

➤ Normalization Proof

1) User1:

Login_id → Password
Login_id → Block_no
Login_id → Apartment_name
Login_id → Street
Login_id → Pin
Login_id → Name1
Login_id → Rto_code

Key: Login_id

2) Pincode:

Pin → State1
Pin → City

Key: Pin

3) Phone:

{Phone_no, Login_id} → No Dependency

Key: {Login_id, Phone_no}

4) RTO_Office:

Pin → Street
Pin → Rto_code

Key: Pin

5) RTO_Phone:

{Rto_code, Pin} → No Dependency

Key: {Rto_code, Pin}

6) Employee:

Employee_id → Rto_code
Employee_id → Name1
Employee_id → Joining_date
Employee_id → Dob
Employee_id → Gender
Employee_id → Block_no
Employee_id → Apartment_name

Employee_id → Street

Employee_id → Pin

Key: Employee_id

7) Employee_phone:

{Employee_id, Phone_no} → No Dependency

Key: {Employee_id, Phone_no}

8) Licence:

Login_id → Holder_name

Login_id → Dob

Login_id → Vehicle_type

Login_id → Block_no

Login_id → Apartment_name

Login_id → Street

Login_id → Pin

Key: Login_id

9) Learner:

LL_no → LL_issuedate

LL_no → LL_validity

LL_No → Login_id

Login_id → LL_no

Candidate key: LL_no, Login_id

Key: LL_no

10) Duplicate:

DDL_no → LL_issuedate

DDL_no → DDL_validity

DDL_no → Login_id

Login_id → DDL_no

Candidate key: Login_id, DDL_no

Key: DDL_no

11) Permanent:

DL_no → DL_issuedate

DL_no → DL_validity

DL_no → Login_id

Login_id → DL_no

Candidate key: Login_id, DL_no

Key: DL_no

12) Exam:

$\{LL_no, Attempt_no\} \rightarrow \{Exam_date, Result\}$

Key: $\{LL_no, Attempt_no\}$

13) LL_Exam:

$LL_no \rightarrow Vehicle_type$

Key: LL_no

14) Payment:

$Application_no \rightarrow Amount$

$Application_no \rightarrow Payment_date$

$Application_no \rightarrow Cash_flag$

$Application_no \rightarrow Login_id$

Key: $Application_no$

15) Cheque:

$Application_no \rightarrow Account_no$

Key: $Application_no$

16) UPI:

$Application_no \rightarrow Account_no$

Key: $Application_no$

17) UPI_transaction:

$Account_no \rightarrow Upi_id$

Key: $Account_no$

18) User_charges:

$\{Login_id, Challan_no\} \rightarrow \{no\ dependencies\}$

Key: $\{Login_id, Challan_no\}$

19) Charges:

$Challan_no \rightarrow Vehicle_type$

Challan_no → Offender_name
Challan_no → Amount
Challan_no → Officer_id
Challan_no → Offence_date
Challan_no → Vehicle_no
Challan_no → Location
Challan_no → Offence
Challan_no → Application_no

Key: Challan_no

20) Insurance:

Insurance_no → Registering_authority
Insurance_no → Puc_status
Insurance_no → Insurance_upto
Insurance_no → Fitness_upto
Insurance_no → MV_taxupto
Insurance_no → Finance
Registration_No → Insurance_no

Candidate key : Insurance_no, Registration_no

Key: Insurance_no

21) PUC:

Puc_srno → Issued_by
Puc_srno → Issue_date
Puc_srno → Due_date
Puc_srno → CO_level
Puc_srno → HC_level
Puc_srno → SC_level
Registration_no → Puc_srno

Candidate key: Puc_srno, Registration_no

Key: Puc_srno

22) Vehicle_registration:

Registration_no → Permit_type
Registration_no → Permit_duedate
Registration_no → Registration_type
Registration_no → No_platecolour
Registration_no → Purchase_invoiceno
Registration_no → Manufacture_name
Registration_no → Vehicle_colour
Registration_no → Owner_id
Registration_no → Login_id

Candidate key: Registration_no, Login_id

Key: Registration_no

23) RC_book:

Registration_no \rightarrow Chassis_no

Chassis_no \rightarrow Engine_no

Engine_no \rightarrow Registration_date

Engine_no \rightarrow Validity

Engine_no \rightarrow Chassis_no

Engine_no \rightarrow Engine_no

Engine_no \rightarrow Owner_name

Engine_no \rightarrow Vehicle_type

Engine_no \rightarrow Fuel_type

Candidate key: Engine_no, Chassis_no, Registration_no

Key: Engine_no

24) Owner:

Owner_id \rightarrow Gov_idno

Owner_id \rightarrow Gov_idname

{Gov_idno, Gov_idname} \rightarrow Owner_id

Key: Owner_id

Candidate Key: Owner_id, {Gov_idno, Gov_idname}

- All the Relations are in BCNF.