STARTING APP

# ---------------------------------------------------------------------------- #

# ACTIVITY 2.3c map\_3 SERVER

# ---------------------------------------------------------------------------- #

##Load libraries

library(shiny)

library(leaflet)

library(lubridate)

library(dplyr)

library(rgdal)

library(rgeos)

# Load in the raw data

raw\_data <- read.csv("data/raw\_data.csv", stringsAsFactors=FALSE)

# Add year and decimal date to data

leaflet\_data <- raw\_data %>%

mutate(year = substr(date, 1,4), date=ymd(date), date\_decimal = decimal\_date(date))

## Create a colour palette for points

palette <- c("#231D51", "#178B8B", "#63C963", "#FFE31D")

## Load region shapefile

regions <- readOGR("data/TZ\_Region\_2012","TZ\_Region\_2012")

#------------------------------------------------------------------------------#

# Define server logic

shinyServer(function(input, output) {

## Subset data based on inputs

leaflet\_data\_sub<- reactive({

leaflet\_data %>%

filter(species %in% input$species)

})

## Create text pop-up information for each point in subsetted data

popupInfo <- reactive({

paste("Date: ", leaflet\_data\_sub()$date, "<br>",

"Species: ", leaflet\_data\_sub()$species, "<br>",

"Age: ", leaflet\_data\_sub()$age, "<br>",

"Sex: ", leaflet\_data\_sub()$sex, "<br>",

sep = " ")

})

# Get point colours based on chosen variable

pal <- reactive({

colourby\_col <- ifelse(input$colourby!="date",input$colourby,"date\_decimal")

if(input$colourby %in% c("species","sex")){

colorFactor(palette, domain = sort(unique(leaflet\_data[,colourby\_col])))

}else if(input$colourby %in% c("date","age")){

colorNumeric(palette, range(leaflet\_data[,colourby\_col]))

}

})

## Render map

output$mymap <- renderLeaflet({

## Initialise map with tile. Set central point of viewing window and initial amount of zoom.

m <- leaflet() %>%

addProviderTiles("Stamen.Terrain") %>%

setView(c(gCentroid(regions)@coords)[1], c(gCentroid(regions)@coords)[2], zoom = 6)

## Add region shapefile if box is checked

if(input$shapefile == TRUE){

m <- m %>%

addPolygons(data=regions,color="black",fillColor = "white",

label=regions$Region\_Nam, weight=1, fillOpacity=0.7)}

## Add coloured points and legend

colourby\_col <- ifelse(input$colourby!="date",input$colourby,"date\_decimal")

m %>%

addCircles(data=leaflet\_data\_sub(),lng=~leaflet\_data\_sub()$x,lat=~leaflet\_data\_sub()$y,

color = pal()(leaflet\_data\_sub()[,colourby\_col]),

opacity=1, fillOpacity=1, popup = popupInfo()) %>%

addLegend(position = "bottomright", title = input$colourby,

pal = pal(), values = leaflet\_data\_sub()[,colourby\_col], opacity=1,

labFormat = labelFormat(big.mark = ""))

})

})

STARTING APP

# ---------------------------------------------------------------------------- #

# ACTIVITY 2.3c map\_3 UI

# ---------------------------------------------------------------------------- #

# Load libraries

library(shiny)

library(leaflet)

library(shinyWidgets)

library(dplyr)

library(lubridate)

# Load in the raw data

raw\_data <- read.csv("data/raw\_data.csv", stringsAsFactors=FALSE)

# Tranform dates from characters to date objects

leaflet\_data <- raw\_data %>% mutate(date=ymd(date))

# Get the unique names of the species for the drop down menu

all\_species <- unique(leaflet\_data$species)

#------------------------------------------------------------------------------#

# Define UI for application

shinyUI(fluidPage(

# Application title

titlePanel("Day 2 - Map\_3"),

# Add a line break

br(),

# Add text section

h4("A map app, where we can select the species to display and the variable to colour points by.

Display of the region shapefile is now optional."),

# Add a line break

br(),

sidebarLayout(

# Sidebar containing the widgets

sidebarPanel(

# Drop down menu to choose variable by which points will be coloured

selectInput(inputId="colourby", label="Colour Cases By:",

choices = c("species","date","sex","age"),

selected="species"),

br(),

# Menu for selecting which species to display

pickerInput(inputId = "species", label = "Species:",

sort(all\_species), selected= all\_species, # Use sort to get names in alphabetical order

options = list(`actions-box` = TRUE,`live-search` = TRUE), multiple = T),

br(),

# Checkbox for selecting whether region shapefile should be displayed

checkboxInput("shapefile", label = "Region shapefile", value = TRUE)

),

# Show a plot of the map

mainPanel(

leafletOutput("mymap",width=800,height=500)

)

)

))

COMPLETED APP

# ---------------------------------------------------------------------------- #

# ACTIVITY 2.3c map\_3 SERVER

# ---------------------------------------------------------------------------- #

##Load libraries

library(shiny)

library(leaflet)

library(lubridate)

library(dplyr)

library(rgdal)

library(rgeos)

# Load in the raw data

raw\_data <- read.csv("data/raw\_data.csv", stringsAsFactors=FALSE)

# Add year and decimal date to data

leaflet\_data <- raw\_data %>%

mutate(year = substr(date, 1,4), date=ymd(date), date\_decimal = decimal\_date(date))

## Create a colour palette for points

palette <- c("#231D51", "#178B8B", "#63C963", "#FFE31D")

## Load region shapefile

regions <- readOGR("data/TZ\_Region\_2012","TZ\_Region\_2012")

## Load protected areas shapefile

PAs <- readOGR("data/TZprotected\_areas","TZprotected\_areas")

#------------------------------------------------------------------------------#

# Define server logic

shinyServer(function(input, output) {

## Subset data based on inputs

leaflet\_data\_sub<- reactive({

leaflet\_data %>%

filter(species %in% input$species)

})

## Create text pop-up information for each point in subsetted data

popupInfo <- reactive({

paste("Date: ", leaflet\_data\_sub()$date, "<br>",

"Species: ", leaflet\_data\_sub()$species, "<br>",

"Age: ", leaflet\_data\_sub()$age, "<br>",

"Sex: ", leaflet\_data\_sub()$sex, "<br>",

sep = " ")

})

# Get point colours based on chosen variable

pal <- reactive({

colourby\_col <- ifelse(input$colourby!="date",input$colourby,"date\_decimal")

if(input$colourby %in% c("species","sex")){

colorFactor(palette, domain = sort(unique(leaflet\_data[,colourby\_col])))

}else if(input$colourby %in% c("date","age")){

colorNumeric(palette, range(leaflet\_data[,colourby\_col]))

}

})

## Render map

output$mymap <- renderLeaflet({

## Initialise map with tile. Set central point of viewing window and initial amount of zoom.

m <- leaflet() %>%

addProviderTiles("Stamen.Terrain") %>%

setView(c(gCentroid(regions)@coords)[1], c(gCentroid(regions)@coords)[2], zoom = 6)

## Add region shapefile if box is checked

if("regions" %in% input$shapefiles){

m <- m %>%

addPolygons(data=regions,color="black",fillColor = "white",

label=regions$Region\_Nam, weight=1, fillOpacity=0.7)}

if("protected areas" %in% input$shapefiles){

m <- m %>%

addPolygons(data=PAs,color="transparent",fillColor = "tomato",

weight=1, fillOpacity=0.7)}

## Add coloured points and legend

colourby\_col <- ifelse(input$colourby!="date",input$colourby,"date\_decimal")

m %>%

addCircles(data=leaflet\_data\_sub(),lng=~leaflet\_data\_sub()$x,lat=~leaflet\_data\_sub()$y,

color = pal()(leaflet\_data\_sub()[,colourby\_col]),

opacity=1, fillOpacity=1, popup = popupInfo()) %>%

addLegend(position = "bottomright", title = input$colourby,

pal = pal(), values = leaflet\_data\_sub()[,colourby\_col], opacity=1,

labFormat = labelFormat(big.mark = ""))

})

})

COMPLETED APP

# ---------------------------------------------------------------------------- #

# ACTIVITY 2.3c map\_3 UI

# ---------------------------------------------------------------------------- #

# Load libraries

library(shiny)

library(leaflet)

library(shinyWidgets)

library(dplyr)

library(lubridate)

# Load in the raw data

raw\_data <- read.csv("data/raw\_data.csv", stringsAsFactors=FALSE)

# Tranform dates from characters to date objects

leaflet\_data <- raw\_data %>% mutate(date=ymd(date))

# Get the unique names of the species for the drop down menu

all\_species <- unique(leaflet\_data$species)

#------------------------------------------------------------------------------#

# Define UI for application

shinyUI(fluidPage(

# Application title

titlePanel("Day 2 - Map\_3"),

# Add a line break

br(),

# Add text section

h4("A map app, where we can select the species to display and the variable to colour points by.

Optional display of region and protected area shapefiles."),

# Add a line break

br(),

sidebarLayout(

# Sidebar containing the widgets

sidebarPanel(

# Drop down menu to choose variable by which points will be coloured

selectInput(inputId="colourby", label="Colour Cases By:",

choices = c("species","date","sex","age"),

selected="species"),

br(),

# Menu for selecting which species to display

pickerInput(inputId = "species", label = "Species:",

sort(all\_species), selected= all\_species, # Use sort to get names in alphabetical order

options = list(`actions-box` = TRUE,`live-search` = TRUE), multiple = T),

br(),

# Checkboxes for choosing shapefiles to be displayed

checkboxGroupInput("shapefiles", label = "Select background polygons:",

choices = c("regions", "protected areas"),

selected = c("regions"))

),

# Show a plot of the map

mainPanel(

leafletOutput("mymap",width=800,height=500)

)

)

))