

# Developing Data Products: Quiz 1

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## Question 1

Consider the following code for the cars data set

```
library(manipulate)
myPlot <- function(s) {
  plot(cars$dist - mean(cars$dist), cars$speed - mean(cars$speed))
  abline(0, s)
}
```

This function plots distance versus speed, each de-meaned and an associated line of slope  $s$ . Which of the following code will make a manipulate plot that creates a slider for the slope?

- `manipulate(myPlot, s = slider(0, 2, step = 0.1))`
- `manipulate(myPlot(s), s = slider(0, 2, step = 0.1))`
- `manipulate(myPlot(s), x.s = slider(0, 2, step = 0.1))`
- `manipulate(myPlot(s), slider = x(0, 2, step = 0.1))`

## Solution

- `manipulate(myPlot(s), s = slider(0, 2, step = 0.1))`

## Question 2

Which of the following code uses the rCharts package to create a sortable and searchable data table for the airquality data set? Assume the rCharts package and the airquality data set have already been loaded into R.

- `dTable(airquality, sPaginationType = "full_numbers")`
- `d <- data.frame(airquality, stringsAsFactors = FALSE) print(d)`
- `airquality`
- `head(airquality)`

## Solution

- `dTable(airquality, sPaginationType = "full_numbers")`

### Question 3

A basic shiny data product requires:

- A server.R file only.
- A ui.R file only.
- A shiny.R file.
- A ui.R and server.R file or a A server.R file and a directory called www containing the relevant html files.

### Answer

- **A ui.R and server.R file or a A server.R file and a directory called www containing the relevant html files.**

### Question 4

What is incorrect about the followig syntax in ui.R?

```
library(shiny)
shinyUI(pageWithSidebar(
  headerPanel("Data science FTW!"),
  sidebarPanel(
    h2('Big text')
    h3('Sidebar')
  ),
  mainPanel(
    h3('Main Panel text')
  )
))
```

- The h2 command has the wrong arguments.
- Missing a comma in the sidebar panel
- The h3 command should be an h2 command.
- The “Sidebar” should say “Sidebar text”.

### Answer

- **Missing a comma in the sidebar panel**

### Question 5

Consider the following code in ui.R

```
shinyUI(pageWithSidebar(
  headerPanel("Example plot"),
  sidebarPanel(
    sliderInput('mu', 'Guess at the mu',value = 70, min = 60, max = 80, step = 0.05,)
  ),
  mainPanel(
```

```

    plotOutput('newHist')
  )
})

```

And the following server.R code.

```

library(UsingR)
data(galton)

shinyServer(
  function(input, output) {
    output$myHist <- renderPlot({
      hist(galton$child, xlab='child height', col='lightblue',main='Histogram')
      mu <- input$mu
      lines(c(mu, mu), c(0, 200),col="red",lwd=5)
      mse <- mean((galton$child - mu)^2)
      text(63, 150, paste("mu = ", mu))
      text(63, 140, paste("MSE = ", round(mse, 2)))
    })
  }
)

```

Why isn't it doing what we want?

- It should be `mu <- input$mean` in server.R
- The server.R output name isn't the same as the `plotOutput` command used in ui.R.
- The limits of the slider are set incorrectly and giving an error.
- The phrase “Guess at the mu value” should say “mean” instead of “mu”

## Solution

- The server.R output name isn't the same as the `plotOutput` command used in ui.R. (myHist insted of newHist)