**Script Documentation: Vitals for the First 24 Hours**

* **Overview**: This SQL script pivots and calculates key vital signs (e.g., heart rate, blood pressure, respiration rate, and temperature) for the first 24 hours of an ICU stay. It summarizes minimum, maximum, and average values for each vital sign within that period.
* **Key References**: Extracts vital signs from the chartevents table based on specific itemid codes that correspond to different types of vitals.
* **Logic Summary**:
  + Vital signs are recorded using itemid codes in the chartevents table.
  + A window of the first 24 hours from the ICU admission (intime) is used to select relevant data points.
  + The vital signs are then pivoted to calculate their minimum, maximum, and average values.
* **Process Steps**:
  + **Data Selection**: Join icustays and chartevents on icustay\_id and filter records within the first 24 hours.
  + **Vital Sign Identification**: Assign a vitalid based on the itemid corresponding to the vital sign. Values outside normal ranges are excluded.
  + **Conversion**: For temperature in Fahrenheit, convert to Celsius.
  + **Pivoting and Aggregation**: Use CASE statements to pivot the vital signs and compute the min, max, and average for each.
  + **Grouping and Sorting**: Group results by subject\_id, hadm\_id, and icustay\_id and order them for final output.
* **Output**:
  + A table named vitals\_first\_day is created, containing:
    - subject\_id, hadm\_id, icustay\_id
    - Minimum, maximum, and average values for heart rate, systolic and diastolic blood pressure, mean arterial pressure, respiration rate, temperature, SpO2, and glucose.

**Example Query**:  
sql  
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SELECT \* FROM vitals\_first\_day WHERE icustay\_id = 200001;

* **Important Notes**:
  + Ensure that the chartevents table has accurate timestamps.
  + Vital signs are limited to those with reasonable values to avoid outliers.
* **Conclusion**: This script is useful for analyzing patient vitals over the crucial first 24-hour period, providing a snapshot that can be used for further analysis or as a feature in predictive models.

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