

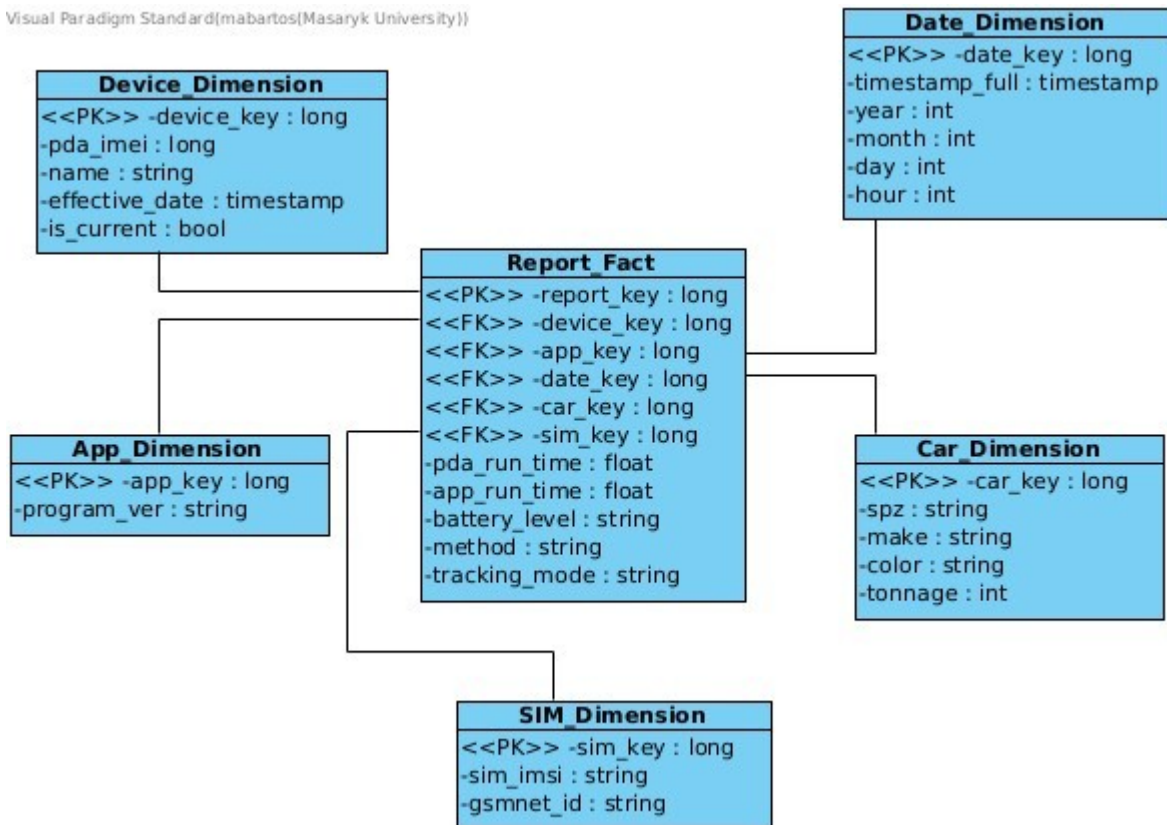
# Home Assignment 1 - xbartos5

## **Global Number of unique values for attributes:**

SIM IMSI - sim\_imsi 1048,  
PDA IMEI - pda\_imei 1092,  
Device model - device 194,  
GSMNET - gsmnet\_id 103,  
Transport method - method 2,  
Program version - program\_ver 26,  
Car key - car\_key 986.

## **Unique values – September-October 2020**

SIM IMSI - sim\_imsi 706,  
PDA IMEI - pda\_imei 707,  
Device model - device 137,  
GSMNET - gsmnet\_id 80,  
Transport method - method 2,  
Program version - program\_ver 17,  
Car key - car\_key 986.



### Device Dimension

- device\_key – primary key for Device dimension
- pda\_imei - unique ID of physical device, may not be available
- name - manufacture's code name of the model
- effective\_date – creation date for storing history
- is\_current – flag for determining most recent version of device

### App Dimension

- app\_key – primary key for Application dimension

### Date Dimension

- date\_key – primary key for Date dimension
- timestamp\_full – stored full timestamp
- year – year of the record
- month – month of the record
- day – day of the record
- hour – hour of the record

### Car Dimension

- car\_key – primary key for Car dimension
- spz – SPZ of the car
- make
- color – Color of the car
- tonnage – maximum allowed tonnage

### SIM Dimension

- sim\_key – primary key for SIM dimension
- sim\_imsi - number of SIM card, can also be a random string
- gsmnet\_id - MCC of GSM operator

I created 5 dimension tables and 1 fact table for this project in order to manage the system properly.

The dimension table Device Dimension is useful for storing information about device included in a car, where are all necessary information and additional attributes for providing history for the dimension. For the dimension, I used SCD of type 3, where are added a few parameters for that. Especially it's Effective date and flag if is the record current.

In the dimension table App Dimension is stored version of program and it's ready for another extension. The SCD is 1, where the version is always overwritten.

In the dimension Date dimension is stored date information about the reports, where the provided timestamp is converted to specific attributes, as year, month, day and hour. It's really useful for filtering and aggregating results for some period of time. All attributes have SCD type 0, where it's not possible to change it. It's only possible to create new record with new date.

The Car dimension is useful as wrapper for original dimension table provided by xdohtml. I think it's better to get our own records and have chance to extend it.

The SIM dimension stores information about the SIM itself and GSMNET id.

The fact table Report stores all necessary information about provided dimensions and also stores some attributes which is *pda\_run\_time*, *app\_run\_time*, *battery\_level*, *method* and *tracking\_mode*.