



# Practicum in Statistical Computing

2021 Fall / APSTA-GE.2352

Lab week 2

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P A R T 0 1

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# Week 2

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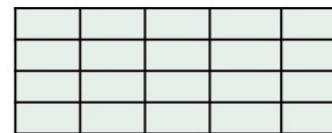
- 1. Data types**
- 2. Data presentation**
- 3. Logical expressions**
- 4. Lab (practice)**

Variables	Example
integer	100
numeric	0.05
character	“hello”
logical	TRUE
factor	“Green”

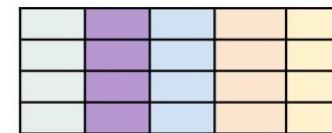
Vector



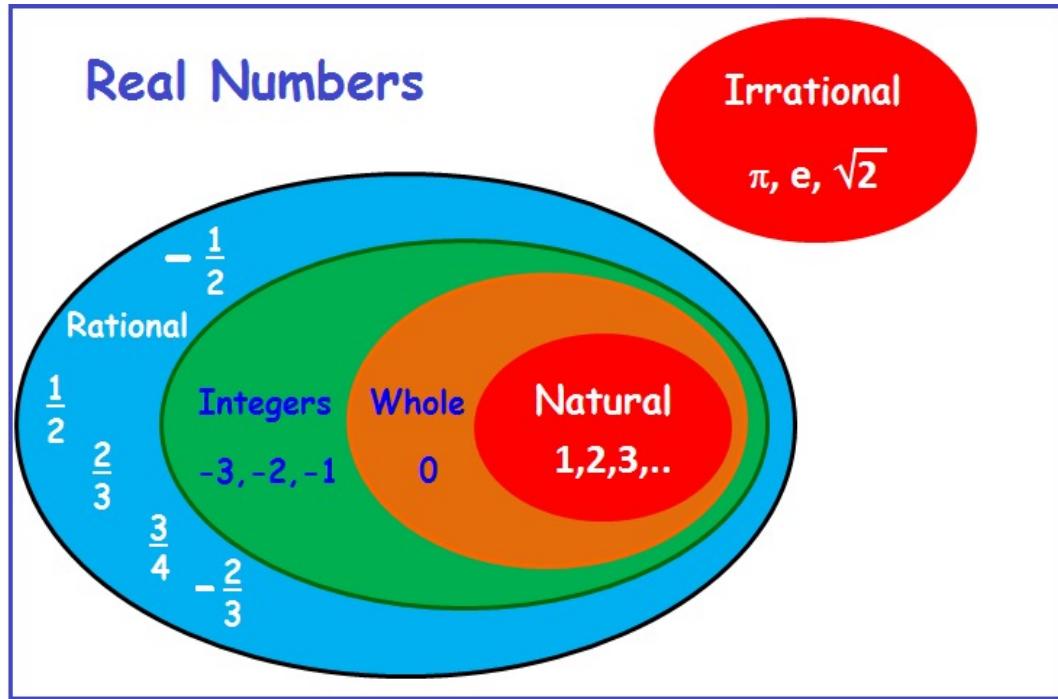
Matrix



Data frame



- Numeric** : Numbers that have a decimal value or are a fraction have a data type as numeric.
- Integer** : Numbers that do not contain decimal values may be stored as an integer data type.
- Character** : a data type containing text or letters (identified by surrounding in quotes)
- Logical** : a logical variable with binary outcome; TRUE or FALSE
- Factor** : a type of character variable encoded to be used as a categorical variable



Scalar

Vector

Matrix

Data Frame

**Data type**

- Numerical
- Character
- Logical

## **Comparison operators used in R**

1. < (less than)
2. > (greater than)
3. <= (less than or equal to)
4. >= (greater than or equal to)
5. == (equal to)
6. != (not equal to)

## **Logical operators used in R**

1. & (And / intersection)
2. | (Or / union)

```
# option 1
```

```
with(latino, boxplot(Achieve))
```

Evaluate an R expression in an environment constructed from  
data, possibly modifying (a copy of) the original data.

```
# option 2
```

```
boxplot(latino$Achieve)
```

```
# option 3: ggplot
```

```
ggplot(latino, aes(y=Achieve)) + geom_boxplot()
```