Bike-Rental Extended Data Dictionary

(GROUP-C)

Table: Customers

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| **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

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| **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

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| **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

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| **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 |

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| **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 |

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| **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 |

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| **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 |

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| **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 |

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| **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 |

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| **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 |

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| **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 |

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| **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 |

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| **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 |