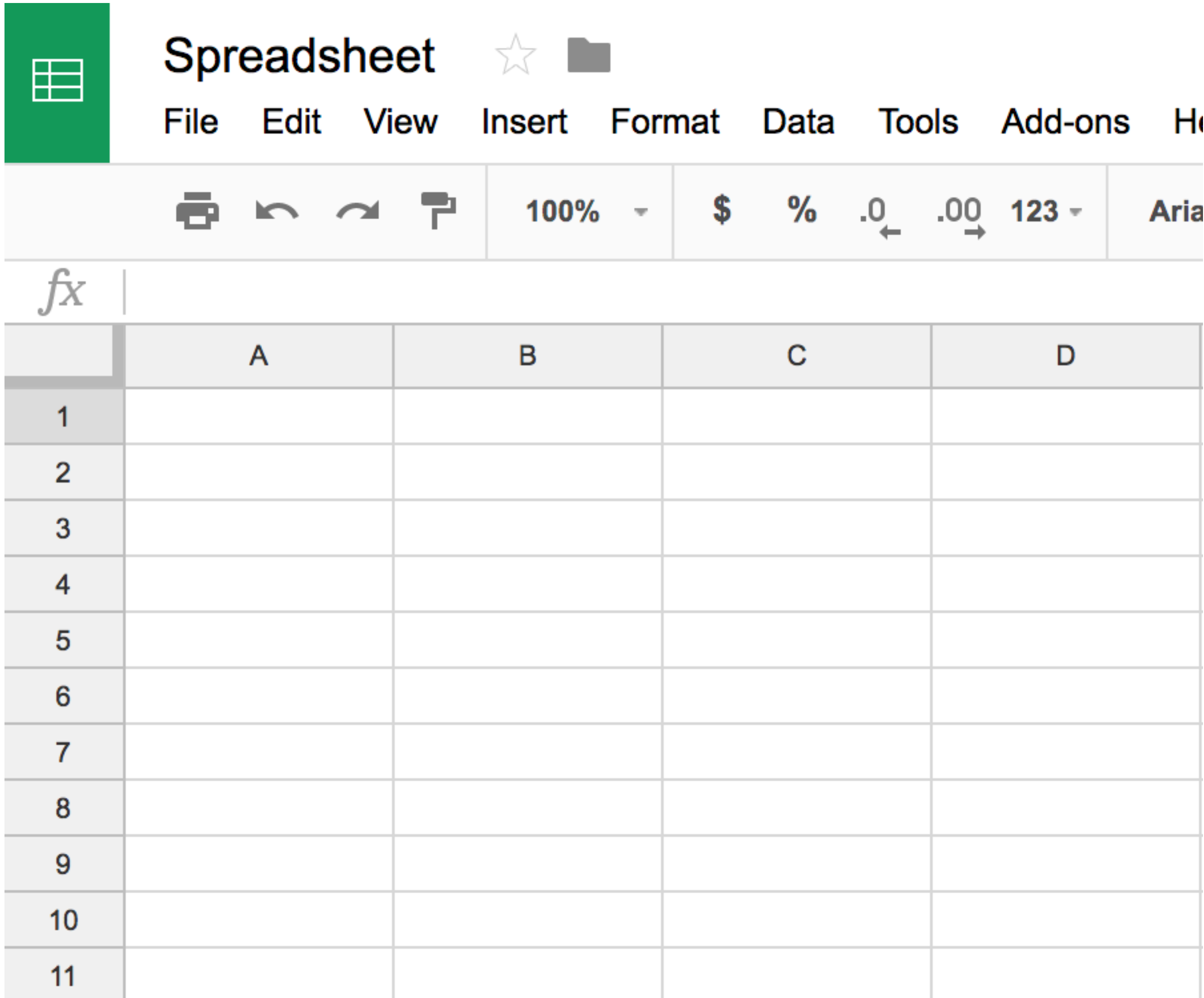














BUILDING WEB APPLICATIONS IN R WITH SHINY


Reactive flow

Reactivity, in spreadsheets

 Spreadsheet  

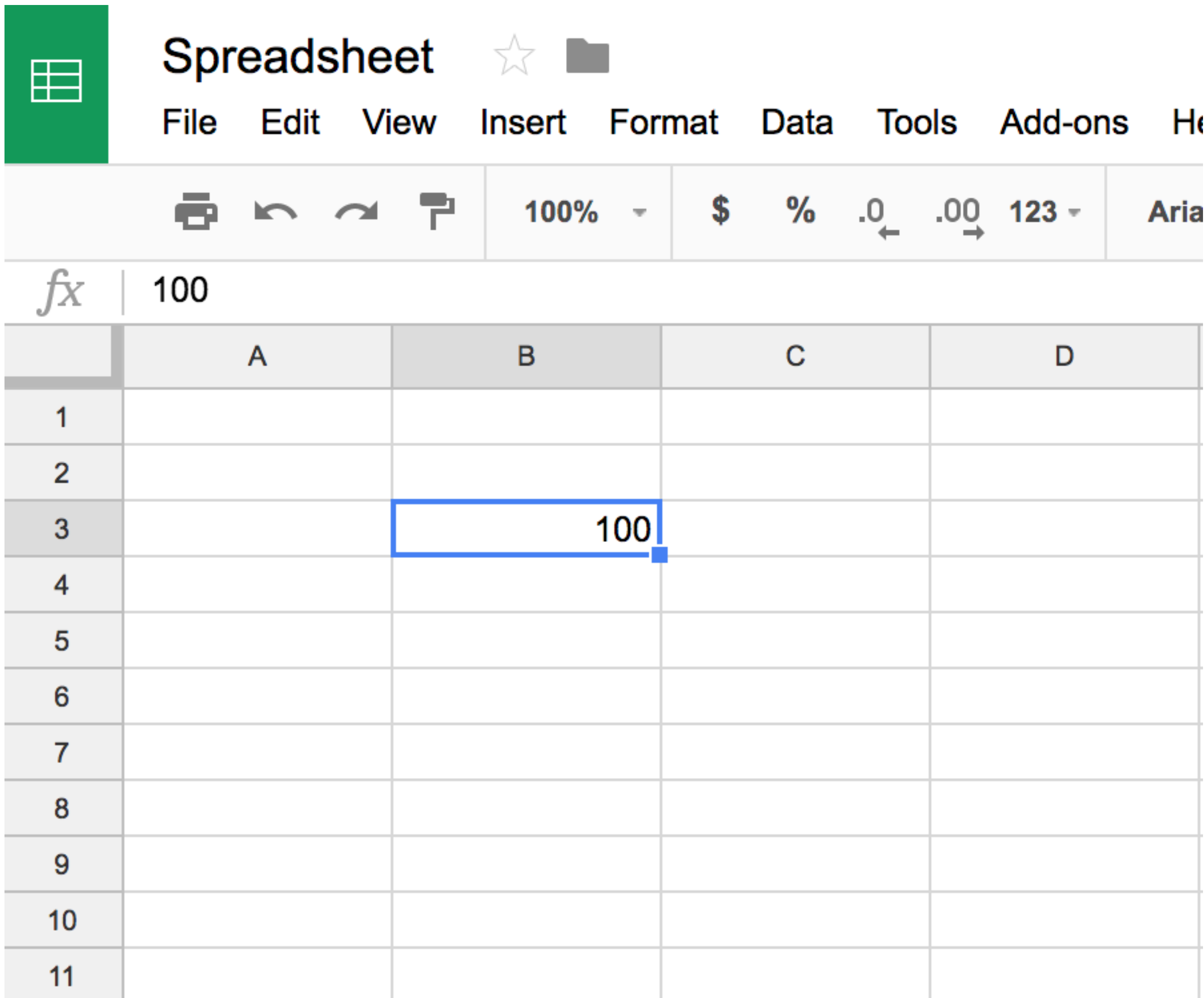
File Edit View Insert Format Data Tools Add-ons Help

    100%  \$ % .0  .00  123  Arial



	A	B	C	D
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				

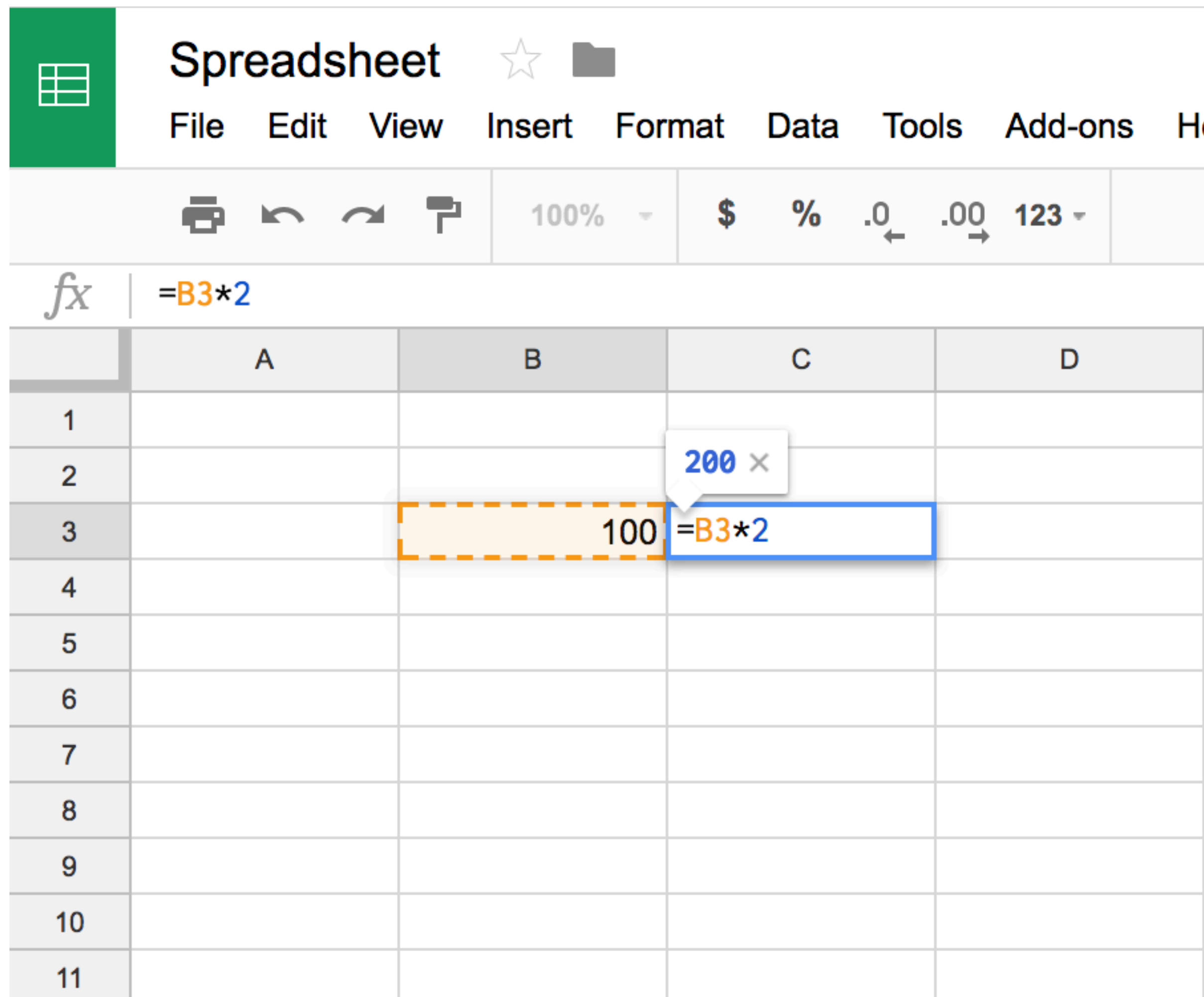
Reactivity, in spreadsheets



The screenshot shows a Google Sheets interface. At the top, there is a green tab labeled "Spreadsheet" with a star and folder icon. Below the tab is a menu bar with options: File, Edit, View, Insert, Format, Data, Tools, Add-ons, and Help. A toolbar contains icons for print, undo, redo, and insert, along with a zoom slider set to 100%, currency and percentage symbols, decimal and thousand separators, and a text color dropdown. The formula bar shows "fx" and the value "100". The spreadsheet grid has columns A, B, C, and D, and rows 1 through 11. Cell B3 is selected, indicated by a blue border and a small blue square at the bottom right, and contains the value "100".

	A	B	C	D
1				
2				
3		100		
4				
5				
6				
7				
8				
9				
10				
11				

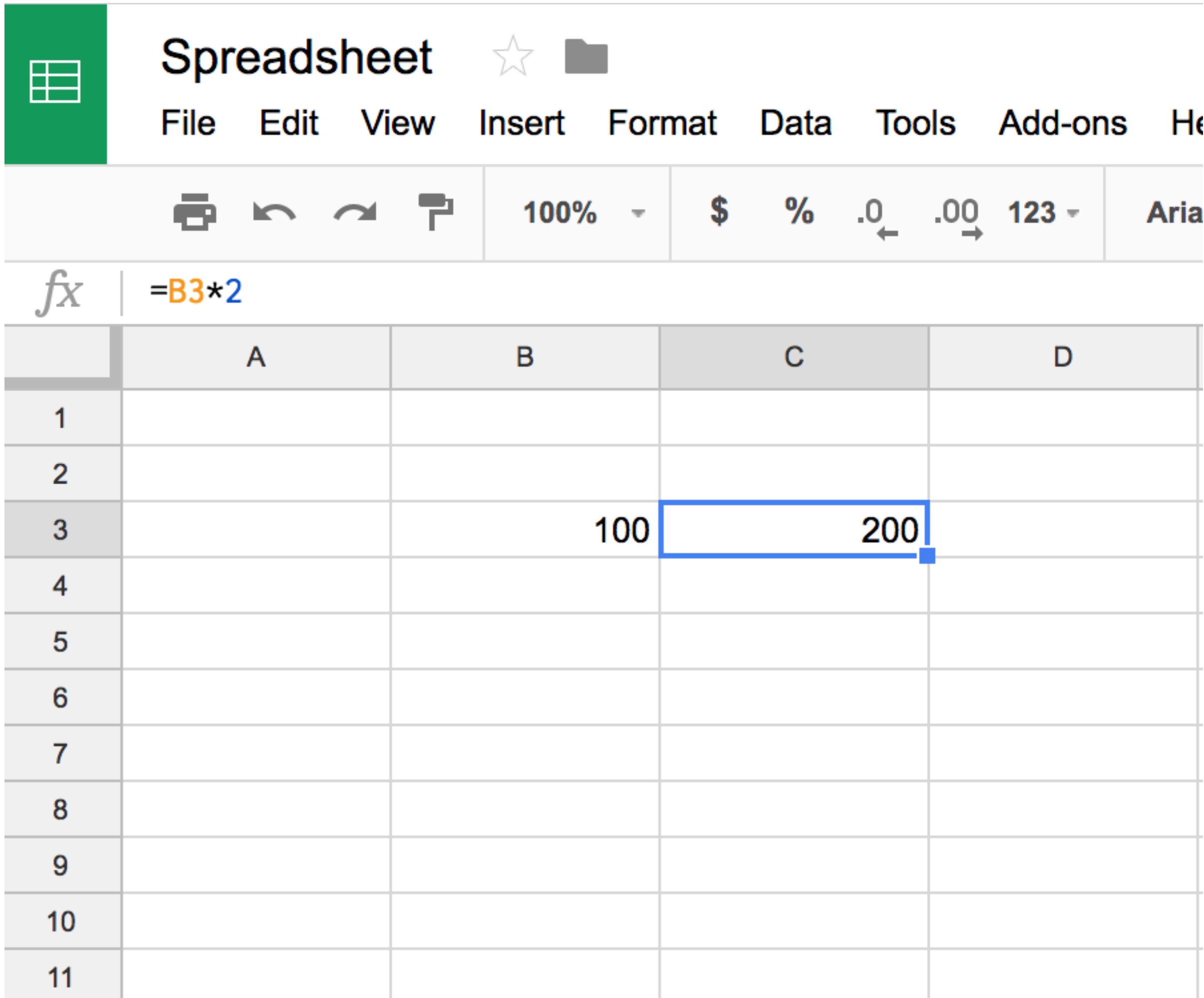
Reactivity, in spreadsheets



The screenshot shows a Google Sheets interface. At the top, there's a green header bar with a grid icon and the word "Spreadsheet". Below this is a menu bar with "File", "Edit", "View", "Insert", "Format", "Data", "Tools", "Add-ons", and "Help". A toolbar contains icons for print, undo, redo, and a zoom slider set to 100%. To the right of the toolbar are currency symbols (\$, %) and decimal formatting options (.0, .00, 123). Below the toolbar is a formula bar with "fx" and the formula "=B3*2". The spreadsheet grid has columns A, B, C, and D, and rows 1 through 11. Cell B3 is highlighted with a dashed orange border and contains the value "100". A blue tooltip box is positioned over cell C3, displaying "200 x" and the formula "=B3*2".

	A	B	C	D
1				
2				
3		100	=B3*2	
4				
5				
6				
7				
8				
9				
10				
11				

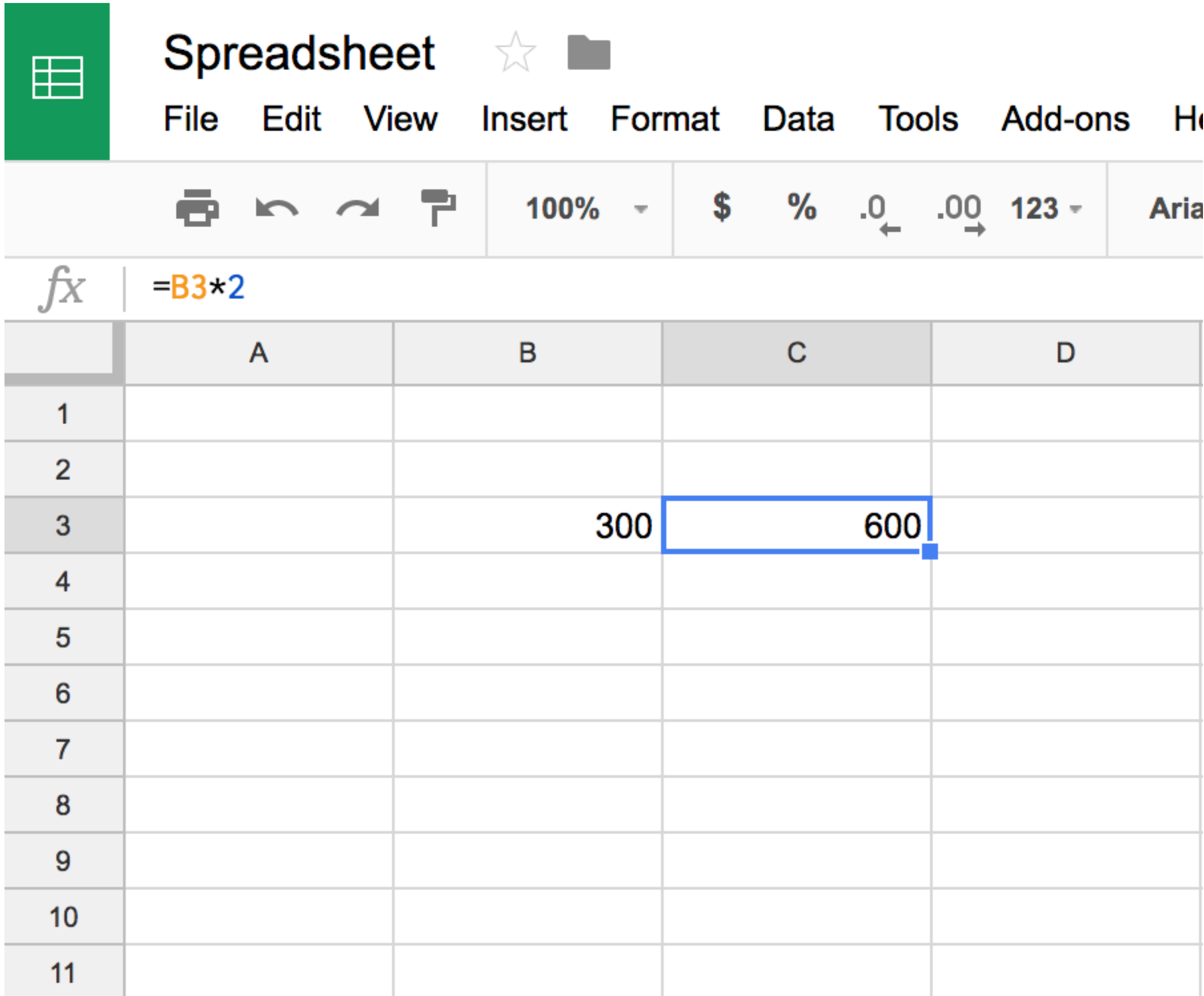
Reactivity, in spreadsheets



The image shows a screenshot of a Google Sheets interface. At the top, there is a green tab labeled 'Spreadsheet' with a star and folder icon. Below the tab is a menu bar with 'File', 'Edit', 'View', 'Insert', 'Format', 'Data', 'Tools', 'Add-ons', and 'Help'. A toolbar contains icons for print, undo, redo, and insert, followed by a zoom slider set to 100%, currency and percentage symbols, decimal and thousand separators, and a text color dropdown set to 'Aria'. The formula bar shows the formula $=B3*2$. The spreadsheet grid has columns A, B, C, and D, and rows 1 through 11. Cell B3 contains the value 100, and cell C3 contains the value 200. Cell C3 is selected, indicated by a blue border and a small blue square at the bottom right corner.

	A	B	C	D
1				
2				
3		100	200	
4				
5				
6				
7				
8				
9				
10				
11				

Reactivity, in spreadsheets



The image shows a screenshot of a Google Sheets spreadsheet. At the top, there is a green header bar with a grid icon and the word "Spreadsheet". Below this is a menu bar with options: File, Edit, View, Insert, Format, Data, Tools, Add-ons, and Help. A toolbar contains icons for print, undo, redo, and insert, along with a zoom slider set to 100%, currency and percentage symbols, decimal and thousand separators, and a font color dropdown. The formula bar shows the formula $=B3*2$. The spreadsheet grid has columns A, B, C, and D, and rows 1 through 11. Cell B3 contains the value 300, and cell C3 contains the value 600. A blue selection box is around cell C3, with a small blue square handle at the bottom right corner.

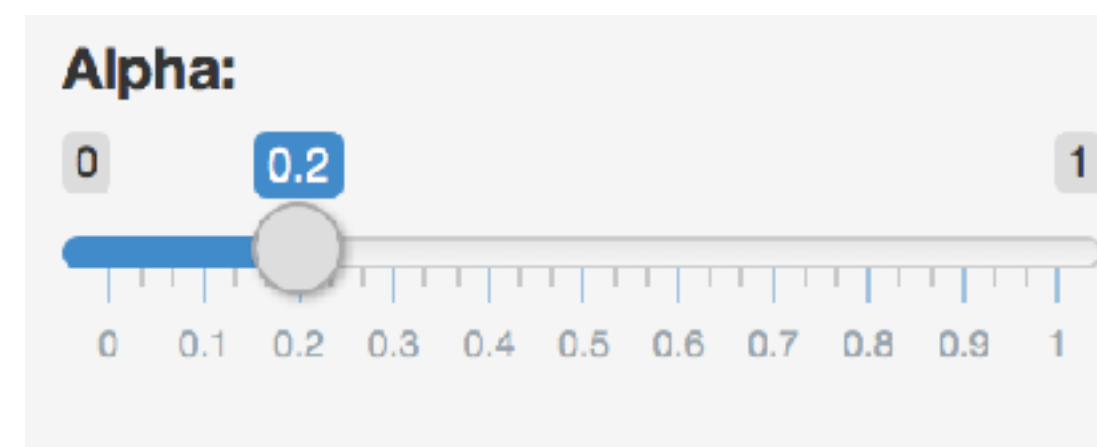
	A	B	C	D
1				
2				
3		300	600	
4				
5				
6				
7				
8				
9				
10				
11				

Reactions

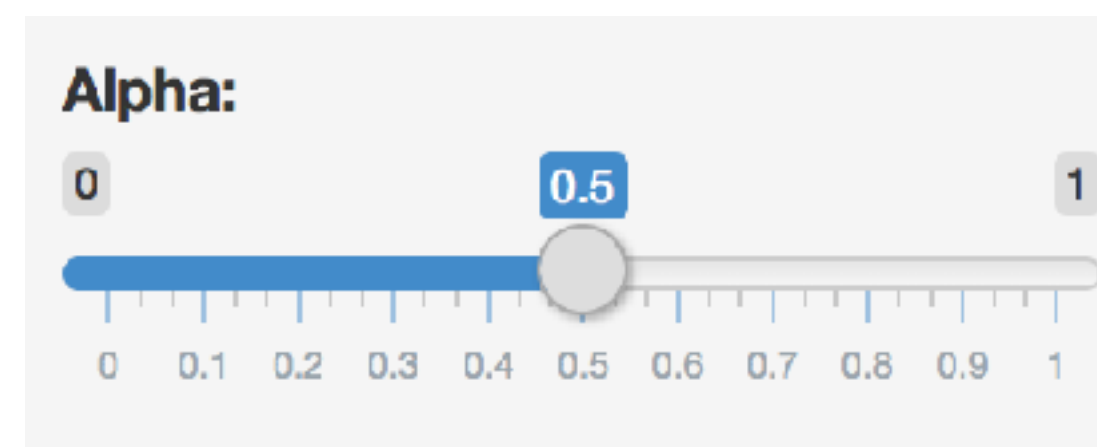
The **input\$** list stores the current value of each input object under its name.

```
# Set alpha level  
sliderInput(inputId = "alpha",  
            label = "Alpha:",  
            min = 0, max = 1,  
            value = 0.5)
```

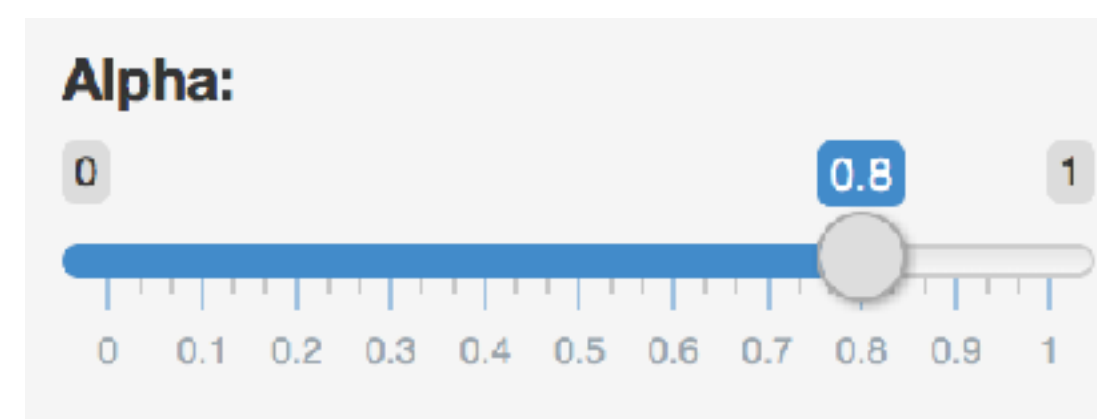
input\$alpha



input\$alpha = 0.2



input\$alpha = 0.5



input\$alpha = 0.8

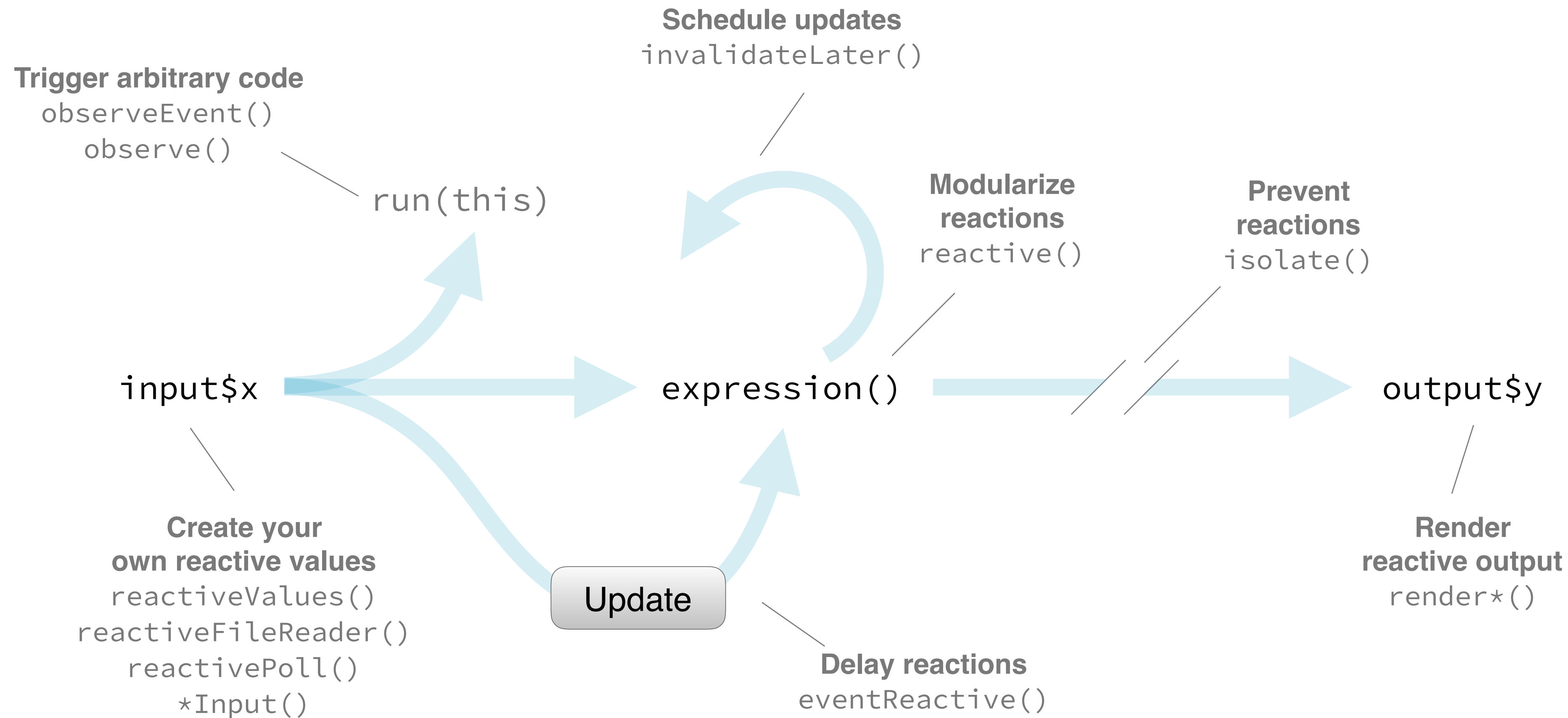
Reactivity 101

Reactivity automatically occurs when an input value is used to render an output object.

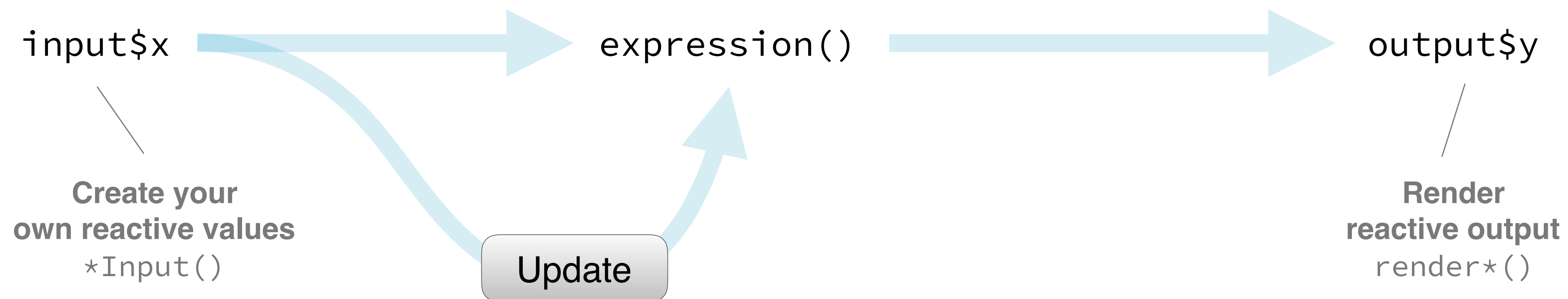
```
# Define server function required to create the scatterplot
server <- function(input, output) {

  # Create the scatterplot object the plotOutput function is expecting
  output$scatterplot <- renderPlot({
    ggplot(data = movies, aes_string(x = input$x, y = input$y)) +
      geom_point(alpha = input$alpha)
  })
}
```


Reactive flow



Reactive flow, simplified





BUILDING WEB APPLICATIONS IN R WITH SHINY

Let's practice!