

# Missing Values

# Missing Values

What is a missing value?

# Missing Values

gender	dependents	occupation	city	customer_nw_category	branch_code	current_balance
Male	0.0	self_employed	187.0	2	755	1458.71
Male	0.0	self_employed	NaN	2	3214	5390.37
Male	0.0	salaried	146.0	2	41	3913.16
NaN	NaN	self_employed	1020.0	2	582	2291.91
Male	2.0	self_employed	1494.0	3	388	927.72

# Reasons for Missing Values

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- Human Error

# Reasons for Missing Values

- Human Error
- Extraction Error

# Reasons for Missing Values

- Human Error
- Extraction Error
- Customer's Privacy

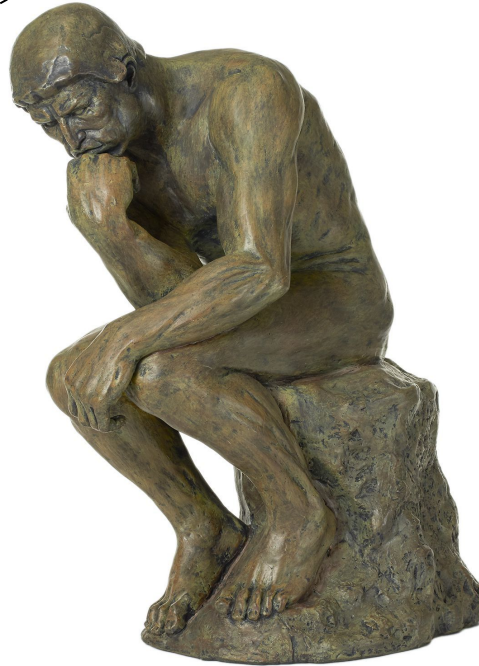
# Reasons for Missing Values

- Human Error
- Extraction Error
- Customer's Privacy
- Other Factors



# Missing Values

What do we do?



# Missing Values

Removing Data point with missing values

# Missing Values

Removing Data point with missing values

Loss of Data

# Missing Values

Removing Data point with missing values

```
graph TD; A[Removing Data point with missing values] --> B[Loss of Data]; A --> C[Loss of Pattern];
```

Loss of Data

Loss of Pattern

# Missing Values

0	Male
1	Male
2	Male
3	NaN
4	Male
5	Female

# Missing Values

Replacing Missing Values

# Missing Values

Replacing Missing Values

Using Central Tendency

# Missing Values

Replacing Missing Values

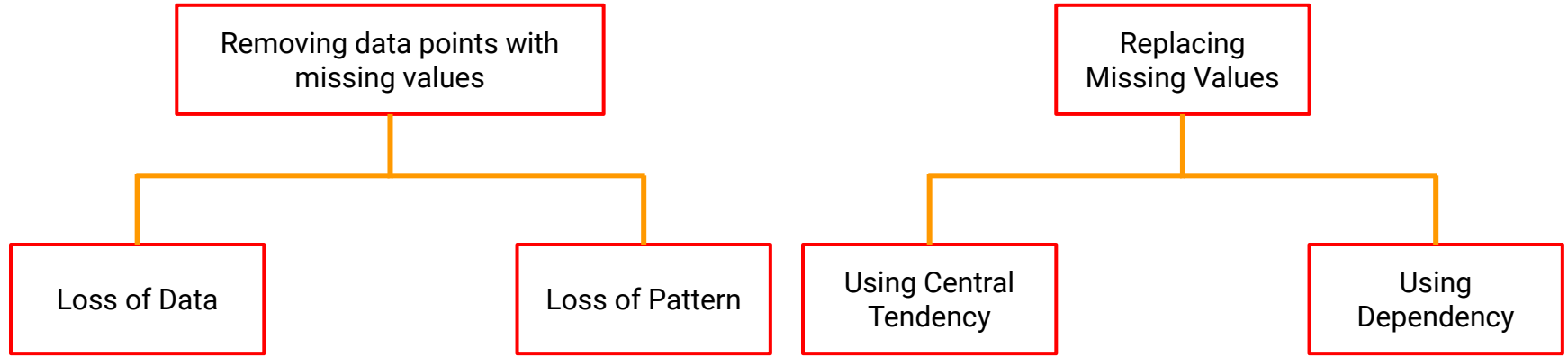
```
graph TD; A[Replacing Missing Values] --> B[Using Central Tendency]; A --> C[Using Dependency];
```

Using Central Tendency

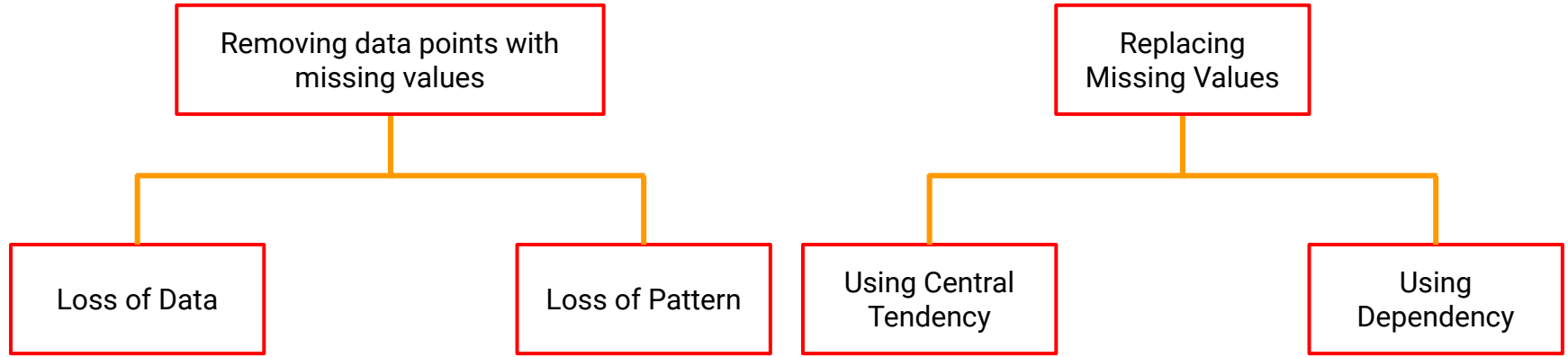
Using Dependency



# Missing Values



# Missing Values



*Imputing missing values will alter EDA insights.*

Thank You