

Data Visualization with R Shiny tutorial

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We can show multiple frames in screen and let the user select one. The processing of the data is only carried out for the currently selected tab.

```
tabsetPanel(  
  tabPanel("title_text", textOutput("name_text")),  
  tabPanel("title_plot", plotOutput("name_plot")),  
  tabPanel("title_map", leafletOutput("name_map"))  
)
```

The `leaflet` package allows us to produce maps shown with `leafletOutput` in the `ui.R` and created with `renderLeaflet` in the `server.R` file.

Reactive objects

In the `server.r` file, we filter the data using a reactive object:

```
theData = reactive({  
  mapData %>%  
    filter(year >= input$year  
})
```

- A reactive object changes when its input changes.
- When it runs, the output is cached.
- If it is called several times in an application, it will not run again if the inputs are unchanged.

Functions in ui.R and server.R

ui.R		server.R
textOutput	↔	renderText
plotOutput	↔	renderPlot
tableOutput	↔	renderTable
leafletOutput	↔	renderLeaflet

Simple layouts

Left-to-right and top-to-bottom. The elements reorder themselves when resizing the window.

```
flowLayout( ... )
```

Top-to-bottom

```
verticalLayout( ... )
```

Left-to-right with manually set widths

```
splitLayout( cellWidths = c("25%", "75%"),  
             ... ),
```

Complete layouts

Side bar and main panel

```
fluidpage(  
  sidebarLayout(sidebarPanel, mainPanel, position))  
)
```

Top level navigation bar and several tabs

```
navbarPage(title, tabPanel)
```

Left navigation bar and several tabs

```
fluidpage(  
  navlistPanel(title, tabPanel)  
)
```

Complete layouts

Rows and columns. The sum of the widths of the columns must be equal to 12.

```
fluidpage(  
  fluidrow(  
    column(width=4, ...),  
    column(width=4, ...), ... ))
```

Combination of layouts

```
fluidPage(  
  fluidRow(  
    column(width=4, ...), column(width=8, ...)),  
  splitLayout( ... ),  
  verticalLayout( ... )  
)
```