

# Data Structures

# Intuition

- Height in Cm

# Intuition

- Height in Cm

Ramesh = 150

Suresh = 145

Sudesh = 165

# Intuition

- Height in Cm
- Weight in Kgs

Ramesh = 150

Suresh = 145

Sudesh = 165

# Intuition

- Height in Cm
- Weight in Kgs

Ramesh\_height = 150

Suresh\_height = 145

Sudesh\_height = 165

Ramesh\_weight = 56

Suresh\_weight = 60

Sudesh\_weight = 65

# Intuition

- Height in Cm
- Weight in Kgs
- Age in Years

Ramesh\_height = 150

Suresh\_height = 145

Sudesh\_height = 165

Ramesh\_weight = 56

Suresh\_weight = 60

Sudesh\_weight = 65

Ramesh\_age = 23

Suresh\_age = 46

Sudesh\_age = 58

# Intuition

- Height in Cm
- Weight in Kgs
- Age in Years
- .
- .
- Some info

Ramesh\_height = 150

Suresh\_height = 145

Sudesh\_height = 165

Ramesh\_weight = 56

Suresh\_weight = 60

Sudesh\_weight = 65

**How Many Variables?**

Ramesh\_age = 23

Suresh\_age = 46

Sudesh\_age = 58

# Why Data Structures?

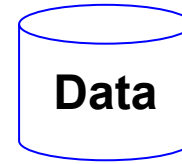
**Existing data types** - int, float, bool, str

## **Problems with Existing Data types**

- Data in a variable can be stored in a single format i.e either integers or decimals or strings etc.
- Large memory overhead by creating large number of variables.
- Unfit for storing large structured data.

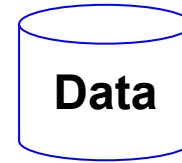


# What is a Data Structure?



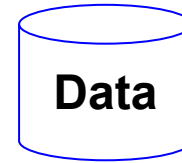
# What is a Data Structure?

- Efficient storage for large data



# What is a Data Structure?

- Efficient storage for large data
- Manipulations/Operations on data

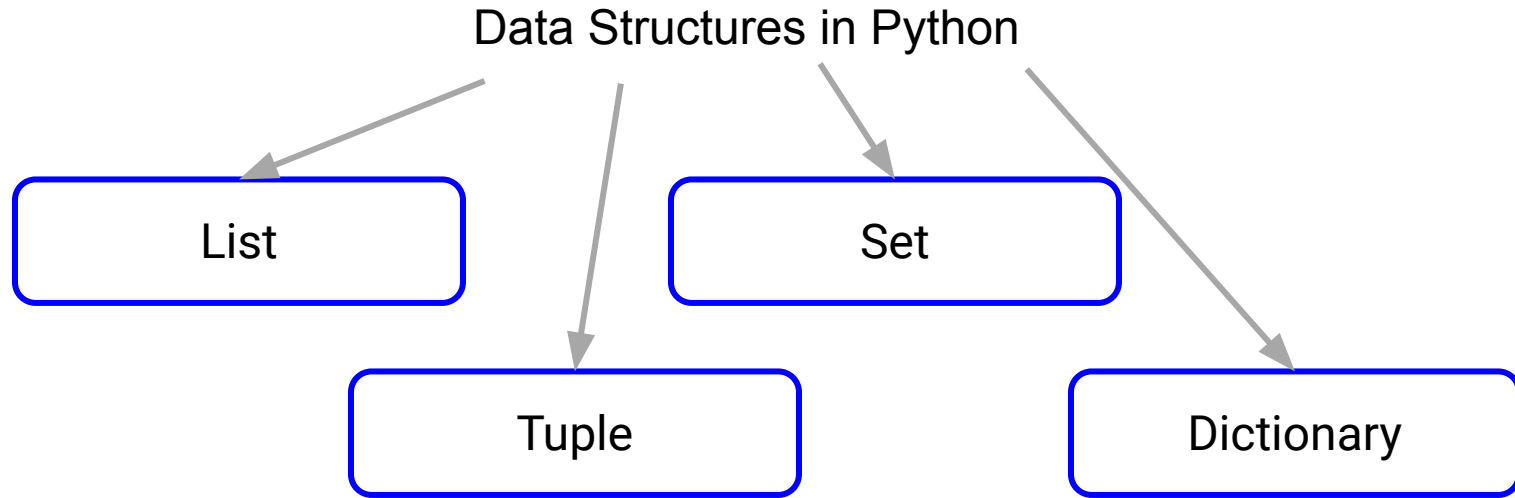


# What is a Data Structure?

- Efficient storage for large data
- Manipulations/Operations on data
- Underlying Relationships of data

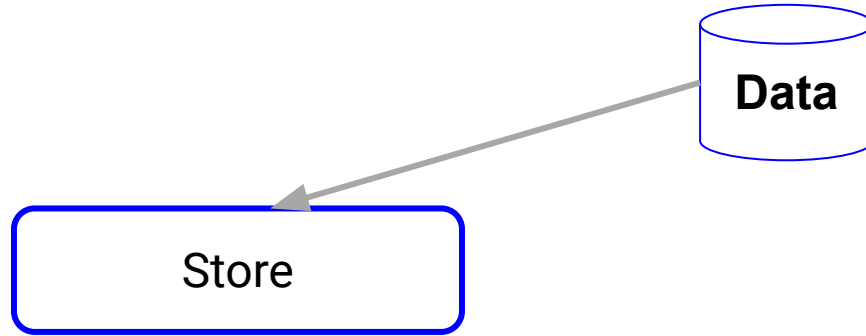


# Different Data Structures in Python

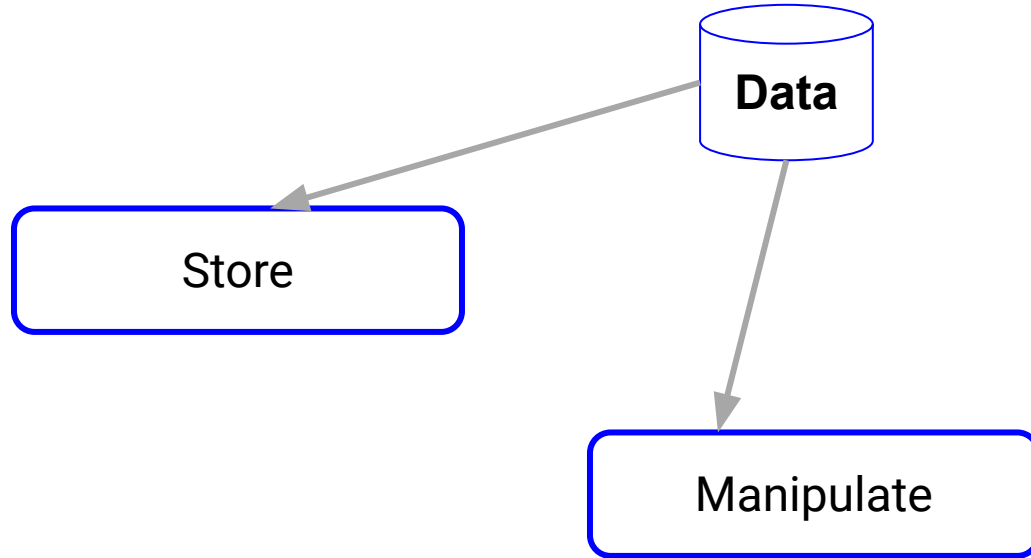


Thank You!

# What is a Data Structure?

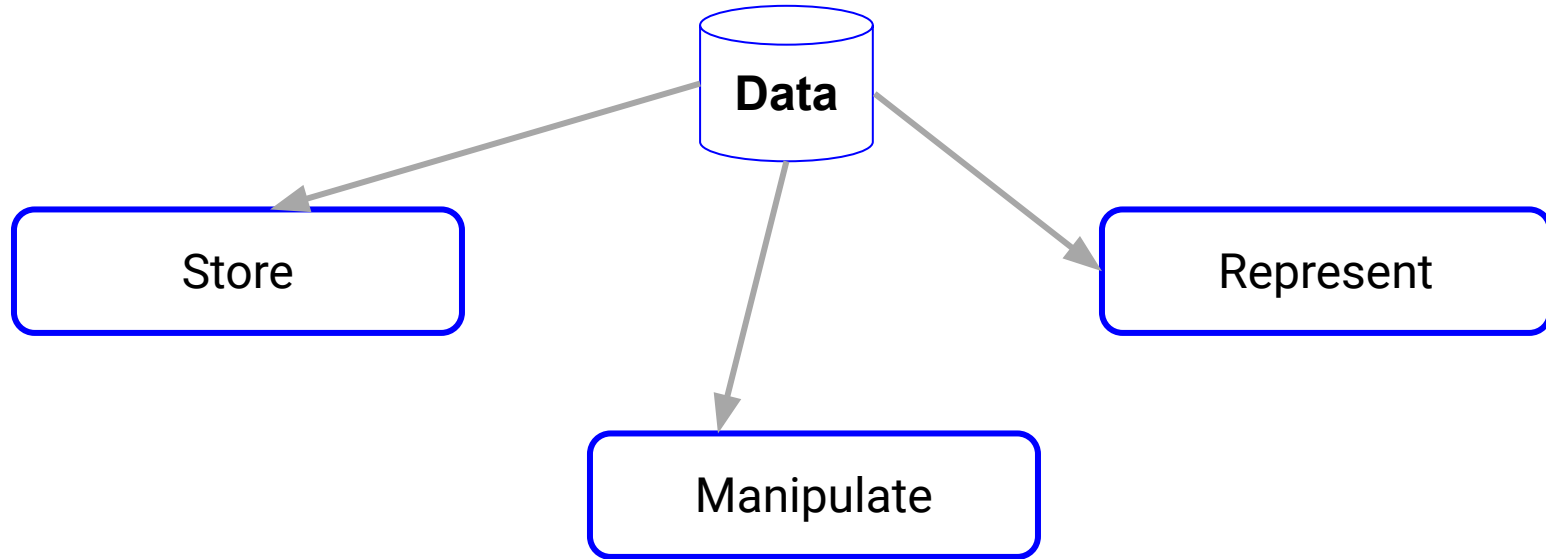


# What is a Data Structure?





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