Module 1: SQL & Relational Database

Lesson 5: Relational Model concepts

- Define relational terms
- Explain the difference between a relational schema and a relational instance

Atul Kadlag

Relational Model Concepts

- First proposed in 1970 based on mathematical model and terms
- Building Blocks:
  - Relation
  - Sets
- Set
  - Unordered collection of distinct elements
  - Items of same type
  - No Order & no duplicates

Relational Database

- A Set of relations
- Relation = mathematical term for table
- 2 components
  - Relation Schema
  - Relation Instance

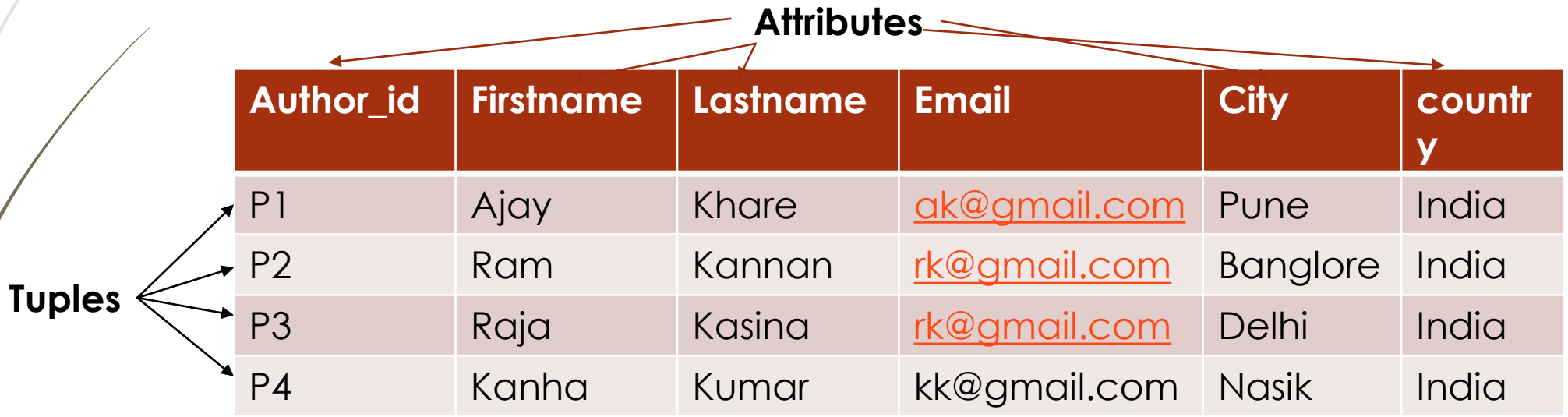
Relation schema

- Specifies the name of relation schema and the name and type of each column

Author (author_id:char,
lastname: varchar,
firstname:varchar,
email:varchar,
City:varchar,
country:car)

Relation Instance

- Made up of rows and columns
- Degree = the number of attributes in a relation
- Cardinality = the number of tuples



Author_id	Firstname	Lastname	Email	City	country
P1	Ajay	Khare	ak@gmail.com	Pune	India
P2	Ram	Kannan	rk@gmail.com	Banglore	India
P3	Raja	Kasina	rk@gmail.com	Delhi	India
P4	Kanha	Kumar	kk@gmail.com	Nasik	India

Degree = 6
Cardinality = 4

Summary

- Relational Model
- Relation
- Relation schema
- Relation Instance
- Degree
- Cardinality