frontend.R

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library(shiny)

## Warning: package 'shiny' was built under R version 4.4.3

library(leaflet)

## Warning: package 'leaflet' was built under R version 4.4.3

library(httr)

## Warning: package 'httr' was built under R version 4.4.3

library(jsonlite)

## Warning: package 'jsonlite' was built under R version 4.4.3

##   
## Attaching package: 'jsonlite'

## The following object is masked from 'package:shiny':  
##   
## validate

# API URL (update this if running on a different machine)  
API\_URL <- "http://127.0.0.1:8000/bus-location"  
  
# Start and end locations (manually set them to match API values)  
start\_location <- list(lat = 28.6139, lon = 77.2090) # Connaught Place, Delhi  
end\_location <- list(lat = 28.6400, lon = 77.2500) # Destination in Delhi  
  
# UI  
ui <- fluidPage(  
 titlePanel("Real-Time Bus Tracking"),  
 leafletOutput("bus\_map", height = "600px"),  
 tags$script(HTML("  
 setInterval(function() {  
 Shiny.onInputChange('update\_bus', Math.random());  
 }, 1000);  
 ")) # Auto-refresh every 3 seconds  
)  
  
# Server  
server <- function(input, output, session) {  
   
 # Reactive value to store bus location  
 bus\_location <- reactiveVal(NULL)  
   
 # Fetch bus location from API  
 updateBusLocation <- function() {  
 res <- try(GET(API\_URL), silent = TRUE)  
 if (!inherits(res, "try-error") && http\_status(res)$category == "Success") {  
 data <- fromJSON(content(res, as = "text"))  
 bus\_location(data)  
 }  
 }  
   
 # Fetch initial location  
 updateBusLocation()  
   
 # Update location when the JS trigger fires  
 observeEvent(input$update\_bus, {  
 updateBusLocation()  
 })  
   
 # Render map  
 output$bus\_map <- renderLeaflet({  
 leaflet() %>%  
 addTiles() %>%  
 setView(lng = start\_location$lon, lat = start\_location$lat, zoom = 14) %>%  
   
 # Add start and end markers  
 addMarkers(lng = start\_location$lon, lat = start\_location$lat,   
 popup = "Start Location", icon = makeAwesomeIcon(icon = "flag", markerColor = "green")) %>%  
 addMarkers(lng = end\_location$lon, lat = end\_location$lat,   
 popup = "End Location", icon = makeAwesomeIcon(icon = "flag", markerColor = "red"))  
 })  
   
 # Update bus marker when bus location changes  
 observe({  
 loc <- bus\_location()  
 if (!is.null(loc)) {  
 leafletProxy("bus\_map") %>%  
 clearGroup("bus") %>%  
 addMarkers(lng = loc$lon, lat = loc$lat, popup = "Bus is here!",   
 icon = makeIcon(  
 iconUrl = "https://img.icons8.com/?size=100&id=16195&format=png&color=000000",  
 iconWidth = 32, iconHeight = 32  
 ),  
 group = "bus")  
 }  
 })  
}  
  
# Run the app  
shinyApp(ui, server)