

DATABASE MANAGEMENT SYSTEMS

PROJECT NORMALISATION

MTH Inaidi, API7110010074, CSE B

LOST AND FOUND SYSEM

The original Database schema is

— } → Denotes P. key.

Items

<u>Item ID</u>	Name	desption	Image	Status
----------------	------	----------	-------	--------



People

<u>Pid</u>	Name	Contact
------------	------	---------



DB Transactions


<u>Pid</u>	<u>Item ID</u>	Action	Date time
------------	----------------	--------	-----------

2st Normal form

→ In the above database scheme. There can exist multiple images for a single item. Which is not allowed in the 2NF.

Items

<u>ItemID</u>	Name	description	Status
---------------	------	-------------	--------




Item Images.

<u>ItemID</u>	<u>Image</u>
---------------	--------------

People

<u>Pid</u>	Name	Contact	Department	Year
------------	------	---------	------------	------



DB Transactions

<u>Pid</u>	<u>ItemID</u>	Action	DateTime
------------	---------------	--------	----------



2nd Normal form

→ The below Relation Schema is already in 2NF because Here, all non prime attribute depend on the Primary key.

Items

<u>ItemID</u>	Name	description	Status
---------------	------	-------------	--------

A pink line with four upward-pointing arrows originates from the ItemID column and points to the Name, description, and Status columns, indicating that these non-prime attributes are functionally dependent on the primary key.

Item Images.

<u>ItemID</u>	<u>Image</u>
---------------	--------------

People

<u>Pid</u>	Name	Contact	Department	Year
------------	------	---------	------------	------

A pink line with five upward-pointing arrows originates from the Pid column and points to the Name, Contact, Department, and Year columns, indicating that these non-prime attributes are functionally dependent on the primary key.

DB Transactions

<u>Pid</u>	<u>Item ID</u>	Action	Date time
------------	----------------	--------	-----------


A pink line with three upward-pointing arrows originates from the Pid and Item ID columns and points to the Action and Date time columns, indicating that these non-prime attributes are functionally dependent on the primary key.

3rd Normal form

→ Here, in the People table, $Pid \rightarrow Contact$
- and then $Contact \rightarrow Name$ i.e. there
exists a transitive dependency from $Pid \rightarrow Name$
i.e. it violates 3NF. This can be solved
by breaking the Person table into $Pid \{ Contact$
and Pid and all other attributes. Here
the schema will look like:

Items

<u>ItemID</u>	Name	description	Status
---------------	------	-------------	--------




Item Images.

<u>ItemID</u>	<u>Image</u>
---------------	--------------


People

<u>Pid</u>	Name	Depart.	Year
------------	------	---------	------



People Contact


<u>Pid</u>	Contact
------------	---------



A pink bracket connects the Pid column to the Contact column, with an upward-pointing arrow at the right end.

DB Transactions

<u>Pid</u>	<u>Item ID</u>	Action	Date time
------------	----------------	--------	-----------



A pink bracket connects the Pid and Item ID columns to the Action and Date time columns, with upward-pointing arrows at the right end.