Bike-Rental Extended Data Dictionary (GROUP-C)

Table: Customers

Field Name	Data Type	Constraints	Description
customer_id	INT UNSIGNED	PK, AUTO_INCREMENT, NOT NULL	Unique customer identifier
national_id	VARCHAR(50)	UNIQUE, NULL	National ID (optional)
first_name	VARCHAR(100)	NOT NULL	Customer first name
last_name	VARCHAR(100)	NOT NULL	Customer last name
email	VARCHAR(255)	UNIQUE, NOT NULL	Customer email
phone	VARCHAR(30)	NOT NULL	Phone number
date_of_birth	DATE	NULL	Date of birth
registered_at	DATETIME	DEFAULT CURRENT_TIMESTAMP, NOT NULL	Registration timestamp
password_hash	VARCHAR(255)	NOT NULL	Secure password hash
password_reset_token	VARCHAR(255)	NULL	Reset token
status	ENUM	('active','suspended','deleted'), DEFAULT 'active'	Account status
preferred_payment_method	VARCHAR(50)	NULL	Default payment method
created_by	INT UNSIGNED	FK → staff.staff_id, NULL	Staff who created
updated_at	DATETIME	NULL	Last updated
deleted_at	DATETIME	NULL	Soft delete marker

Table: Staff

Field Name	Data Type	Constraints	Description
staff_id	INT UNSIGNED	PK, AUTO_INCREMENT, NOT NULL	Unique staff ID
national_id	VARCHAR(50)	UNIQUE, NULL	National ID
first_name	VARCHAR(100)	NOT NULL	First name
last_name	VARCHAR(100)	NOT NULL	Last name
email	VARCHAR(255)	UNIQUE, NOT NULL	Email
phone	VARCHAR(30)	NULL	Phone number
role	ENUM	('agent','manager','admin','mechanic'), DEFAULT 'agent'	Role
password_hash	VARCHAR(255)	NULL	Password hash
date_hired	DATE	NULL	Hiring date
location_id	INT UNSIGNED	FK → locations.location_id, NULL	Location assigned
created_at	DATETIME	DEFAULT CURRENT_TIMESTAMP, NOT NULL	Creation date
updated_at	DATETIME	NULL	Last update

Table: Locations

Field Name	Data Type	Constraints	Description
location_id	INT UNSIGNED	PK, AUTO_INCREMENT, NOT NULL	Location ID
location_name	VARCHAR(150)	NOT NULL	Branch name
address	VARCHAR(255)	NULL	Address
city	VARCHAR(100)	NULL	City
longitude	DECIMAL(10,7)	NULL	Longitude
latitude	DECIMAL(10,7)	NULL	Latitude
capacity	INT UNSIGNED	DEFAULT 0	Max bike capacity
created_at	DATETIME	DEFAULT CURRENT_TIMESTAMP, NOT NULL	Record creation

Table: Bike_Models

Field Name	Data Type	Constraints	Description
bike_model_id	INT UNSIGNED	PK, AUTO_INCREMENT, NOT NULL	Bike model ID
manufacturer	VARCHAR(100)	NULL	Manufacturer
model_name	VARCHAR(100)	NULL	Model name
bike_type	ENUM	('mountain','road','electric','hybrid','folding')	Bike type
default_rate_per_min	DECIMAL(8,2)	NOT NULL DEFAULT 0.00	Default rate

Table: Bikes

Field Name	Data Type	Constraints	Description
bike_id	INT UNSIGNED	PK, AUTO_INCREMENT, NOT NULL	Bike ID
bike_serial	VARCHAR(100)	UNIQUE, NOT NULL	Bike serial
bike_model_id	INT UNSIGNED	FK → bike_models.bike_model_id, NULL	Model reference
custom_model	VARCHAR(100)	NULL	Custom model name
current_status	ENUM	('available','rented','maintenance','reserved','retired','missing')	Status
rental_rate_per_min	DECIMAL(8,2)	NOT NULL	Rate per minute
current_location_id	INT UNSIGNED	FK → locations.location_id, NULL	Current location
last_maintenance_at	DATETIME	NULL	Last maintenance
km_or_mileage	DECIMAL(9,2)	NULL	Mileage
added_at	DATETIME	DEFAULT CURRENT_TIMESTAMP, NOT NULL	Date added

Table: Bike_Transfers

Field Name	Data Type	Constraints	Description
transfer_id	INT UNSIGNED	PK, AUTO_INCREMENT, NOT NULL	Transfer ID
bike_id	INT UNSIGNED	FK → bikes.bike_id, NOT NULL	Bike
from_location_id	INT UNSIGNED	FK → locations.location_id, NULL	From location
to_location_id	INT UNSIGNED	FK → locations.location_id, NOT NULL	To location
performed_by	INT UNSIGNED	FK → staff.staff_id, NULL	Performed by
transfer_date	DATETIME	DEFAULT CURRENT_TIMESTAMP, NOT NULL	Date
notes	TEXT	NULL	Notes

Table: Reservations

Field Name	Data Type	Constraints	Description
reservation_id	INT UNSIGNED	PK, AUTO_INCREMENT, NOT NULL	Reservation ID
customer_id	INT UNSIGNED	FK → customers.customer_id, NOT NULL	Customer
bike_id	INT UNSIGNED	FK → bikes.bike_id, NULL	Bike
location_id	INT UNSIGNED	FK → locations.location_id, NOT NULL	Location
start_datetime	DATETIME	NOT NULL	Start time
end_datetime	DATETIME	NULL	End time
status	ENUM	('booked','cancelled','expired','fulfilled')	Status
created_at	DATETIME	DEFAULT CURRENT_TIMESTAMP, NOT NULL	Created at

Table: Rentals

Field Name	Data Type	Constraints	Description
rental_id	INT UNSIGNED	PK, AUTO_INCREMENT, NOT NULL	Rental ID
rental_reference	VARCHAR(50)	UNIQUE, NOT NULL	Reference
customer_id	INT UNSIGNED	FK → customers.customer_id, NOT NULL	Customer
bike_id	INT UNSIGNED	FK → bikes.bike_id, NOT NULL	Bike
start_location_id	INT UNSIGNED	FK → locations.location_id, NOT NULL	Start location
end_location_id	INT UNSIGNED	FK → locations.location_id, NULL	End location
rental_start	DATETIME	NOT NULL	Start time
rental_end	DATETIME	NULL	End time
minutes_used	INT UNSIGNED	NULL	Duration
base_cost	DECIMAL(10,2)	DEFAULT 0.00, NOT NULL	Base cost
late_fee	DECIMAL(10,2)	DEFAULT 0.00, NOT NULL	Late fee
damage_fee	DECIMAL(10,2)	DEFAULT 0.00, NOT NULL	Damage fee
total_cost	DECIMAL(12,2)	DEFAULT 0.00, NOT NULL	Total
payment_status	ENUM	('pending','paid','failed','refunded')	Payment status
status	ENUM	('ongoing','completed','cancelled')	Rental status
created_at	DATETIME	DEFAULT CURRENT_TIMESTAMP, NOT NULL	Created at
completed_by	INT UNSIGNED	FK → staff.staff_id, NULL	Completed by

Table: Payments

Field Name	Data Type	Constraints	Description
payment_id	INT UNSIGNED	PK, AUTO_INCREMENT, NOT NULL	Payment ID
rental_id	INT UNSIGNED	FK → rentals.rental_id, NULL	Rental
customer_id	INT UNSIGNED	FK → customers.customer_id, NULL	Customer
payment_date	DATETIME	DEFAULT CURRENT_TIMESTAMP, NOT NULL	Date
amount	DECIMAL(12,2)	NOT NULL	Amount
currency	CHAR(3)	DEFAULT 'UGX', NOT NULL	Currency
method	ENUM	('card','mobile_money','cash','wallet')	Method
processor_transaction_id	VARCHAR(255)	UNIQUE, NULL	Processor ID
status	ENUM	('pending','completed','failed','refunded')	Status
receipt_url	VARCHAR(255)	NULL	Receipt

Table: Maintenance_Logs

Field Name	Data Type	Constraints	Description
maintenance_id	INT UNSIGNED	PK, AUTO_INCREMENT, NOT NULL	Maintenance ID
bike_id	INT UNSIGNED	FK → bikes.bike_id, NOT NULL	Bike
staff_id	INT UNSIGNED	FK → staff.staff_id, NULL	Staff
maintenance_date	DATETIME	DEFAULT CURRENT_TIMESTAMP, NOT NULL	Date
description	TEXT	NOT NULL	Description
cost	DECIMAL(10,2)	DEFAULT 0.00, NOT NULL	Cost
next_due_date	DATE	NULL	Next due date

Table: Damage_Reports

Field Name	Data Type	Constraints	Description
damage_id	INT UNSIGNED	PK, AUTO_INCREMENT, NOT NULL	Damage ID
rental_id	INT UNSIGNED	FK → rentals.rental_id, NULL	Rental
bike_id	INT UNSIGNED	FK → bikes.bike_id, NOT NULL	Bike
reported_by_customer_id	INT UNSIGNED	FK → customers.customer_id, NULL	Customer
reported_by_staff_id	INT UNSIGNED	FK → staff.staff_id, NULL	Staff
reported_at	DATETIME	DEFAULT CURRENT_TIMESTAMP, NOT NULL	Reported at
description	TEXT	NOT NULL	Description
estimated_repair_cost	DECIMAL(10,2)	NULL	Estimate
status	ENUM	('open','in_progress','resolved')	Status

Table: Penalties

Field Name	Data Type	Constraints	Description
penalty_id	INT UNSIGNED	PK, AUTO_INCREMENT, NOT NULL	Penalty ID
customer_id	INT UNSIGNED	FK → customers.customer_id, NOT NULL	Customer
rental_id	INT UNSIGNED	FK → rentals.rental_id, NULL	Rental
amount	DECIMAL(10,2)	NOT NULL	Amount
reason	VARCHAR(255)	NOT NULL	Reason
issued_by	INT UNSIGNED	FK → staff.staff_id, NULL	Staff
issued_at	DATETIME	DEFAULT CURRENT_TIMESTAMP, NOT NULL	Issued at
paid	BOOLEAN	DEFAULT FALSE, NOT NULL	Paid

Table: Audit_Logs

Field Name	Data Type	Constraints	Description
audit_id	BIGINT	PK, AUTO_INCREMENT, NOT NULL	Audit ID
entity	VARCHAR(50)	NOT NULL	Entity
entity_id	INT UNSIGNED	NOT NULL	Entity ID
action	VARCHAR(50)	NOT NULL	Action
changes	JSON	NULL	Changes
performed_by	INT UNSIGNED	FK → staff.staff_id OR customers.customer_id, NULL	Performed by
performed_at	DATETIME	DEFAULT CURRENT_TIMESTAMP, NOT NULL	Performed at