

R you ready?

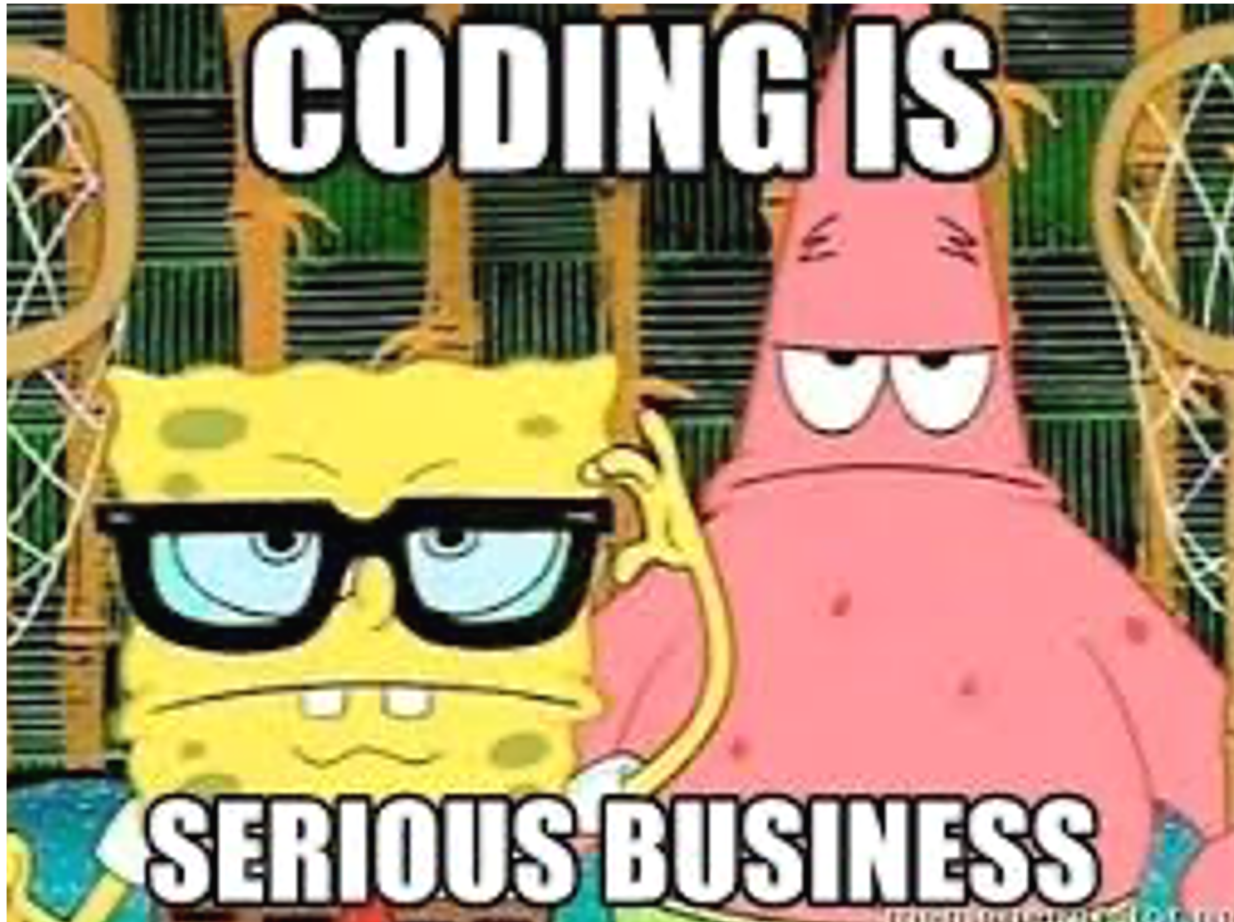
**Intro to RStudio and R Markdown
for open data and reproducibility**

Unit 2:

**Baby steps: Basics of coding in
RStudio, part I**

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Variables

Variables



What is a variable?

A variable (or object, as we refer to them in `R`) is a “**container**” that **stores data**

A variable (or object / data container) is...

saved under a name / **defined by a name**

contains values and / or content

has a **data type** (numeric, character, logical)

Assigning variables

We can assign variables in a few different ways

Equal operator =
variable = 5

Leftward operator <-
variable <- 5

Rightward operator ->
5 -> variable

Vectors

What is a vector?

A vector...

is the **most common data structure** in R

is a **1-D set of values** with the **same type of data structure** (e.g. numeric, logical, character)

Examples

Vectors can have different data structures

Numeric vector

```
> rnorm(n = 5, mean = 12, sd = 1)
```

```
[1] 12.44774 12.56486 12.66925 11.47244 13.25258
```

Logical vector

```
> c(1 == 0, 1 == 0, 1 == 1, 1 == 1, 1 == 0)
```

```
[1] FALSE FALSE TRUE TRUE FALSE
```

Character vector

```
> c("Mason", "Allen", "Wirtz")
```

```
[1] "Mason" "Allen" "Wirtz"
```


Creating vectors

We can create vectors and save them as objects (i.e. as variables)

```
> v1 = c(1, 2, 3, 4, 5)
# OR
> v2 = c(1:5)
```



What we are using here is the **concatenate function**, it binds individual integers, characters, etc. together to make a vector.



Everything in a single concatenate sequence must have the **SAME** data type

Creating vectors

What do you think is going to happen when we call `v1` and `v2`?

```
> v1
```

```
[1] 1 2 3 4 5
```

```
> v2
```

```
[1] 1 2 3 4 5
```

Data frames

Understanding data frames

Let's take a look at our `Vampires` data frame again

	idVampire	gender	ageOfVampire	deadOrAlive	hasFangs	bornIn	visitedCities	numberOfChildren
1	1	Male	85	Dead	Yes	South America	107	1
2	2	Female	73	Alive	No	Australia	66	3
3	3	Male	100	Alive	Yes	Australia	15	8
4	4	Female	75	Alive	No	Antarctica	11	2
5	5	Male	101	Alive	Yes	Australia	11	2
6	6	Female	75	Dead	Yes	North America	19	4
7	7	Male	75	Alive	No	North America	83	6
8	8	Female	68	Dead	Yes	Australia	50	5
9	9	Female	99	Dead	No	Australia	7	5
10	10	Female	44	Alive	Yes	Australia	66	1
11	11	Male	42	Alive	Yes	Australia	9	2
12	12	Female	72	Dead	No	Antarctica	29	3
13	13	Male	84	Dead	Yes	Australia	39	3
14	14	Male	60	Alive	No	Antarctica	65	1
15	15	Male	129	Alive	No	South America	65	1
16	16	Female	63	Dead	Yes	South America	65	1
17	17	Male	50	Alive	Yes	Australia	65	1
18	18	Female	49	Alive	No	Antarctica	65	1
19	19	Female	41	Dead	No	Australia	65	4

Integer (factor)

Numeric

Character (factor)

What kind of vectors do we have here in this data frame?

LET'S GET OUR HANDS DIRTY



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