best.R

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library(dplyr)

##   
## Attaching package: 'dplyr'

## The following objects are masked from 'package:stats':  
##   
## filter, lag

## The following objects are masked from 'package:base':  
##   
## intersect, setdiff, setequal, union

library(ggplot2)  
  
hospital\_data <- read.csv("outcome-of-care-measures.csv", colClasses = "character")  
  
## Change the class of the columns containing data about 30 day motality rates to numeric  
hospital\_data[, 11] <- as.numeric(hospital\_data[, 11])

## Warning: NAs introduced by coercion

hospital\_data[, 17] <- as.numeric(hospital\_data[, 17])

## Warning: NAs introduced by coercion

hospital\_data[, 23] <- as.numeric(hospital\_data[, 23])

## Warning: NAs introduced by coercion

## This function takes as input two arguments - state name and outcome.  
## It checks of the name of state and the outcome are both valid.  
## It returns the name of the hospital with lowest mortality rate for the given state.  
  
best <- function(state, outcome) {  
 State\_hospitals <- (subset(hospital\_data, State == state))  
   
 ## Checking validity of the input state  
 if (nrow(State\_hospitals) == 0) {  
 stop ("invalid state")  
 }  
   
 ## Checking validity of the input outcome  
 if (!(outcome == "heart attack" || outcome == "heart failure" || outcome == "pneumonia")) {  
 stop ("invalid outcome")  
 }  
   
 ## Depending on the state and the outcome, select the best hospital for a particular condition  
 if (outcome == "heart attack"){  
 minimum\_mortality <- min(State\_hospitals$Hospital.30.Day.Death..Mortality..Rates.from.Heart.Attack, na.rm = TRUE)  
 Best\_hospital <- na.omit(State\_hospitals$Hospital.Name[State\_hospitals$Hospital.30.Day.Death..Mortality..Rates.from.Heart.Attack == minimum\_mortality])  
 Best\_hospital <- Best\_hospital[!is.na(Best\_hospital)]  
 }  
   
 if (outcome == "heart failure"){  
 minimum\_mortality <- min(State\_hospitals$Hospital.30.Day.Death..Mortality..Rates.from.Heart.Failure, na.rm = TRUE)  
 Best\_hospital <- na.omit(State\_hospitals$Hospital.Name[State\_hospitals$Hospital.30.Day.Death..Mortality..Rates.from.Heart.Failure == minimum\_mortality])  
 Best\_hospital <- Best\_hospital[!is.na(Best\_hospital)]  
 }  
   
 if (outcome == "pneumonia"){  
 minimum\_mortality <- min(State\_hospitals$Hospital.30.Day.Death..Mortality..Rates.from.Pneumonia, na.rm = TRUE)  
 Best\_hospital <- na.omit(State\_hospitals$Hospital.Name[State\_hospitals$Hospital.30.Day.Death..Mortality..Rates.from.Pneumonia == minimum\_mortality])  
 Best\_hospital <- Best\_hospital[!is.na(Best\_hospital)]  
 }   
   
 ## Checking if there are more than one hospital with same mortality rate; if yes, sort them alphabetically  
 if (length(Best\_hospital) > 1){  
 Best\_hospital <- sort(Best\_hospital)  
 }  
   
 Best\_hospital[1]   
}