

HBase

Part 2

by Sumit Mittal



Trainer Introduction



Mr. Sumit Mittal, CEO & founder of **TrendyTech**. He has a Master's degree in Computer Applications from NIT Trichy & have a total of 7+ years of industry experience. He has worked for top MNC's like **Cisco** & **VMware**.



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Bigdata course

How Is Data Laid out in HBase?

Notification Data in a Traditional Database

Id	To	Type	Content
1	mike	offer	Offer on mobiles
2	john	sale	Redmi sale
3	jill	order	Order delivered
4	megan	sale	Clothes sale

This is a 2-dimensional data model

Notification Data in a Traditional Database

Id	To	Type	Content
1	mike	offer	Offer on mobiles
2	john	sale	Redmi sale
3	jill	order	Order delivered
4	megan	sale	Clothes sale

unique row id

column name

HBase has a **4-dimensional**
data model

4-dimensional Data Model

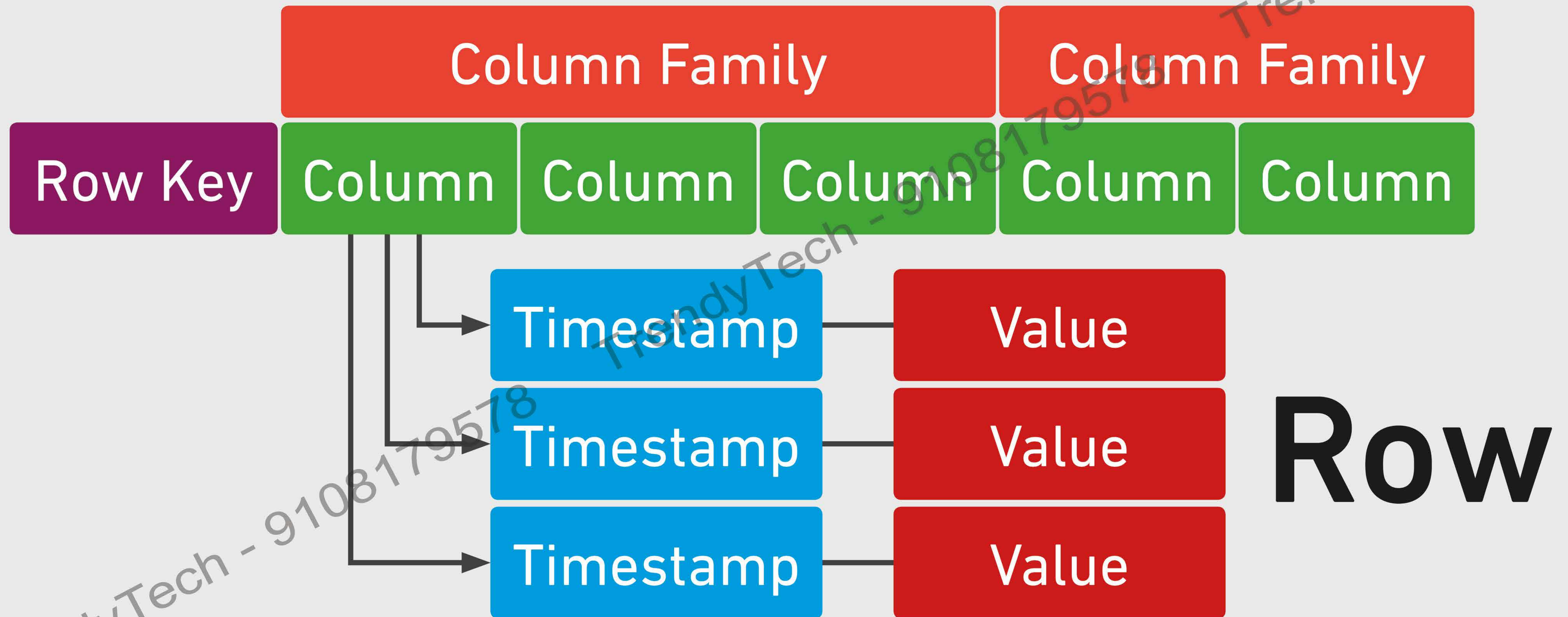
Row Key

Column
Family

Column

Timestamp

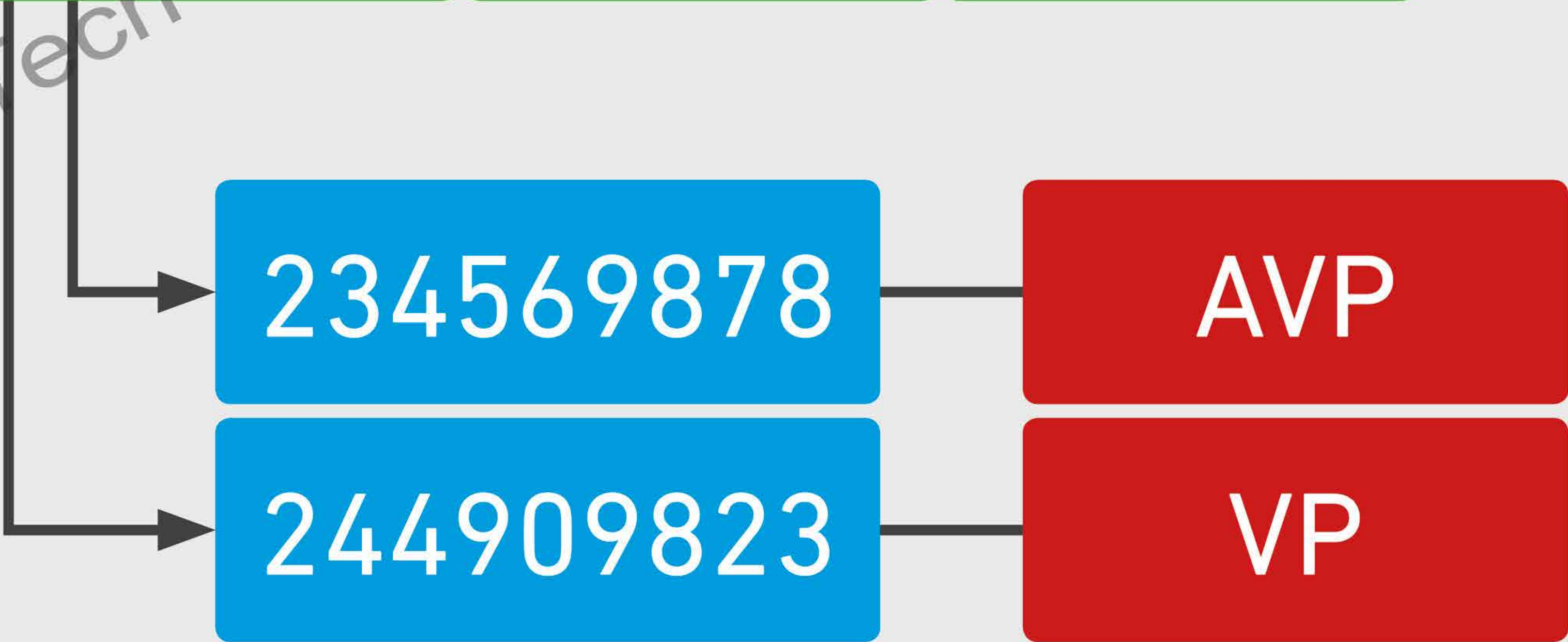
4-dimensional Data Model



A Table for Employee Data

Work				Personal	
Empld	Dept	Grade	Title	Name	SSN

A record for
a single
employee



Notification Data

Id	To	Type	Content
1	mike	offer	Offer on mobiles
2	john	sale	Redmi sale
3	jill	order	Order delivered
4	megan	sale	Clothes sale

Id	Column	Value
1	To	mike
1	Type	offer
1	Content	Offer on mobiles
2	To	john
2	Type	sale
2	Content	Redmi sale
3	To	jill
3	Type	order
3	Content	Order delivered
4	To	megan
4	Type	sale
4	Content	Clothes sale

Row Key

Uniquely identifies a row

Can be primitives, structures, arrays

Represented internally as a byte array

Sorted in ascending order

Column Family

All rows have the same set of column families

Each column family is stored in a separate data file

Set up at schema definition time

Can have different columns for each row

Column

Columns are units within a column family

New columns can be added on the fly

ColumnFamily:

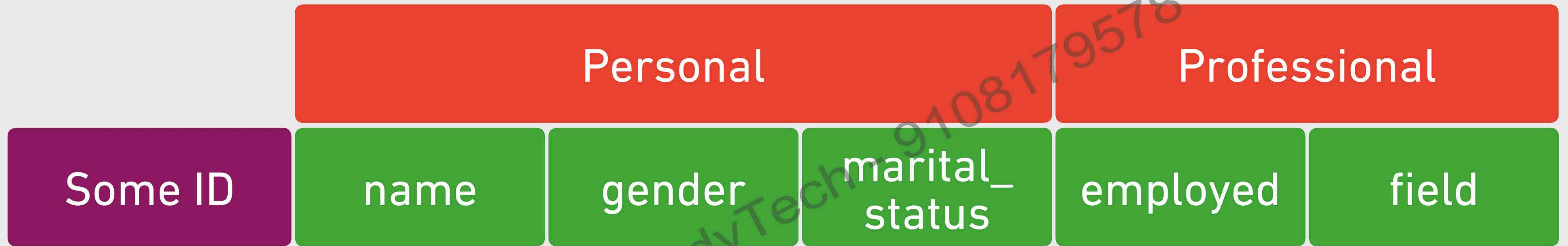
ColumnName = Work:Department

Timestamp

Used as the version number for the values stored in a column

The value for any version can be accessed

Census Data Layout in HBase





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