Northeastern University

Milestone 3

IE 7374 Data Warehousing and Business Intelligence

Spring 2024

Team Member's List

Meet Vasani

Mihir Kakadiya

Data Warehouse Model

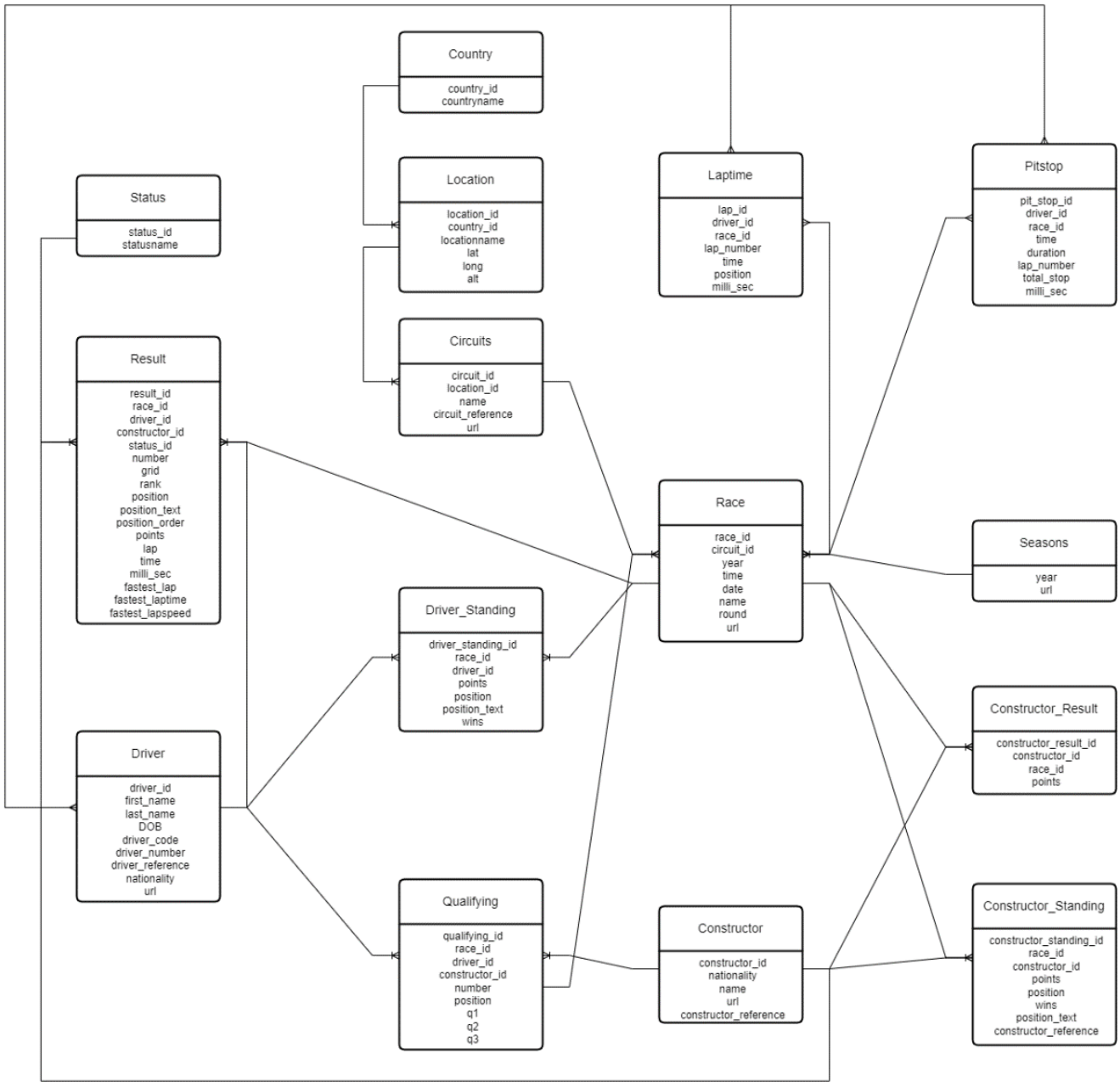

Fig 1. Conceptual Model

Possible Hierarchies:

1. Country → Location → Circuits
2. Driver → Driver Standing
3. Constructor → Constructor Standing

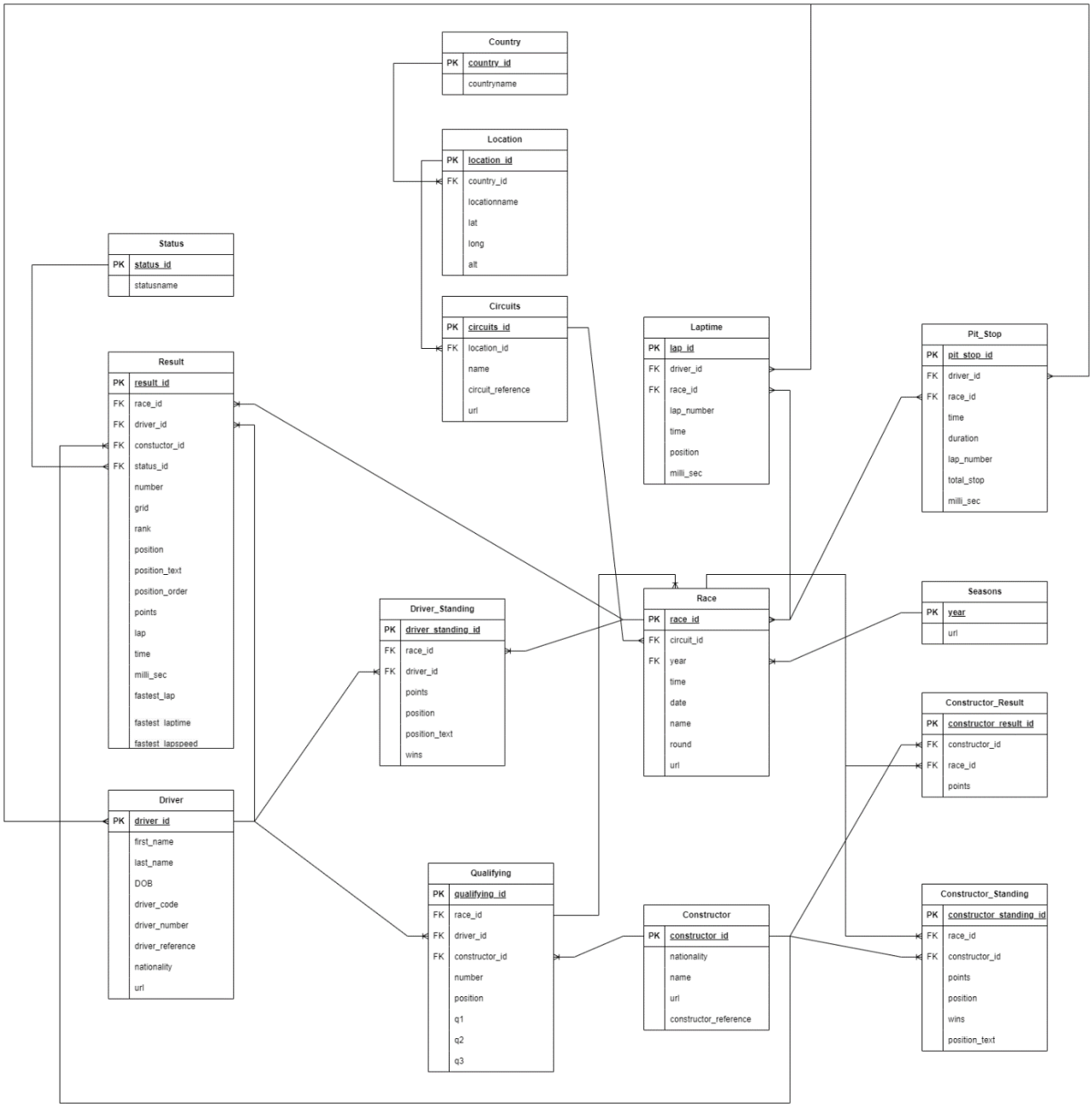

Fig 2. Logical Model

OLAP OPERATIONS FOR ANALYSIS

1. Select avg number of total stops taken by driver whose first name and last name is Nico Rosberg in year 2008.

   OUTPUT 1 ← DICE (F1, driver.first_name = 'Nico AND driver.last_name = 'Rosberg' AND race.year = 2008)

   OUTPUT ← ROLLUP * (OUTPUT 1, F1 → F1, AVG (total_stop) AS avg_stops)

2. Total number of Constructor who took part in year 2009 at Germany.

   OUTPUT 2 ← DICE (F1, race.year = 2009 AND circuit.country = 'Germany')

   OUTPUT ← ROLLUP * (OUTPUT 2, F1 → F1, COUNT (constructor.id) AS total_constructor)

3. SELECT drivers who qualified in year 2009 at Italian Grand Prix.

   OUTPUT ← DICE (F1, race.year = 2009 AND circuit.name = "Italian Grand Prix")

4. SELECT and sort the ranks of drivers in Ascending order for the race played at Turkish Grand Prix in year 2008.

   OUTPUT 4 ← DICE (F1, race.year = 2008 AND race.name = 'Turkish Grand Prix')

   OUTPUT ← SORT (OUTPUT 4, Result, Rank [ASC])

5. Provide the minimum fastest lap speed for the races played in Malaysia.

   OUTPUT 5 ← DICE (F1, circuit.country = 'Malaysia')

   OUTPUT ← ROLLUP* (OUTPUT 5, F1 → F1, MIN (fastest_lap) as fastest_lap)

6. Find out total race having race name Bahrain Grand Prix

   OUTPUT 6 ← SLICE (F1, Race, race.name = 'Bahrain Grand Prix')

   OUTPUT ← ROLLUP* (OUTPUT 6, Race → Race, COUNT (race_id))

7. Select the first qualifying driver in race Australian Grand Prix

   OUTPUT 7 ← DICE (F1, race.name = ‘Australian Grand Prix’)
   OUTPUT ← ROLLUP* (OUTPUT 7, Qualifying → Qualifying, MIN(q1) AS first_qualifier)