyDistance,largeItemDistance, |
|  | mosquitoControlDistance,treeServiceDistance, trafficSignDistance, streetLightDistance, generalServiceDistance, trashDistance, |
|  | streetLightDistance, rodentComplaintDistance, streetSignDistance, roadMarkingDistance, deadAnimalPickupDistance, subsidenceDistance, |
|  | trafficSignalDistance, roadShoulderDistance, curbRepairDistance, parkMaintenanceDistance, sidewalkRepairDistance, treeMainteneanceDistance, |
|  | parkDistance, manholeCoverDistance, otherAnimalDistance, parkCompliantDistance, parkGrassDistance, inspectionDistance) |
|  |  |
|  | # Assigning variables names to lists. Could not be done through loops because the list is not composed of atomic vectors |
|  | # It is composed of data frames. |
|  |  |
|  | abandonedVehicleDistance <- distances[1] |
|  | catchBasinDistance <- distances[2] |
|  | codeEnforcementDistance <- distances[3] |
|  | recyclingProgramDistance <- distances[4] |
|  | grassServiceDistance <- distances[5] |
|  | illegalDumpingDistance <- distances[6] |
|  | potholeRepairDistance <- distances[7] |
|  | streetFloodingDistance <- distances[8] |
|  | treeServiceEmergencyDistance <- distances[9] |
|  | largeItemDistance <- distances[10] |
|  | mosquitoControlDistance <- distances[11] |
|  | treeServiceDistance <- distances[12] |
|  | trafficSignDistance <- distances[13] |
|  | streetLightDistance <- distances[14] |
|  | generalServiceDistance <- distances[15] |
|  | trashDistance <- distances[16] |
|  | streetLightDistanc <- distances[17] |
|  | rodentComplaintDistance <- distances[18] |
|  | streetSignDistance <- distances[19] |
|  | roadMarkingDistance <- distances[20] |
|  | deadAnimalPickupDistance <- distances[21] |
|  | subsidenceDistance <- distances[22] |
|  | trafficSignalDistance <- distances[23] |
|  | roadShoulderDistance <- distances[24] |
|  | curbRepairDistance <- distances[25] |
|  | parkMaintenanceDistance <- distances[26] |
|  | sidewalkRepairDistance <- distances[27] |
|  | treeMainteneanceDistance <- distances[28] |
|  | parkDistance <- distances[29] |
|  | manholeCoverDistanc <- distances[30] |
|  | otherAnimalDistance <- distances[31] |
|  | parkCompliantDistance <- distances[32] |
|  | parkGrassDistance <- distances[33] |
|  | inspectionDistance <- distances[34] |