What is Missing Value/Data?

- **In the variable or any observation, values are not stored called as missing values/data.**

Age	Sex	Male	Female	Age range
23	Male		0	21-30
12	Female	0	1	
34	Male	1	0	31-40
26		0	1	21-30
	Male	1	0	11-20
38	Male	1	0	31-40

# What are the Methods to Handle Missing Values?

- **Ignore missing values row / Delete row**
- **Fill missing value manually**
- **Global constant**
- **Measure of central tendency** *(Mean, Midian & Mode)*
- **Measure of central tendency for each class**
- **Most probable value** *(ML Algorithms)*

Ignore Missing Values Row / Delete Row

Dev	Exper.	Salary
Java	1	20000
Python	4	
Java	1.5	25000
Python	2	40000
Python	4	80000
	2	

Dev	Exper.	Salary
Java	1	20000
Java	1.5	25000
Python	2	40000
Python	4	80000

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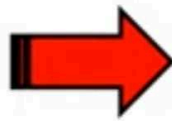
Fill Missing Value Manually

St. Percentage	Present
80	P
45	P
34	
00	A

St. Percentage	Present
80	P
45	P
34	P
00	A

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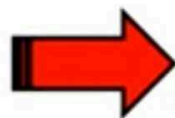
Global Constant

Age	Sex
23	Male
12	Female
34	Male
26	
	Male
38	Male

→
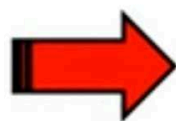
Age	Sex
23	Male
12	Female
34	Male
26	Unknown
0	Male
38	Male

Measure Of Central Tendency

- **Mean, Midian, Mode**

Dev	Exper.	Salary
Java	1	20000
Python	4	
Java	1.5	25000
Python	2	40000
Python	4	80000
Java	2	
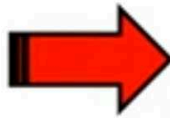
Dev	Exper.	Salary
Java	1	20000
Python	4	41250
Java	1.5	25000
Python	2	40000
Python	4	80000
Java	2	41250

Measure Of Central Tendency For Each Class

- **Mean, Midian, Mode for each classes**

Dev	Exper.	Salary
Java	1	20000
Python	4	
Java	1.5	25000
Python	2	40000
Python	4	80000
Java	2	
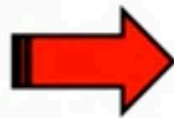
Dev	Exper.	Salary
Java	1	20000
Python	4	60000
Java	1.5	25000
Python	2	40000
Python	4	80000
Java	2	22500

Most Probable Value

- **Use ML Algorithms – Linear Regg, Decision Tree**

Dev	Exper.	Salary
Java	1	20000
Python	4	
Java	1.5	25000
Python	2	40000
Python	4	80000
Java	2	

➡️
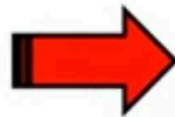
Dev	Exper.	Salary
Java	1	20000
Python	4	80000
Java	1.5	25000
Python	2	40000
Python	4	80000
Java	2	30000

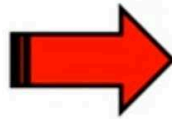# What are the Methods to Handle Missing Values?

- **Ignore missing values row / Delete row**
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- **Measure of central tendency for each class**
- **Most probable value** *(ML Algorithms)*

Ignore Missing Values Row / Delete Row

Dev	Exper.	Salary
Java	1	20000
Python	4	
Java	1.5	25000
Python	2	40000
Python	4	80000
	2	

Dev	Exper.	Salary
Java	1	20000
Java	1.5	25000
Python	2	40000
Python	4	80000

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