**Script Documentation: KDIGO Creatinine Calculation**

* **Overview**: This SQL script extracts creatinine values from laboratory events related to a patient's ICU stay and calculates the lowest creatinine values in the previous 48 hours and 7 days. It creates a new table named kdigo\_creatinine for further analysis of kidney function in critically ill patients.
* **Key References**: None specified.
* **Logic Summary**:
  + The script begins by selecting creatinine values (valuenum) from the labevents table, filtering based on specific conditions related to ICU stay times and the timeframe for creatinine measurement.
  + It calculates the minimum creatinine values from the past 48 hours and past 7 days for each recorded value, providing insights into renal function fluctuations over time.
* **Process Steps**:
  + **CTE cr**:
    - Extracts ICU stay IDs, times, and creatinine values for patients within a specified timeframe (7 days around the ICU stay).
  + **Join for 48-Hour Values**:
    - Left joins the cr CTE with itself to find all creatinine values within the last 48 hours prior to each measurement.
  + **Join for 7-Day Values**:
    - Left joins the cr CTE with itself again to find all creatinine values within the last 7 days prior to each measurement.
  + **Aggregation**:
    - Groups the results by ICU stay ID and chart time, selecting the minimum creatinine values for both the past 48 hours and 7 days.
* **Output**:  
  The script generates a new table, kdigo\_creatinine, with the following fields:
  + icustay\_id: Unique identifier for the ICU stay.
  + charttime: The time of the creatinine measurement.
  + creat: The creatinine value at charttime.
  + creat\_low\_past\_48hr: Minimum creatinine value in the past 48 hours.
  + creat\_low\_past\_7day: Minimum creatinine value in the past 7 days.

**Example Query**:  
To retrieve all creatinine values for a specific ICU stay:  
sql  
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SELECT \* FROM kdigo\_creatinine WHERE icustay\_id = [specific\_icustay\_id];

* **Important Notes**:
  + The script is automatically generated; direct edits should be avoided to maintain integrity.
  + The logic is designed to handle scenarios where multiple measurements may exist for the same patient within the defined timeframe.
* **Conclusion**:  
  This script automates the extraction and calculation of creatinine values in critically ill patients, aiding in the assessment of renal function and potential kidney injury in an ICU setting.