**Script Documentation: Detailed Information on ICUSTAY\_IDs**

* **Overview**This SQL script provides detailed information regarding patient ICU stays by extracting data from the admissions, patients, and icustays tables. The output includes demographic and administrative details such as age, length of stay, sequence of stays, and expiry flags. This comprehensive dataset aids in analyzing patient characteristics and outcomes during ICU admissions.
* **Key References**MIMIC-III Clinical Database, version 1.3.
* **Logic Summary**The script aggregates various patient and hospital-level factors, including:
  + **Patient Information**: Extracts basic demographics such as gender and date of death.
  + **Hospital Information**: Calculates length of stay, admission age, and groups ethnicity into broader categories.
  + **ICU Information**: Computes ICU length of stay and identifies the first ICU stay for each hospitalization.
* **Process Steps**
  + **Patient Level Factors**:
    - Retrieves subject\_id, hadm\_id, and icustay\_id from the icustays table.
    - Joins with the patients table to obtain gender and date of death.
  + **Hospital Level Factors**:
    - Joins with the admissions table to gather admission times, discharge times, and calculates the length of stay in the hospital.
    - Computes the patient’s age at admission and groups ethnicity into predefined categories.
  + **ICU Level Factors**:
    - Extracts ICU admission and discharge times and calculates the length of stay in the ICU.
    - Uses DENSE\_RANK to establish the sequence of hospitalizations and ICU stays, marking the first stay for both.
  + **Final Output**:
    - Compiles all the data into a structured table, ordered by subject\_id, admittime, and intime.
* **Output**The script generates a new table, icustay\_detail, containing the following columns:
  + **subject\_id**: Unique identifier for each patient.
  + **hadm\_id**: Hospital admission identifier.
  + **icustay\_id**: ICU stay identifier.
  + **gender**: Gender of the patient.
  + **dod**: Date of death.
  + **admittime**: Admission time to the hospital.
  + **dischtime**: Discharge time from the hospital.
  + **los\_hospital**: Length of stay in the hospital (in days).
  + **admission\_age**: Age at the time of admission (in years).
  + **ethnicity**: Patient’s ethnicity.
  + **ethnicity\_grouped**: Grouped ethnicity category (e.g., white, black, hispanic).
  + **hospital\_expire\_flag**: Indicates if the patient expired during the hospital stay.
  + **hospstay\_seq**: Sequence number of the hospital stay for the patient.
  + **first\_hosp\_stay**: Boolean indicating if this is the first hospital stay.
  + **intime**: ICU admission time.
  + **outtime**: ICU discharge time.
  + **los\_icu**: Length of stay in the ICU (in days).
  + **icustay\_seq**: Sequence number of the ICU stay for the hospitalization.
  + **first\_icu\_stay**: Boolean indicating if this is the first ICU stay for the current hospitalization.

**Example Query**To retrieve detailed information for a specific ICU stay:  
sql  
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SELECT \*

FROM icustay\_detail

WHERE icustay\_id = 12345;

* **Important Notes**
  + The script filters for records with chart events data, ensuring only relevant admissions are included.
  + The ethnicity grouping is based on predefined categories to standardize demographic analysis.
* **Conclusion**This script compiles essential details about ICU stays, enabling comprehensive analyses of patient demographics and hospitalizations. It facilitates clinical research by providing a structured dataset for exploring patient outcomes and healthcare patterns.