

Functional dependency sets and normalisation proof

Database for PayEasy Wallet

29 April 2019

1 Relations and Functional Dependencies

1. **Person:** $person_id \rightarrow person_fname, person_lname, person_mobile, person_email, person_gender, person_dob, house_no, locality, city, state, role_id$

$person_mobile \rightarrow person_id$

2. **Role:** $role_id \rightarrow is_user, is_admin$

3. **User:** $user_id \rightarrow password, person_id, KYC_verf_status, aadhar_card_no, pan_no$

$person_id \rightarrow user_id$

4. **Admin_id:** $admin_id \rightarrow password, person_id$

$person_id \rightarrow admin_id$

5. **Telecom_company:** $comp_id \rightarrow company_name$

$comp_name \rightarrow company_id$

6. **recharge_plan:** $comp_id, plan_id \rightarrow plan_dec, plan_validity, plan_amount$

7. **checks:** $trans_id, admin_id \rightarrow admin_comment$

8. **complaint:** $comp_id \rightarrow comp_desc, comp_status, user_id, admin_id$

9. **payment:** $pay_id \rightarrow pay_type, amount, wallet_id, trans_id$

$trans_id \rightarrow pay_id$

10. **Transfer:** $transfer_id \rightarrow from_wallet, to_Wallet, trans_id, Amount$

$trans_id \rightarrow transfer_id$

11. **Wallet:** $wallet_id \rightarrow balance, user_id$

$user_id \rightarrow wallet_id$

12. **Transactions:** $trans_id \rightarrow trans_descrip, trans_timestamp, trans_status$

13. **recharge:** $recharge_id \rightarrow comp_id, plan_id, wallet_id, ph_no, trans_id$

$trans_id \rightarrow recharge_id$

2 Normalization and proof

- Normalization:
BCNF
- Proof:
For every FD $A \rightarrow B$ in the above FD set,
 - A is the superkey of the relation.

Hence it is in BCNF