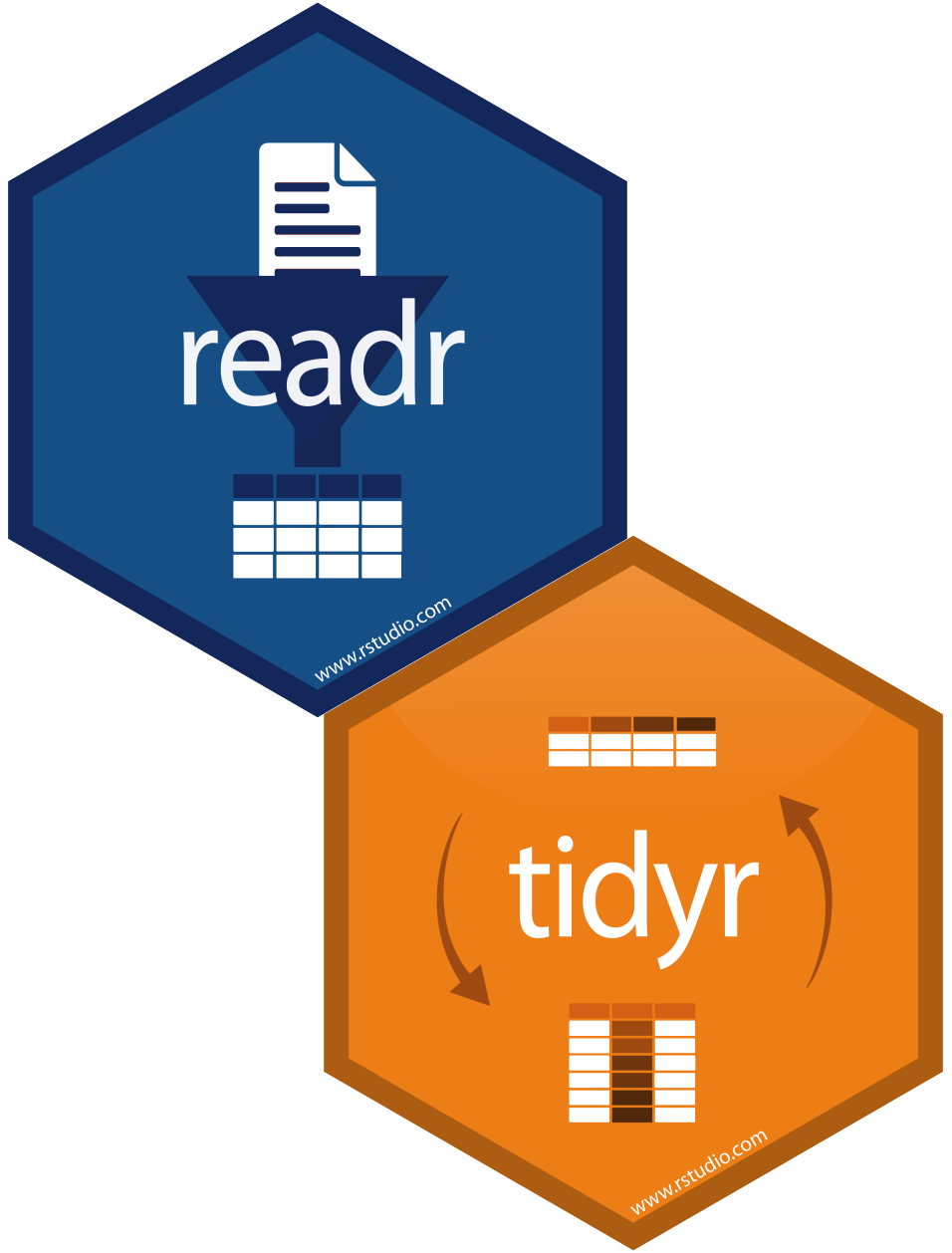
Reading Data with `readr` and Tidying Data with `tidyr`

2020-07-14



Reading Data

Data File Formats

Data is stored in plain text files with a **delimiter** specifying the boundaries between data entries. The most common delimiters are tabs or commas.

tab separated values (TSV)

```
Sepal.Length    Sepal.Width Petal.Length    Petal.Width Species
5.1 3.5 1.4 0.2 setosa
4.9 3   1.4 0.2 setosa
4.7 3.2 1.3 0.2 setosa
4.6 3.1 1.5 0.2 setosa
5   3.6 1.4 0.2 setosa
```

comma separated values (CSV)

```
Sepal.Length,Sepal.Width,Petal.Length,Petal.Width,Species¬
5.1,3.5,1.4,0.2,setosa¬
4.9,3,1.4,0.2,setosa¬
4.7,3.2,1.3,0.2,setosa¬
4.6,3.1,1.5,0.2,setosa¬
5,3.6,1.4,0.2,setosa¬
```

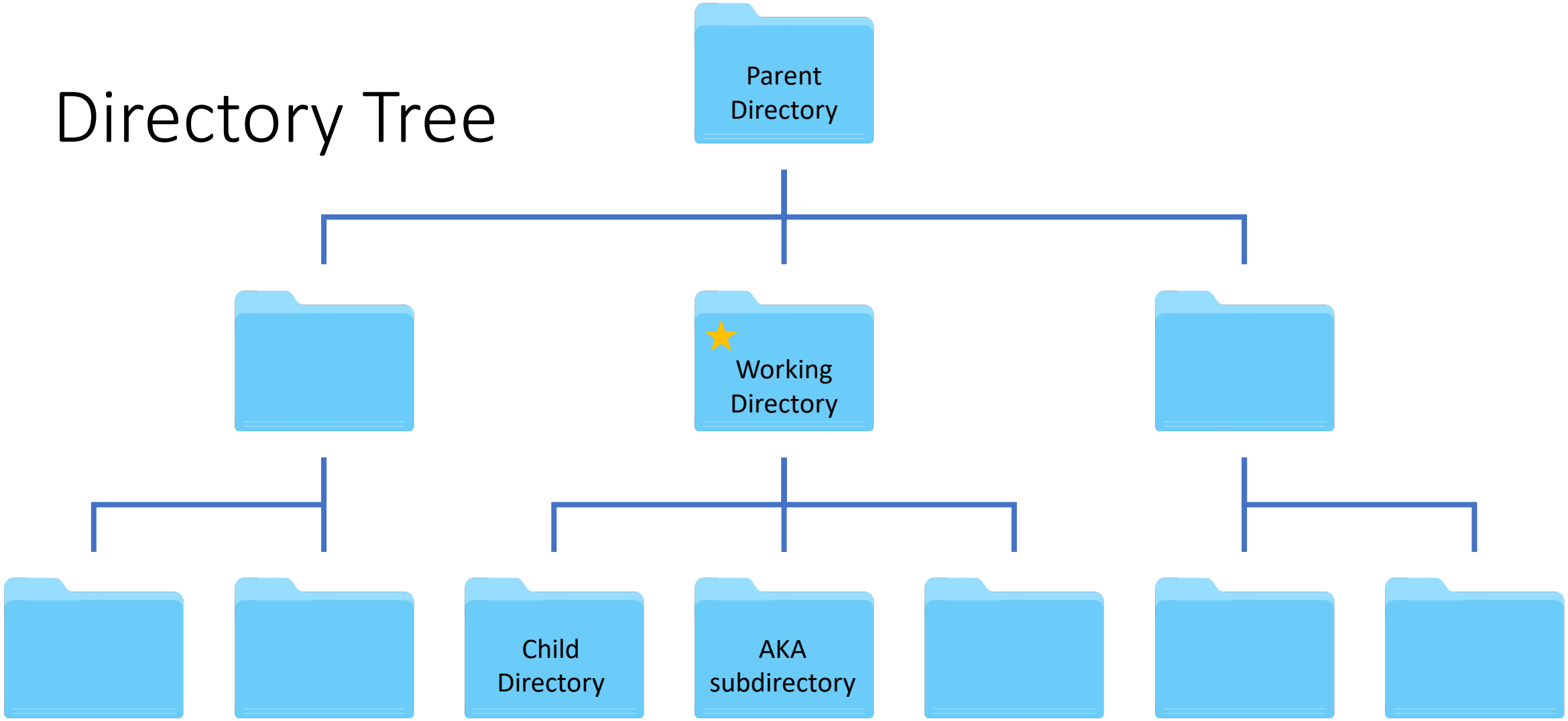
spaces

```
Sepal.Length·Sepal.Width·Petal.Length·Petal.Width·Species¬
5.1·3.5·1.4·0.2·setosa¬
4.9·3·1.4·0.2·setosa¬
4.7·3.2·1.3·0.2·setosa¬
4.6·3.1·1.5·0.2·setosa¬
5·3.6·1.4·0.2·setosa¬
```

Or any other character (BUT NEVER DO THIS)

```
Sepal.Length/Sepal.Width/Petal.Length/Petal.Width/Species¬
5.1/3.5/1.4/0.2/setosa¬
4.9/3/1.4/0.2/setosa¬
4.7/3.2/1.3/0.2/setosa¬
4.6/3.1/1.5/0.2/setosa¬
5/3.6/1.4/0.2/setosa¬
```

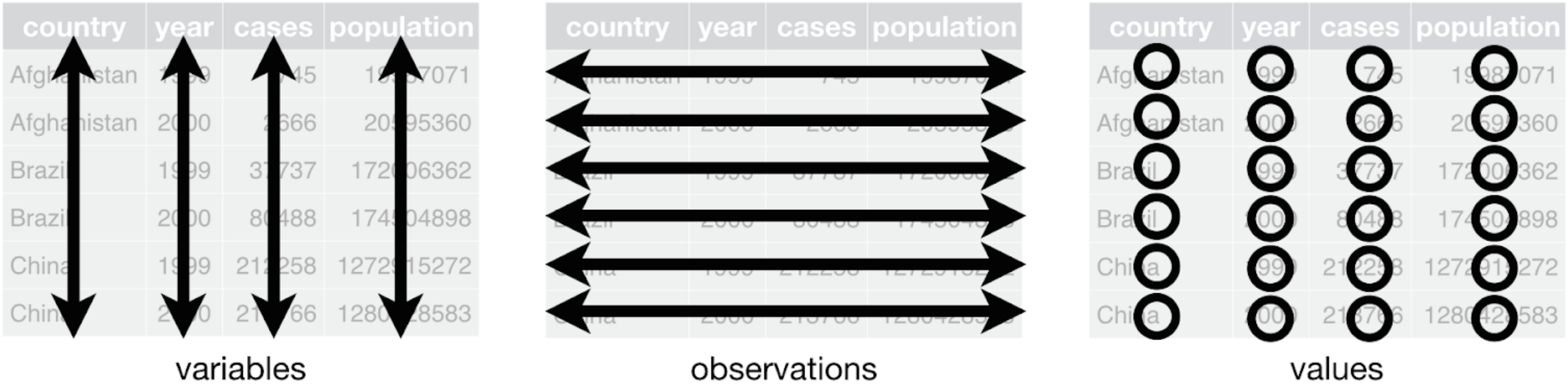
Directory Tree



File Path: `working_directory/child_directory`

Tidying Data

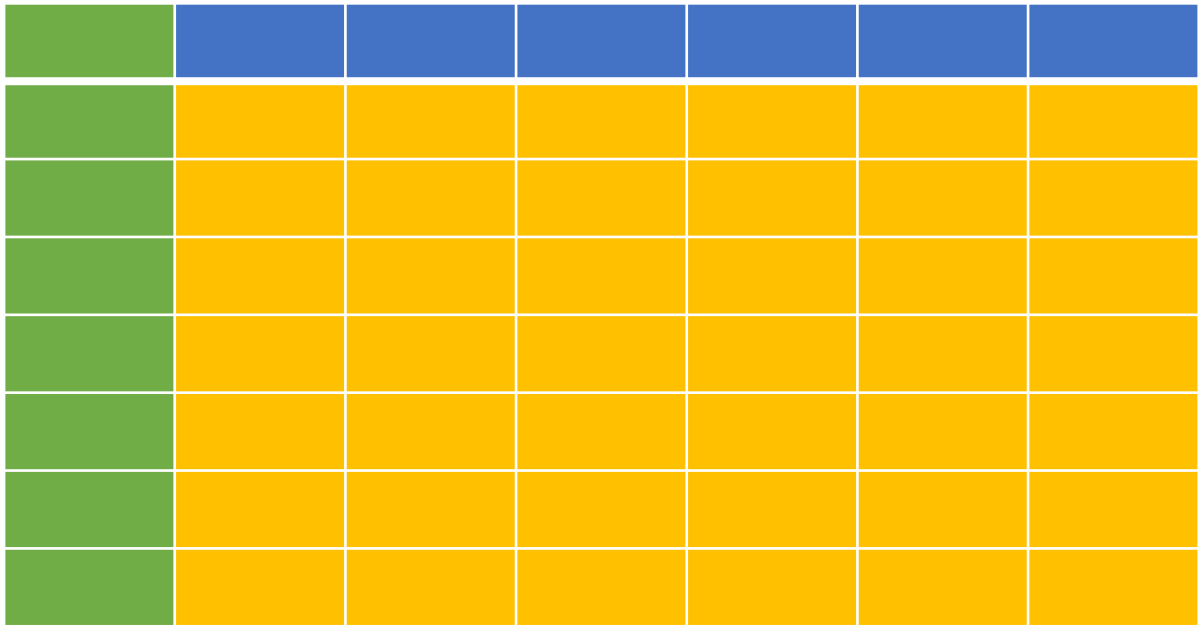
Tidy Data



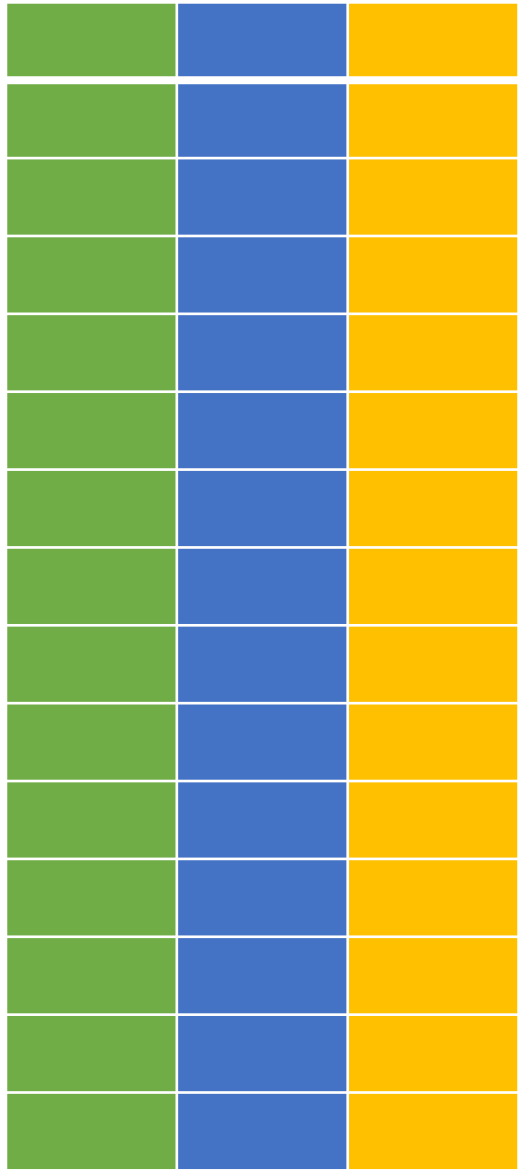
1. Each variable is in a column.
2. Each observation is a row.
3. Each value is a cell.

Wide vs Skinny Data

Wide



Skinny



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