



ERD/DB 설계과정

☰ 선택

업데이트 v4 updated 2025.01.22 13:09

변경사항 : API 연동규격서 모두 반영하여 ERD 생성

```
// Enums
Enum UserStatus {
    active
    inactive
    suspended
}

Enum VehicleStatus {
    active
    inactive
    maintenance
}

Enum RentStatus {
    reserved
    in_progress
    completed
    canceled
}

Enum MaintenanceStatus {
    pending
    in_progress
    completed
```

```

}

Enum AdminRole {
    master
    semi
}

Enum VideoType {
    module_installation
    autonomous_driving
}

Enum PaymentStatus {
    pending
    completed
    failed
    refunded
}

// Users & Authentication
Table users {
    userPK int [pk, increment]
    userId varchar [unique, not null]
    userPassword varchar [not null, note: 'encrypted']
    userEmail varchar [unique, not null]
    userName varchar [not null]
    userPhoneNum varchar [not null]
    userAddress varchar [not null]
    createdAt datetime [not null, default: `now()`]
    updatedAt datetime [not null]

    indexes {
        userId
        userEmail
        userPhoneNum
    }
}

```

```

Table admins {
  adminPK int [pk, increment]
  adminId varchar [unique, not null]
  adminPassword varchar [not null, note: 'encrypted']
  role AdminRole [not null]
  createdAt datetime [not null, default: `now()`]
  updatedAt datetime [not null]

```

```

  indexes {
    adminId
    role
  }
}

```

// Vehicles

```

Table vehicles {
  vehicleId int [pk, increment]
  vin varchar [unique, not null]
  vehicleNumber varchar [unique, not null]
  currentLocation varchar [not null]
  status VehicleStatus [not null, default: 'inactive']
  mileage decimal [not null, default: 0]
  lastMaintenanceAt datetime
  nextMaintenanceAt datetime
  createdAt datetime [not null, default: `now()`]
  updatedAt datetime [not null]

```

```

  indexes {
    vin
    vehicleNumber
    status
  }
}

```

```

Table vehicles_maintenance {
  maintenancId int [pk, increment]
  adminPK int [ref: > admins.adminPK]
  vehicleId int [ref: > vehicles.vehicleId]

```

```

issue varchar [not null]
maintenanceDate datetime [not null]
cost decimal [not null, note: "cost >= 0"]
status MaintenanceStatus [not null]
completedAt datetime
notes text
createdAt datetime [not null, default: `now()`]
updatedAt datetime [not null]

indexes {
  vehicleId
  status
  maintenanceDate
}
}

// Modules & Options
Table modules {
  moduleId int [pk, increment]
  moduleNfcTagId varchar [unique, not null]
  moduleType varchar [not null]
  moduleSize varchar [not null]
  moduleCost decimal [not null, note: "moduleCost >= 0"]
  status VehicleStatus [not null]
  lastMaintenanceAt datetime
  nextMaintenanceAt datetime
  currentLocation varchar [not null]
  createdAt datetime [not null, default: `now()`]
  updatedAt datetime [not null]

  indexes {
    moduleNfcTagId
    status
  }
}

Table options {
  optionId int [pk, increment]

```

```

optionType int [ref: > option_type.optionTypeId]
status VehicleStatus [not null]
createdAt datetime [not null, default: `now()`]
updatedAt datetime [not null]

indexes {
  status
}
}

Table option_type {
  optionTypeId int [pk, increment]
  optionName varchar [not null]
  optionSize varchar [not null]
  optionCost decimal [not null, note: "optionCost >= 0"]
  description text
  option_images varchar [not null]
  option_features varchar [not null]
  createdAt datetime [not null, default: `now()`]
  updatedAt datetime [not null]

  indexes {
    optionName
  }
}

```

```

Table module_sets {
  moduleSetId int [pk, increment]
  moduleSetName varchar [not null]
  description text
  module_sets_images varchar
  module_sets_features varchar
  basePrice decimal [not null, note: "basePrice >= 0"]
  createdAt datetime [not null, default: `now()`]
  updatedAt datetime [not null]

  indexes {

```

```

    moduleSetName
  }
}

Table module_set_options {
  moduleSetId int [ref: > module_sets.moduleSetId]
  optionId int [ref: > options.optionId]
  quantity int [not null, note: "quantity > 0"]

  indexes {
    (moduleSetId, optionId)
  }
}

// Maintenance
Table module_maintenance {
  maintenancelid int [pk, increment]
  adminPK int [ref: > admins.adminPK]
  moduleId int [ref: > modules.moduleId]
  issue varchar [not null]
  maintenanceDate datetime [not null]
  cost decimal [not null, note: "cost >= 0"]
  status MaintenanceStatus [not null]
  completedAt datetime
  notes text
  createdAt datetime [not null, default: `now()`]
  updatedAt datetime [not null]

  indexes {
    moduleId
    status
    maintenanceDate
  }
}

Table option_maintenance {
  maintenancelid int [pk, increment]
  adminPK int [ref: > admins.adminPK]

```

```

optionId int [ref: > options.optionId]
issue varchar [not null]
maintenanceDate datetime [not null]
cost decimal [not null, note: "cost >= 0"]
status MaintenanceStatus [not null]
completedAt datetime
notes text
createdAt datetime [not null, default: `now()`]
updatedAt datetime [not null]

indexes {
  optionId
  status
  maintenanceDate
}
}

// Rental & Usage
Table rent_history {
  rentId int [pk, increment]
  userPK int [ref: > users.userPK]
  departureLocation varchar [not null]
  arrivalLocation varchar [not null]
  rentStatus RentStatus [not null]
  startTime datetime [not null]
  endTime datetime
  baseCost decimal [not null, note: "baseCost >= 0"]
  additionalCost decimal [not null, default: 0, note: "additionalCost >= 0"]
  totalDistance decimal [not null, default: 0, note: "totalDistance >= 0"]
  statusUpdatedAt datetime [not null]
  createdAt datetime [not null, default: `now()`]

  indexes {
    userPK
    rentStatus
    startTime
    endTime
  }
}

```

```

}

// Payment
Table payments {
  paymentId int [pk, increment]
  rentId int [ref: > rent_history.rentId]
  amount decimal [not null, note: "amount > 0"]
  status PaymentStatus [not null]
  paymentMethod varchar [not null]
  paymentDate datetime
  refundAmount decimal [note: "refundAmount >= 0"]
  refundDate datetime
  createdAt datetime [not null, default: `now()`]
  updatedAt datetime [not null]

  indexes {
    rentId
    status
    paymentDate
  }
}

// Usage History
Table vehicles_usage_history {
  vehicleUsageId int [pk, increment]
  vehicleId int [ref: > vehicles.vehicleId]
  rentId int [ref: > rent_history.rentId]
  startLocation varchar [not null]
  endLocation varchar [not null]
  startTime datetime [not null]
  endTime datetime
  status RentStatus [not null]
  mileage decimal [not null, note: "mileage >= 0"]
  createdAt datetime [not null, default: `now()`]

  indexes {
    vehicleId
    rentId
  }
}

```



```

    status
    startTime
    endTime
  }
}

```

```

Table module_usage_history {
  moduleUsageId int [pk, increment]
  moduleId int [ref: > modules.moduleId]
  rentId int [ref: > rent_history.rentId]
  startTime datetime [not null]
  endTime datetime
  status RentStatus [not null]
  createdAt datetime [not null, default: `now()`]

```

```

  indexes {
    moduleId
    rentId
    status
    startTime
    endTime
  }
}

```

```

Table option_usage_history {
  optionUsageId int [pk, increment]
  optionId int [ref: > options.optionId]
  rentId int [ref: > rent_history.rentId]
  quantity int [not null, note: "quantity > 0"]
  startTime datetime [not null]
  endTime datetime
  status RentStatus [not null]
  createdAt datetime [not null, default: `now()`]

```

```

  indexes {
    optionId
    rentId
    status

```

```

    startTime
    endTime
  }
}

// Video Storage
Table video_storage {
  videoId int [pk, increment]
  rentId int [ref: > rent_history.rentId]
  videoType VideoType [not null]
  videoUrl varchar [not null]
  duration int [not null, note: "duration > 0"]
  size int [not null, note: "size > 0"]
  recordedAt datetime [not null]
  createdAt datetime [not null, default: `now()`]

  indexes {
    rentId
    videoType
    recordedAt
  }
}

```