1

There will be a lot of joins needed in order to perform these operations, which will in turn take a lot of time to perform on such large data sets.

2

location: city -> country -> continent -> all
time: morning -> afternoon -> evening -> night -> day -> week -> month -> year -> decade -> all
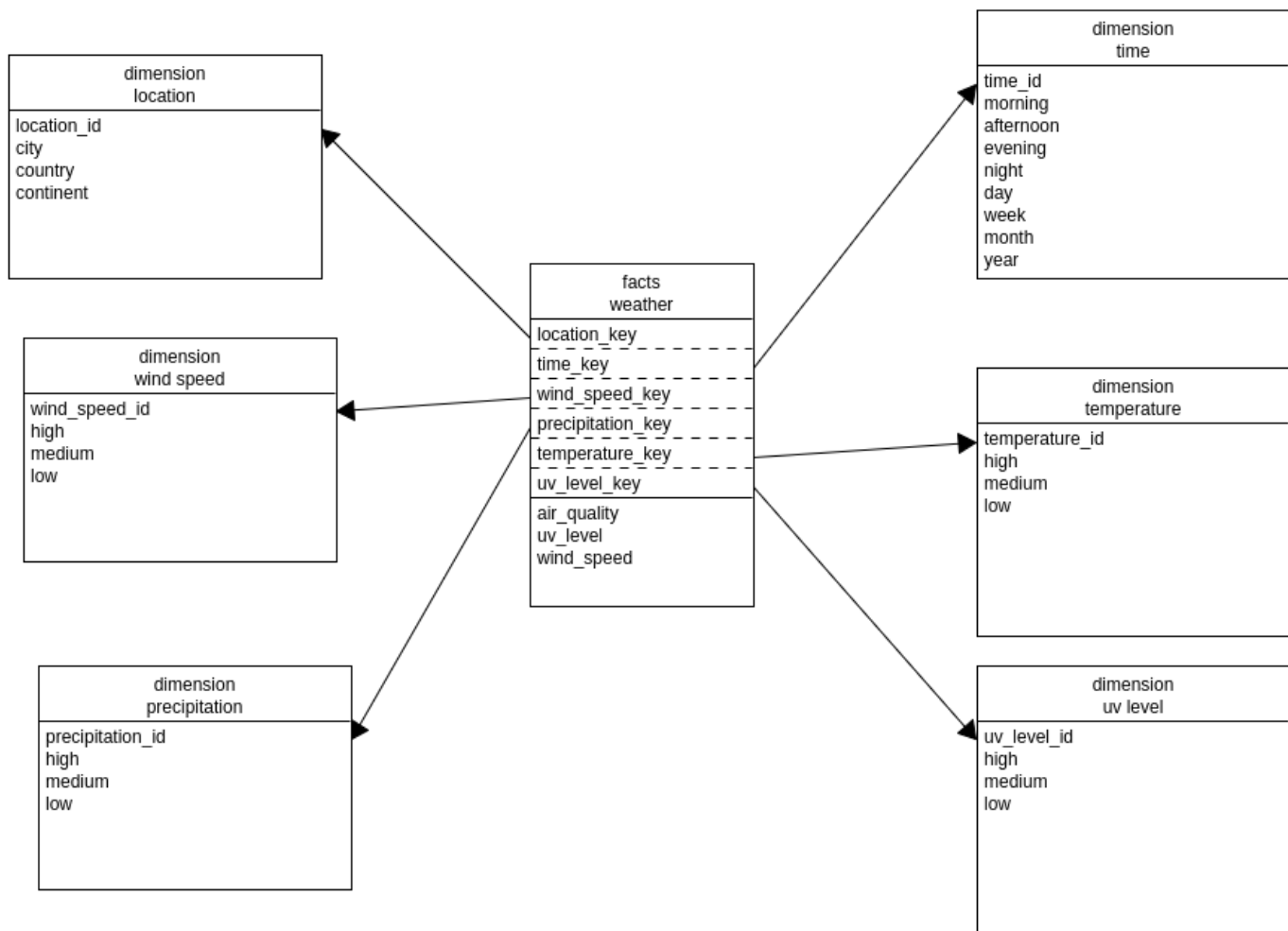wind speed: high -> medium -> low -> all
precipitation: high -> medium -> low -> all
air quality: good -> medium -> bad -> all
temperature: high -> medium -> low -> all
uv level: high -> medium -> low -> all

3

dimension location
location_id
city
country
continent

dimension wind speed
wind_speed_id
high
medium
low

dimension precipitation
precipitation_id
high
medium
low

facts weather
location_key
time_key
wind_speed_key
precipitation_key
temperature_key
uv_level_key
air_quality
uv_level
wind_speed

dimension time
time_id
morning
afternoon
evening
night
day
week
month
year

dimension temperature
temperature_id
high
medium
low

dimension uv level
uv_level_id
high
medium
low

4

6 cuboids, as there are 6 tables.

5

Roll Up time: day -> decade

Roll up location: city -> continent

dice: continent = "Europe"

slice: wind speed = all

slice: precipitation = all

slice: air quality = all

slice: temperature = all

slice: uv level = all