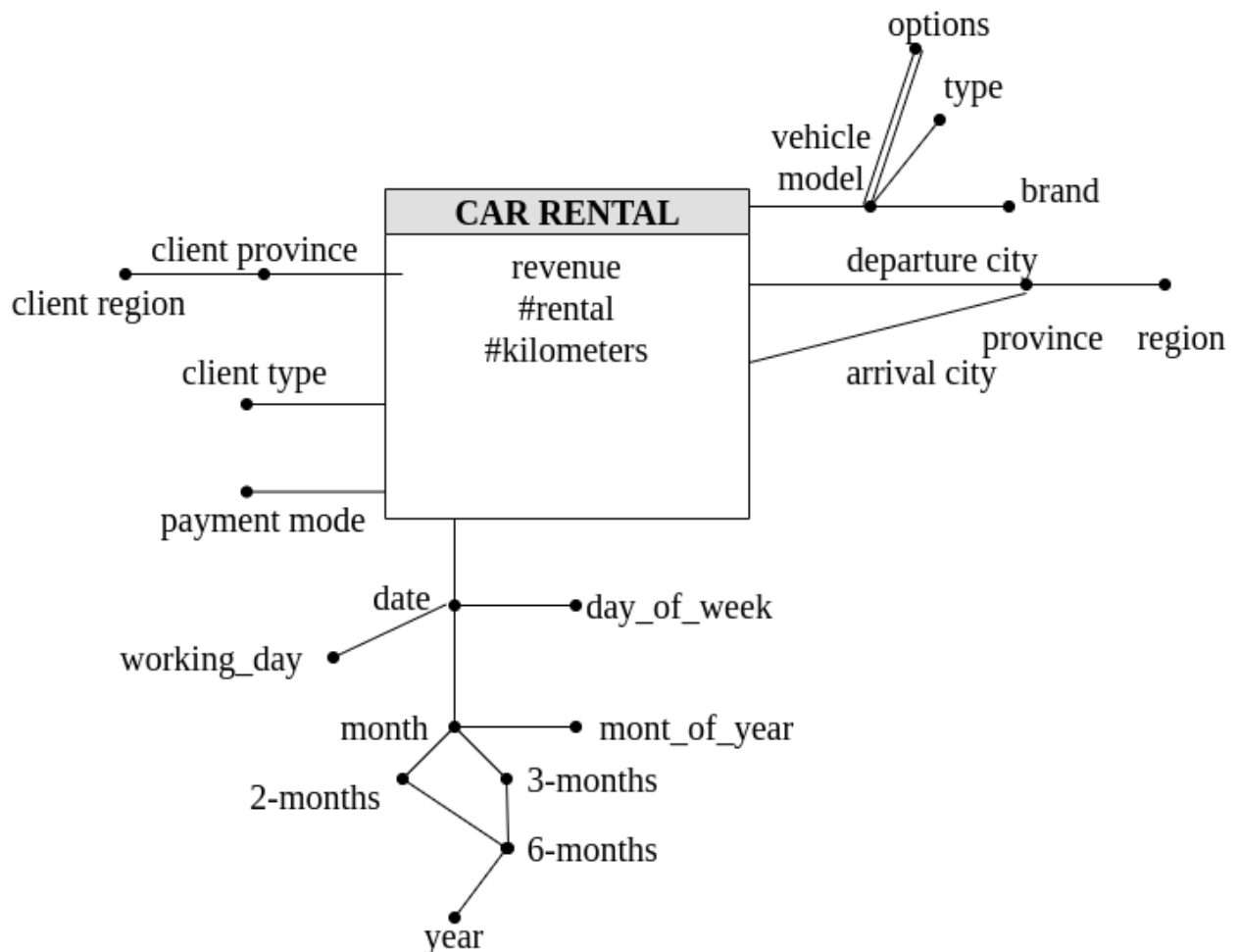# Data Warehousing

Politecnico di Torino

Vehicle rental

Conceptual design

Logical design

Primary keys are **underlined**.

CarRental (**ArrId, DepId, VId, CId, RTId, paymentMode**, #rental, #kilometers, revenue)

LOCATION (**LId**, city, province, region)
VEHICLE (**VId**, model, type, brand)
OPTIONS (**OId**, name)
VEHICLEOPTIONS (**VId**, **OId**)
RENTALTIME (**RTId**, date, month, monthOfYear, 2m, 3m, 6m, year, dayOfWeek, workingDay)
CLIENTPROFILE (**CId**, clientType, clientProvince, clientRegion)

Queries

Query A

Consider the rentals payed with credit card. Separately for each month, client type, province of the client's domicile, analyze: the average number of kilometers for rental, the cumulative number of kilometers from the beginning of the year, the average daily kilometers.


```
SELECT
     clienttype, clientprovince, month, year,
          sum(#kilometers)/sum(#rentals),
          sum(sum(#kilometers) over (partition by clienttype,
clientprovince, year
                              order by month
                              rows unbounded preceding)
      sum(#kilometers)/count(distinct date)
FROM
     carrental cr, rentaltime rt, clientprofile cp
WHERE
     cr.rtid = rt.rtid and cr.cid = cp.cid
     and paymentmode='credit card'
GROUP BY
     clienttype, clientprovince, month, year
```

Query B

Consider the rentals of "truck" vehicle type. Separately for each rental start month and for each departure province, analyze: the average revenue per kilometer, the percentage of revenue over the total revenue of the year, the percentage of revenue over the total revenue for the corresponding departure region

```
SELECT
     month, year, d.province, d.region,
     sum(revenue)/sum(#kilometers),
     100*sum(revenue)/sum(sum(revenue)) over (partition by year,
     d.province) 100*sum(revenue)/sum(sum(revenue)) over (partition by
     month, d.region)
FROM
     carrental cr, rentaltime rt, location d, vehicle v
WHERE
     cr.rtid = rt.rtid and cr.arrlid = d.lid and cr.vid = v.vid
     and v.type='truck'
GROUP BY
     month, year, d.province, d.region
```