

Pre-Training Principle

Previously...

Variables are _____



Columns are _____



Now...

city	large	small
New York	3	4
London	2	6
Beijing	121	56

Variables in the columns



city	large	small
New York	3	4
London	2	6
Beijing	121	56

Variables in the columns



Signaling Principle

```
babynames %>%  
  group_by(name, sex) %>%  
  ungroup() %>%  
  summarise(total = sum(n)) %>%  
  arrange(desc(total))  
  
#           total  
# 1 340851912
```

*Use ungroup()
to...*



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babynames %>%  
  group_by(name, sex) %>%  
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