

Database Table Design

Tables Required For The Development Of AgroRental Hub

1.tbl_farmer

Attribute Name	Key Constraints	Data Type	Description
fid	Primary Key	Integer	Farmer ID (unique identifier)
name	Not Null	Varchar(100)	Name of the farmer
email	Unique, Not Null	Varchar(100)	Email address of the farmer
address	Not Null	Text	Address of the farmer
phone	Not Null	Varchar(20)	Phone number of the farmer
password	Not Null	Varchar(100)	Password for farmer's account
status	Not Null	Enum ('active', 'inactive')	Status of the farmer's account

Key Constraints:

- Primary Key: fid
- Unique Constraint: email
- Enum Constraint: status ('active', 'inactive')

2.tbl_supplier

Attribute Name	Key Constraints	Data Type	Description
sid	Primary Key	Integer	Supplier ID (unique identifier)
name	Not Null	Varchar(100)	Name of the supplier
email	Unique, Not Null	Varchar(100)	Email address of the supplier
address	Not Null	Text	Address of the supplier



phone	Not Null	Varchar(20)	Phone number of the supplier
password	Not Null	Varchar(100)	Password for supplier's account
status	Not Null	Enum ('active', 'inactive')	Status of the supplier's account

Key Constraints:

- Primary Key: sid
- Unique Constraint: email
- Enum Constraint: status ('active', 'inactive')

3.tbl_deliveryboy

Attribute Name	Key Constraints	Data Type	Description
did	Primary Key	Integer	Delivery Boy ID (unique identifier)
name	Not Null	Varchar(100)	Name of the delivery boy
email	Unique, Not Null	Varchar(100)	Email address of the delivery boy
address	Not Null	Text	Address of the delivery boy
phone	Not Null	Varchar(20)	Phone number of the delivery boy
password	Not Null	Varchar(100)	Password for delivery boy's account
status	Not Null	Enum ('active', 'inactive')	Status of the delivery boy's account

Key Constraints:

- Primary Key: did
- Unique Constraint: email
- Enum Constraint: status ('active', 'inactive')

4.tbl_admin

Attribute Name	Key Constraints	Data Type	Description
aid	Primary Key	Integer	Admin ID (unique identifier)
username	Unique, Not Null	Varchar(100)	Username for admin login
email	Unique, Not Null	Varchar(100)	Email address of the admin
password	Not Null	Varchar(100)	Password for admin's account

Key Constraints:

- Primary Key: aid
- Unique Constraint: username, email

5.tbl_product

Attribute Name	Key Constraints	Data Type	Description
pid	Primary Key	Integer	Product ID (unique identifier)
sid	Foreign Key	Integer	Supplier ID (references tbl_supplier.sid)
name	Not Null	Varchar(200)	Name of the product
description	Not Null	Text	Description of the product
price_per_day	Not Null	Decimal(10, 2)	Rental price per day
stock_quantity	Not Null	Integer	Available quantity in stock
status	Not Null	Enum ('available', 'rented', 'maintenance')	Status of the product

Key Constraints:

- Primary Key: pid
- Foreign Key: sid (references tbl_supplier.sid)
- Enum Constraint: status ('available', 'rented', 'maintenance')

6.tbl_rental

Attribute Name	Key Constraints	Data Type	Description
rid	Primary Key	Integer	Rental ID (unique identifier)
fid	Foreign Key	Integer	Farmer ID (references tbl_farmer.fid)
pid	Foreign Key	Integer	Product ID (references tbl_product.pid)
rental_start_date	Not Null	Date	Start date of rental period
rental_end_date	Not Null	Date	End date of rental period
deliveryboy_assigned	Foreign Key	Integer	Delivery Boy ID (references tbl_deliveryboy.did)
total_rental_cost	Not Null	Decimal(10, 2)	Total cost of the rental period
rental_status	Not Null	Enum ('pending', 'active', 'returned')	Status of the rental

Key Constraints:

- Primary Key: rid
- Foreign Key: fid (references tbl_farmer.fid), pid (references tbl_product.pid), deliveryboy_assigned (references tbl_deliveryboy.did)
- Enum Constraint: rental_status ('pending', 'active', 'returned')

7.tbl_transaction

Attribute Name	Key Constraints	Data Type	Description
tid	Primary Key	Integer	Transaction ID (unique identifier)
rid	Foreign Key	Integer	Rental ID (references tbl_rental.rid)
transaction_date	Not Null	Date	Date of the transaction
amount	Not Null	Decimal(10, 2)	Amount of the transaction

payment_status	Not Null	Enum ('pending', 'completed')	Status of the payment
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Key Constraints:

- Primary Key: tid
- Foreign Key: rid (references tbl_rental.rid)
- Enum Constraint: payment_status ('pending', 'completed')

8.tbl_defect

Attribute Name	Key Constraints	Data Type	Description
defect_id	Primary Key	Integer	Defect ID (unique identifier)
rid	Foreign Key	Integer	Rental ID (references tbl_rental.rid)
defect_description	Not Null	Text	Description of the defect
repair_cost	Not Null	Decimal(10, 2)	Cost incurred for repairing the defect
status	Not Null	Enum ('reported', 'repaired')	Status of the defect

Key Constraints:

- Primary Key: defect_id
- Foreign Key: rid (references tbl_rental.rid)
- Enum Constraint: status ('reported', 'repaired')

9.tbl_delivery

Attribute Name	Key Constraints	Data Type	Description
delivery_id	Primary Key	Integer	Delivery ID (unique identifier)
rid	Foreign Key	Integer	Rental ID (references tbl_rental.rid)

delivery_date	Not Null	Date	Date of delivery
return_date	Not Null	Date	Expected return date
delivery_status	Not Null	Enum ('pending', 'delivered', 'returned')	Status of delivery

Key Constraints:

- Primary Key: delivery_id
- Foreign Key: rid (references tbl_rental.rid)
- Enum Constraint: delivery_status ('pending', 'delivered', 'returned')

10.tbl_notification

Attribute Name	Key Constraints	Data Type	Description
notification_id	Primary Key	Integer	Notification ID (unique identifier)
recipient_id	Integer	Integer	ID of the recipient user (fid, sid, did, aid)
notification_type	Not Null	Enum ('order_update', 'payment_due', 'maintenance_alert')	Type of notification
message	Not Null	Text	Notification message
created_at	Not Null	Datetime	Timestamp of when the notification was created
read_status	Not Null	Enum ('unread', 'read')	Read status of the notification

Key Constraints:

- Primary Key: notification_id
- Foreign Key: recipient_id (references fid, sid, did, aid in respective tables)
- Enum Constraint: notification_type ('order_update', 'payment_due', 'maintenance_alert'), read_status ('unread', 'read')

11.tbl_worker

Attribute Name	Key Constraints	Data Type	Description
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wid	Primary Key	Integer	Worker ID (unique identifier)
sid	Foreign Key	Integer	Supplier ID (references tbl_supplier.sid)
name	Not Null	Varchar(100)	Name of the worker
job_title	Not Null	Varchar(100)	Title or role of the worker
phone	Not Null	Varchar(20)	Phone number of the worker
email	Unique, Not Null	Varchar(100)	Email address of the worker

Key Constraints:

- Primary Key: wid
- Foreign Key: sid (references tbl_supplier.sid)
- Unique Constraint: email

12.tbl_payment

Attribute Name	Key Constraints	Data Type	Description
payment_id	Primary Key	Integer	Payment ID (unique identifier)
tid	Foreign Key	Integer	Transaction ID (references tbl_transaction.tid)
amount	Not Null	Decimal(10, 2)	Amount of the payment
payment_date	Not Null	Date	Date of the payment
payment_method	Not Null	Varchar(50)	Payment method used (e.g., credit card, bank transfer)

Key Constraints:

- Primary Key: payment_id
- Foreign Key: tid (references tbl_transaction.tid)

13.tbl_inventory

Attribute Name	Key Constraints	Data Type	Description
inventory_id	Primary Key	Integer	Inventory ID (unique identifier)



pid	Foreign Key	Integer	Product ID (references tbl_product.pid)
quantity	Not Null	Integer	Quantity of the product in inventory
last_updated	Not Null	Datetime	Timestamp of last inventory update

Key Constraints:

- Primary Key: inventory_id
- Foreign Key: pid (references tbl_product.pid)

14.tbl_dispute

Attribute Name	Key Constraints	Data Type	Description
dispute_id	Primary Key	Integer	Dispute ID (unique identifier)
rid	Foreign Key	Integer	Rental ID (references tbl_rental.rid)
dispute_type	Not Null	Varchar(100)	Type or reason for the dispute
dispute_description	Not Null	Text	Description of the dispute
status	Not Null	Enum ('open', 'resolved')	Status of the dispute

Key Constraints:

- Primary Key: dispute_id
- Foreign Key: rid (references tbl_rental.rid)
- Enum Constraint: status ('open', 'resolved')

15.tbl_user_activity

Attribute Name	Key Constraints	Data Type	Description
activity_id	Primary Key	Integer	Activity ID (unique identifier)

user_id	Integer	Integer	ID of the user performing the activity (fid, sid, did, aid)
activity_type	Not Null	Enum ('login', 'logout', 'product_view', 'rental', 'payment', 'profile_update')	Type of user activity
activity_details	Text	Text	Details of the activity performed
activity_timestamp	Not Null	Datetime	Timestamp when the activity occurred

Key Constraints:

- Primary Key: activity_id
- Foreign Key: user_id (references fid, sid, did, aid in respective tables)
- Enum Constraint: activity_type ('login', 'logout', 'product_view', 'rental', 'payment', 'profile_update')

16.tbl_maintenance

Attribute Name	Key Constraints	Data Type	Description
maintenance_id	Primary Key	Integer	Maintenance ID (unique identifier)
pid	Foreign Key	Integer	Product ID (references tbl_product.pid)
issue_description	Not Null	Text	Description of the maintenance issue
repair_cost	Not Null	Decimal(10, 2)	Cost incurred for repairing the issue
maintenance_status	Not Null	Enum ('reported', 'in_progress', 'completed')	Status of the maintenance

Key Constraints:

- Primary Key: maintenance_id
- Foreign Key: pid (references tbl_product.pid)
- Enum Constraint: maintenance_status ('reported', 'in_progress', 'completed')

17.tbl_message

Attribute Name	Key Constraints	Data Type	Description
message_id	Primary Key	Integer	Message ID (unique identifier)
sender_id	Integer	Integer	ID of the sender (fid, sid, did, aid)
recipient_id	Integer	Integer	ID of the recipient (fid, sid, did, aid)
message_content	Text	Text	Content of the message
sent_at	Not Null	Datetime	Timestamp when the message was sent
read_status	Not Null	Enum ('unread', 'read')	Read status of the message

Key Constraints:

- Primary Key: message_id
- Foreign Key: sender_id, recipient_id (references fid, sid, did, aid in respective tables)
- Enum Constraint: read_status ('unread', 'read')