**DAY 1 WORKSHEET - 1.4 Building an interactive plot in RShiny**

**1.4a   Create a shiny app**

**Activity: Create an app in a single R script**

1. Open up R Studio
2. On the top menu, click on: File > New File > Shiny Web App
3. Type in a name for your app, click on Single File (app.R), check you are happy with the directory, then click Create!
4. Click on the “Run app” button to run the code and load the app

**Activity: Create an app using multiple R scripts**

1. On the top menu, click on: File > New File > Shiny Web App
2. Type in a name for your app, click on Multiple File (ui.R/server.R), check you are happy with the directory, then click Create!
3. Run the app as before

**1.4b   Add an option to a radio button widget**

**File: Apps/barplot\_1**

**Activity: Add age as an option to view on the x-axis**

*Hints:*

* *You only need to change the ui file*
* *Remember to explore the dataset to find the correct column name*

**1.4c   Add a new text output**

**File: Apps/barplot\_2**

**Questions:**

1. How many inputs does the app use?
2. How many outputs/renders does the app use?

**Activity: Add another text output to the side panel**

*Hints:*

* *You will need to change both files*
* *You could show a summary of your data e.g. head(), summary()*
* *You can reference the input as a column name using a set of double square brackets e.g. raw\_data[[input$new\_text]]*

**1.4d   Make a simple change to the data used by a widget**

**File: Apps/Day 1 - timeseries\_1**

**Questions:**

1. What function is used to subset in the reactive() function?
2. What does the |mean in the reactive() function?

**Activity: Change the dropdown from Species to Region**

*Hints:*

* *You will need to change both files*
* *We have named objects descriptively e.g. input$select\_species; use this to identify where you should make edits*

**1.4e   Make a more complicated change to the data used by a widget**

**File: Apps/Day 1 - timeseries\_2**

**Questions:**

1. Why do we create categories for “All data”, “Both sexes” and “All regions” when summarising the data?
2. In the checkboxGroupInput() function in the ui, we provide a list for the choices given to the user.  
   Which of these (Male, Female, M, F) are present in the data, and which have we set to appear in the app?

**Activity: Change the checkboxes from Sex to Species**

*Hints:*

* *You will need to change both files*
* *When listing options for the widgets, you can provide a list (e.g. region\_list) or set the choices manually (e.g. list("Dog"="dog", "Cat"="cat"...))*
* *For checkboxes, you do not need an option for “Select all” in the ui because the user can automatically select multiple options*

**1.4f   Change a widget**

**File: Apps/Day 1 - timeseries\_3**

**Questions:**

1. What does the <= mean in the reactive() function?
2. What does the value argument in the sliderInput() set?

**Activity: Change from a 1-sided to a 2-sided slider**

*Hints:*

* *You will need to change both files*
* *Remember to use the ? to view a helpfile if you are stuck*
* *If an input produces multiple values, they appear in the ui as a character string (vector)*

**1.4g   Explore a “Go” button**

**File: Apps/Day 1 - timeseries\_4**

**Questions:**

We’ll discuss this app as a group, so please take a moment to think about these questions:

1. What reactive elements have changed in the ui code and the server code?
2. Can you spot any new functions in the shinyServer that we have not introduced yet? What do these do?
3. Can you think of any scenarios where it would be helpful to use an actionButton() to trigger a reactive event?