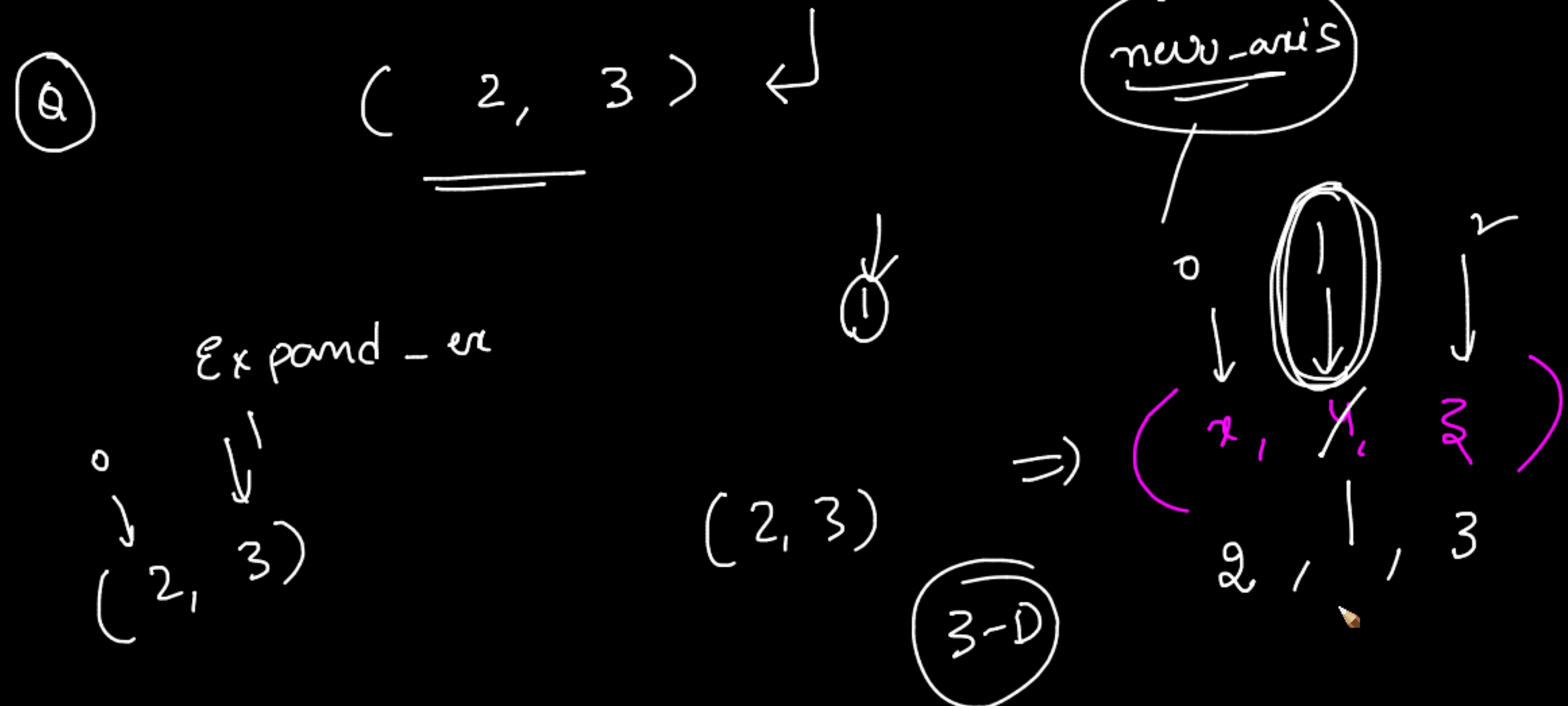


Agenda

- * Dimension Expansion & Reduction Why? What?
 - * Installation of Pandas
 - * Basic operations on a DataFrame from scratch
 - * Creating a DataFrame from scratch
 - * Basic operations on columns
 - * Basic Operations on rows.
- on time
Assignments
Revise
-

Dimension Expansion

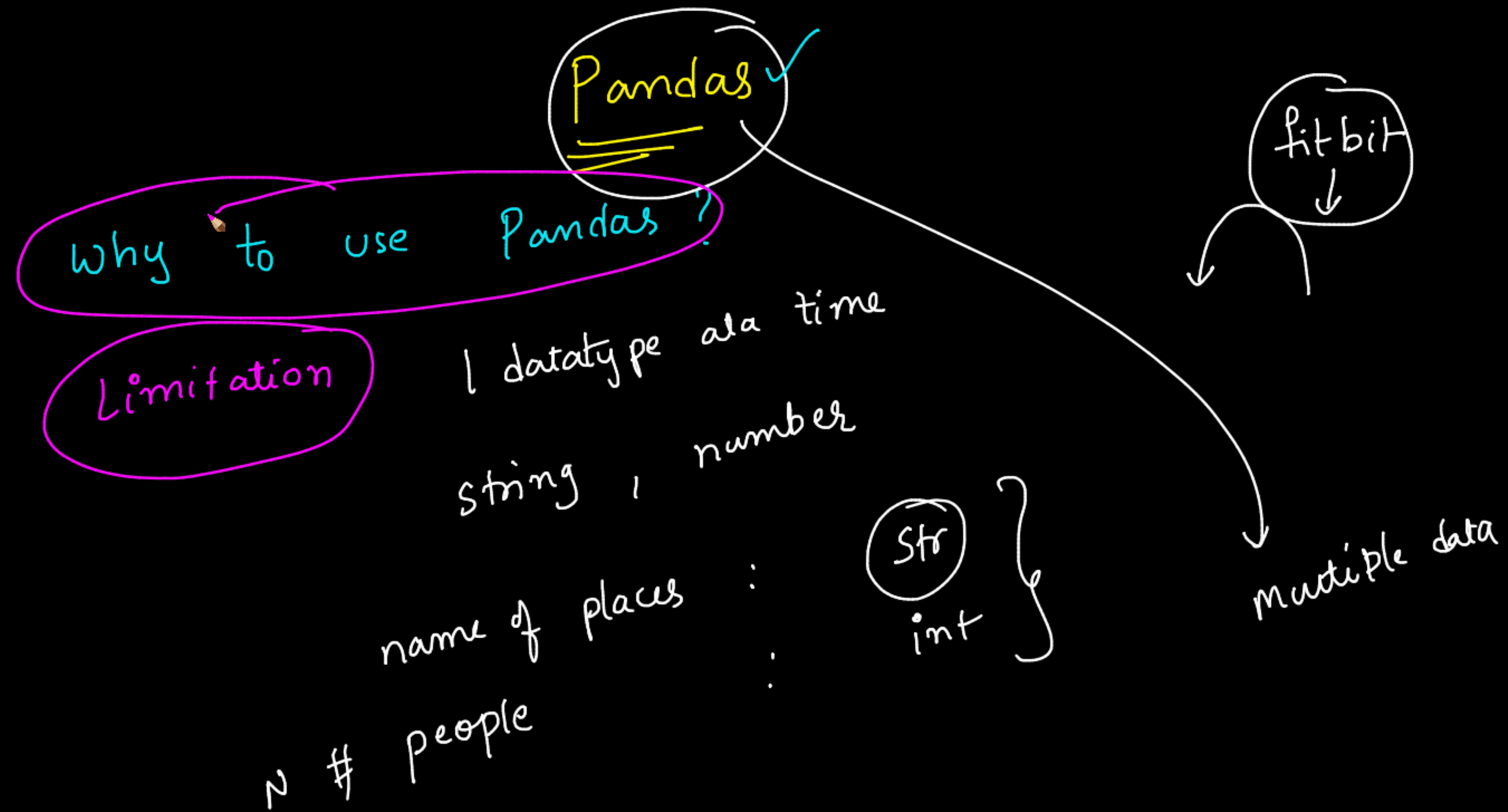


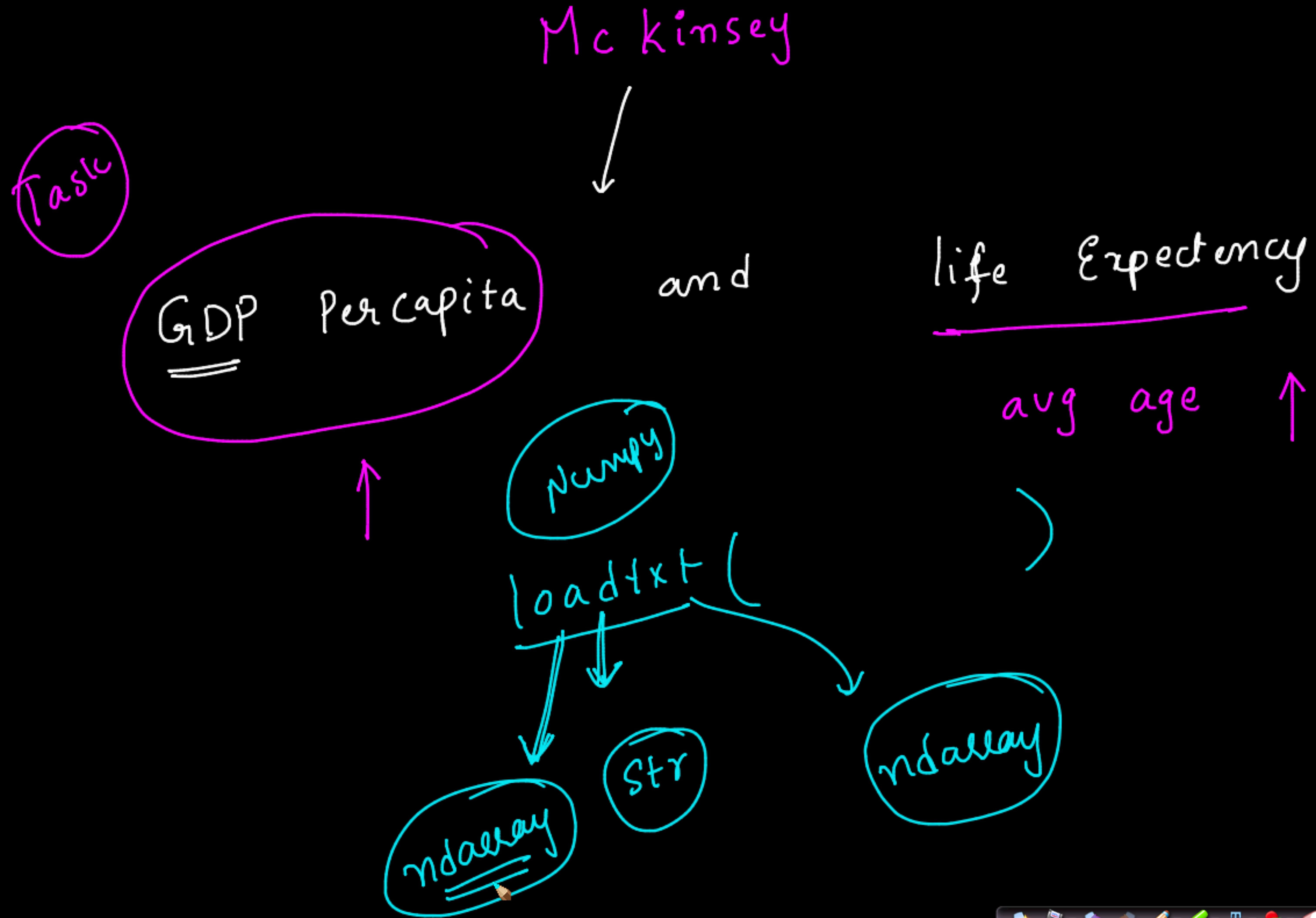
Expansion
↓
fake dimension
↓

axis

Reduction
↓
Squeeze
↓

↓

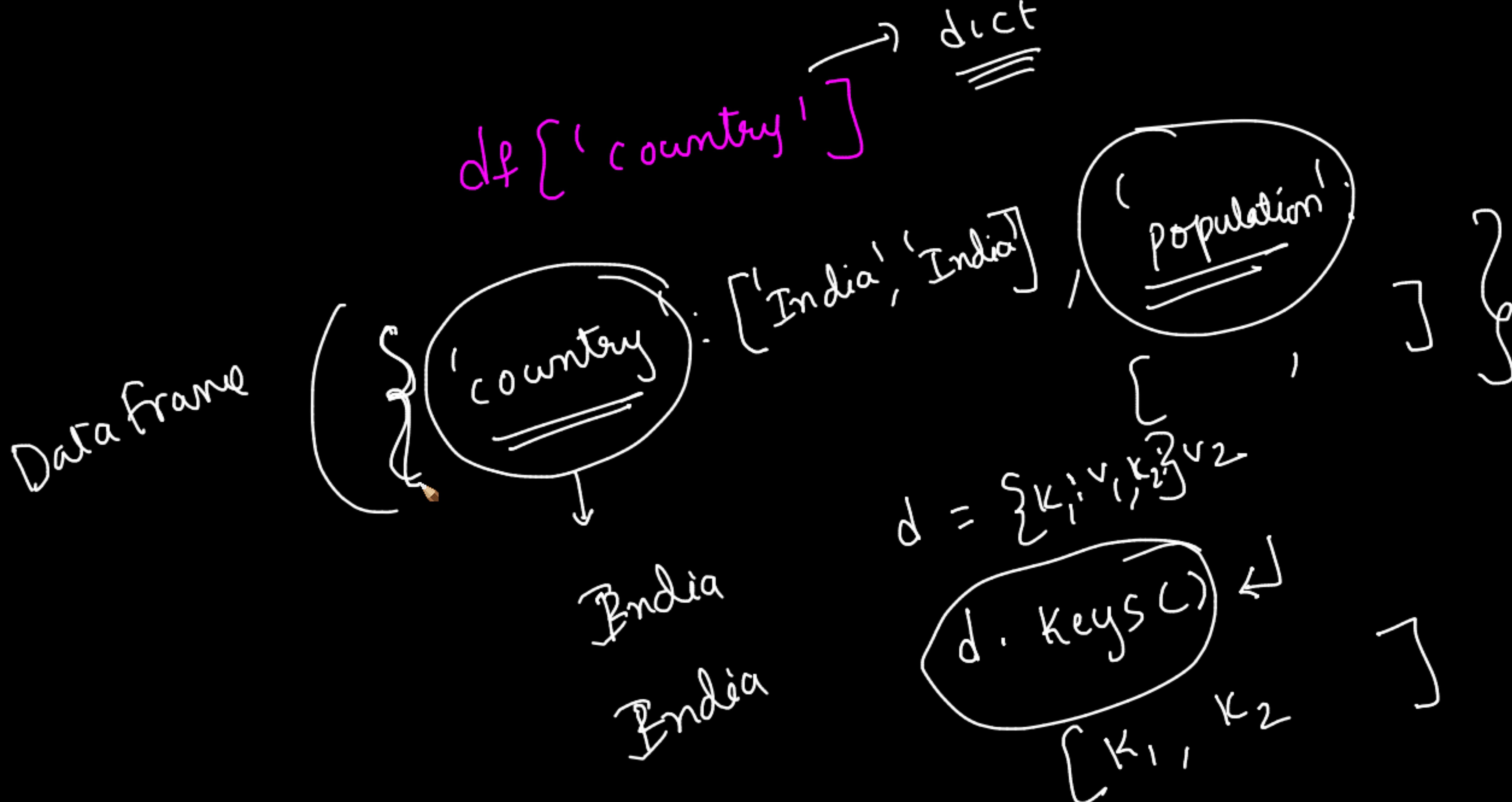




lst = [0, 1, 2, 3
 | 10, 50, 100, 200]

Series : 1 column in a data
Data frame : multiple series stacked together
 to form a data frame 100
 $d = \{ k_1: v_1, k_2: v_2 \}$
 $d[k_1]$

([[, , ,]], [↓]]),
↑
columns = [' , , , , ,]
↓ [[]]
[[]]
x []
[]



A hand-drawn diagram on a black background. At the top left, there is a mathematical expression: $d = \sum x_i : \{x_i\}$. To the right of this, a vertical axis is shown with a small circle at the origin and a double-headed arrow indicating it extends upwards and downwards. Below this, another vertical axis is shown with a small circle at the origin and a double-headed arrow. A horizontal axis is drawn from the right side of the bottom vertical axis towards the right, ending with a double-headed arrow. The word "axis" is written in pink ink inside a circle on the bottom-left vertical axis. The word "renamed" is written in pink ink above the bottom-left vertical axis. In the bottom right corner, there is a large, irregular white shape.

