

# ADVANCED DATABASE MANAGEMENT:

## PROJECT PHASE 1:

### PART 2:

1:

person	keys	checks	Data type
email	unique	Cannot be null, Must be in valid state of email	Varchar(100)
name		Cannot be null	Varchar(100)
Phone_number	unique	Should be 11 digits and should not be null	Varchar(15)
password		Should not to be null ,should be at least 8 digits	Varchar(255)
Person_id	Primary key	Should not be null	serial

cnic	unqiue	Should not be null	Varchar(100)
person_type		It cannot be null and can only be admin,merchant,user	Varchar(10)

2:

user	keys	checks	Data type
User_Person_id	Primary key,foreign key	Not null	int
Date_of_birth		Not null , should have atleast 18 year difference between current time and date	date
gender		Male or female , not null	Varchar(10)

3:

Admin	keys	checks	Data type
Admin_Person_id	Primary key,foreign key	Cannot be null	int

4:

merchant	keys	checks	Data type
Merchant_Person_id	Primary key ,foreign key	Not null	int

5:

wallet	keys	checks	Data type
Wallet_id	Primary key	Cannot be null	serial
Current_amount		Cannot be null , should not be negative	Decimal(10,2)

Wallet_account	unique	Cannot be null, should be 16 digits	Varchar(16)
Person_id	Foreign key	Cannot be null	int

6:

transaction	keys	checks	Data type
Sender_wallet_id	Foreign key	Cannot be null	int
Receiver_wallet_id	Foreign key	Cannot be null	int
Transaction_id	Primary key	Cannot be null	serial
Amount_sent		Cannot be null should not be negative	Decimal(10,2)
Amount_recieved		Cannot be null, should not be negative	Decimal(10,2)

Timestamp_sender		Cannot be null	timestamp
Timestamp_reciever		Cannot be null	timestamp

7:

Transaction_notification	keys	checks	Data type
Notification_id	Primary (composite)key,foreign key ,unique	Cannot be null	int
Transaction_id	Primary key (composite), Foreign key	Cannot be null	int

8:

notification	keys	checks	Data type
timestamp		Cannot be null	timestamp
Receiver_id		Cannot be null	Int

Notification_id	Primary key	Cannot be null	serial
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9:

Bill payment	keys	checks	Data type
Bill_payment_id	Primary key	Cannot be null	serial
wallet_id	Foreign key	Cannot be null	int
amount		Cannot be null,should not be negative	Decimal(10,2)
Consumer_account_no		Cannot be null,should be 16 digits	Varchar(16)

10:

revenue	keys	checks	Data type
Revenue_id	Primary key	Cannot be null	serial

month		Cannot be null	int
year		Cannot be null	int
amount		Cannot be null,must not be neagative	Decimal(10,2)
Admin_person_id	Foreign key	Cannot be null	int

11:

promotion	keys	checks	Data type
Merchant_person_id	Foreign key	Cannot be null	int
duration		Cannot be null	int
Promotion_id	Primary key	Cannot be null	serial
Promotion_cost		Cannot be null,cannot be neagitive	Decimal(10,2)
Promotional_advertisemen t		Cannot be null	text

Admin_person_id	Foreign key	Cannot be null	int
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12:

Rank_of_users	keys	checks	Data type
No_of_transaction		Cannot be negative	int
Rank_id	Foreign key	Cannot be null	int
Person_id	Primary key , Foreign key	Cannot be null	int

13:

rank	keys	checks	Data type
Rank_id	Primary key	Cannot be null	serial
Rank_name	unique	Cannot be null	Varchar(50)
Min_transaction		Cannot be null	int
max_transaction		Cannot be null	int

Min amount		Should be greater than zero and not null	decimal(10,2)
Max amount		Should not be negative and greater than zero	decimal(10,2)

14:

Debit cards	keys	checks	Data type
person_User_id	Foreign key	Cannot be null	Int
Card_number	Primary key	Cannot be null must be 16 number	Varchar(16)
cvv		Cannot be null must be 3 numbers	Varchar(3)
Registered_date		Cannot be null	date
Expiry_date		Cannot be null	date
Card fee		Cannot be null	decimal(10,2)

15:

Mobile recharge	keys	checks	Data type
Mobile_recharge_id	Primary key	Cannot be null	serial
amount		Cannot be null	Decimal(10,2)
Wallet_id	Foreign key	Cannot be null	int
Service id	Foreign key	Cannot be null	int
timestamp		Cannot be null	timestamp

16:

Telecom_Service	keys	checks	Data type
Service_name		Cannot be null	Varchar(50)
Service_id	Primary key	Cannot be null	serial

Company_account	unique	Cannot be null,ust be 16 digits	Varchar(16)
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#### ROLES DEFINATION:

Admin	It has full system <a href="#">access</a> . It can manage users,merchant,wallets,transactions,notifications and generate system reports
Merchant	It can manage shop information,promotions,view transactions related to their shop
Customer	Customer can view balance,make transactions,pay bills,recharge mobile and view notifications

#### Indexing:

Attribute	table
Person id	wallet(Btree indexing)
Sender_wallet_id+receiver_wallet_id	transaction(Btree indexing)