

Database Model Documentation

Link to schema: <https://app.quickdatabasediagrams.com/#/d/fWEwXP>

DB schema diagram for Moby Bikes - MySQL

Rentals

Field	Description	Type	Default	Other
_id		int		PK, IDENTITY
Date		datetime		FK, UNIQUE
BikeID	Unique bike ID used for rent bike	int		FK, UNIQUE
BatteryStart	int signed Battery status when rental started	int		NULLABLE
BatteryEnd	Battery status when rental finished	int		NULLABLE
Duration	Rental Duration = LastGPSTime - LastRentalStart	bigint		NULLABLE

Rentals_Coordinates

Rentals coordinates

Field	Description	Type	Default	Other
_id		int		PK, IDENTITY
Date		datetime		FK, UNIQUE
BikeID	Unique bike ID used for rent bike	int		FK, UNIQUE
Latitude	Bike coordinates if bike is locked out of station	decimal(11,7)		NULLABLE
Longitude	Bike coordinates if bike is locked out of station	decimal(11,7)		NULLABLE

Weather

Field	Description	Type	Default	Other
_id		int		PK, IDENTITY
Date		datetime		
TimeOfDay	Morning (from 7am to noon) Afternoon (from midday to 6pm) Evening (from 6pm to 10pm) Night (from 10pm to 5am)	ENUM(Morning,Afternoon,Evening,Night)		
Temperature	in Celsius	double		
WindSpeed	in Knots (kt)	double		

Field	Description	Type	Default	Other
Humidity	Relative humidity (%)	int		
Rain	in millimetres (mm)	double		
RainLevel	no rain = 0 drizzle - 0.1~0.3 light rain - 0.3~0.5 moderate rain - 0.5~4 heavy rain - >4	ENUM(no rain,drizzle,ligh rain,moderate rain,heavy rain)		

Day_Info

Date and time features

Field	Description	Type	Default	Other
_id		int		PK, IDENTITY
Date		DATE		
DayOfWeek	Monday = 0 ~ Sunday = 6	ENUM(0,1,2,3,4,5,6)		
Holiday	Irish National Bank Holidays	boolean		
WorkingDay	Monday to Friday AND not Bank Holiday	boolean		
Season	Spring Summer Autumn Winter	ENUM(Spring,!)		

rawRentals

Table with all rentals before processing

Field	Description	Type	Default	Other
_id		int		PK, IDENTITY
LastRentalStart	Last time bike was rented	datetime		UNIQUE
BikeID	Use for rent bike	int		UNIQUE
Battery	Bike max distance in km	int		NULLABLE
LastGPSTime	Last time bike connected with GPS	datetime		
Latitude	Bike coordinates if bike is locked out of station	decimal(11,7)		NULLABLE
Longitude	Bike coordinates if bike is locked out of station	decimal(11,7)		NULLABLE

ML_Tracker

Table with all rentals before processing

Field	Description	Type	Default	Other
_id		int		PK, IDENTITY
Date	Last time bike was rented	datetime		PK

Field	Description	Type	Default	Other
Actual_Demand	Last time bike connected with GPS	int		
Predicted_Demand	Bike coordinates if bike is locked out of station	int		NULLABLE

Log_Rentals

Table Log events to track processing errors

Field	Description	Type	Default	Other
_id		int		PK, IDENTITY
Date		datetime		
Processed	Total Rentals processed	int		NULLABLE
Errors	Number of Rentals failed to be processed	int		NULLABLE

Log_Weather

Table Log events to track processing errors

Field	Description	Type	Default	Other
_id		int		PK, IDENTITY
Date		datetime		
Processed	Total Rentals processed	int		NULLABLE
Errors	Number of Rentals failed to be processed	int		NULLABLE