

# M22CS4.301: Data and Applications

## Phase 3

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## ER to Relational model

### Strong entities

- Created **users** table for the **user** entity with **id** as the primary key.
- Created **label\_companies** table for the **record label company** entity with **name** as the primary key
- Created **songs** table for the **song** entity with **id** as the primary key
- Created **creators** table for the **creator** entity with **id** as the primary key, also made separate tables **artists** and **bands** for the **artist** and **band** subclass of **creator**

### Weak entities

- Created **albums** table for the **album** entity with **creator\_id** as an extra attribute and using **(name, creator\_id)** as primary key
- Created **playlist** table for the **playlist** entity with **user\_id** as an extra attribute and using **(name, user\_id)** as primary key

### Relations

- Created **worked\_on** table for the **works on** relation with **(created\_id, song\_id)** as the primary key
- Created **listens** table for **listens** relation with **(user\_id, timestamp)** as primary key
- Created **belongs** table for **belongs** relations with **artist\_id** as primary key
- Created **edit\_access** table for **Has edit access** relation with **(playlist\_name, creator\_user\_id, editor\_user\_id)** as primary key
- Created **release\_information** table for **CSAL** relation with **song\_id** as primary key
- Created **playlist\_songs** table for **USPU** relation with **(playlist\_name, creator\_user\_id, song\_id)** as primary key



## 1st normalization (1NF)

### Multivalued Attributes

- Created **creator\_awards** table for the multivalued attribute **award**
- Created **artists\_instruments** table for the multivalued attribute **instrument** in the **artists** table
- Created **band\_genres** table for the multivalued attribute **genre** in the **bands** table
- Created **song\_instruments** table for the multivalued attribute **songs** table
- Created **song\_genres** table for the multivalued attribute **genre** in the **songs** table

## 2nd and 3rd normalizations

As there are no functional dependencies in our relational model apart from the ones with primary or candidate keys, so the 2nd and 3rd normalizations will be the same as 1st normalization.

