

DBMS

NORMAL FORMS

WHAT EXACTLY IS NORMALISATION?

- ▶ Normalisation is the process of minimising data redundancy.
- ▶ Types of Normal forms:
 - 1NF
 - 2NF
 - 3NF ...

1 NF

Each Cell contains a single value.

Email	Name	Age	movie_rented	runtime
audria@gmail.com	Audria	25	['Pirates of the caribbean', 'Harry Potter 7']	[168, 179]
jake@gmail.com	Jake	19	['Inception']	[190]
kurt@gmail.com	Kurt	30	['Pirates of the caribbean', 'Inception']	[168, 190]

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audria@gmail.com	Audria	25	Harry Potter 7	179
jake@gmail.com	Jake	19	Inception	190
kurt@gmail.com	Kurt	30	Pirates of the caribbean	168
kurt@gmail.com	Kurt	30	Inception	190

FUNCTIONAL DEPENDENCY

1. $(\text{email}, \text{movies_rented}) \rightarrow *$
2. $\text{email} \rightarrow \text{email}, \text{name}, \text{age}$
3. $\text{movies_rented} \rightarrow \text{movies_rented}, \text{runtime}$

2 NF

No partial key dependency.

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kurt@gmail.com	Kurt	30	Inception	190

Email	Name	Age	Movies_rented	runtime	Email	movies_rented
audria@gmail.com	Audria	25	Pirates of the caribbean	168	audria@gmail.com	POTC
					audria@gmail.com	HP7
jake@gmail.com	Jake	20	Harry Potter 7	179	jake@gmail.com	In
					kurt@gmail.com	POTC
kurt@gmail.com	Kurt	30	Inception	190	kurt@gmail.com	In

3 NF

- ▶ No transitive dependency.
- ▶ All non-key attributes should not be dependent on another non-key attributes

Book ID	Genre ID	Genre Type	Price
1	1	Gardening	25.99
2	2	Sports	14.99
3	1	Gardening	10.00
4	3	Travel	12.99
5	2	Sports	17.99

3 NF

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Book ID -> Genre ID

Genre ID -> Genre Type