

Approach used :

1. In this program we will be calculating the no. of sessions at user level ie. no of session he has played, no of valid sessions, average session time of all the sessions (Valid sessions only).
2. We will be saving all the events of each user under a dictionary where the key will be "ai5" (a user's unique identifier) and its value will be a list of all the events of that user.
3. Rules used for calculating a session:
 - a. A session will start with a GGSTART event
 - b. A session will end with a GGSTOP event.
 - c. If there is a time difference of more than 30 secs between a GGSTOP and GGSTART, they are considered to be different sessions else it will be considered under a single session.
 - d. There can be multiple GGSTART and GGSTOP calls in a single session.
 - e. If a session is more than 60 seconds long, it is classified as a valid session.
 - f. If a session is less than 1 second, it should be ignored.
 - g. In case of multiple GGSTART and GGSTOP calls, the exact time of the session should be taken for establishing session validity (not the difference between the first GGSTART and the last GGSTOP call).
4. To calculate a user's Gaming session, we will start looking his first "ggstart" event from his event's instances.
5. Find the time difference between user's current event and user's previous event, if the difference is less than 30 seconds then this event will be included in current session.
6. If the difference is greater than 30 seconds then the difference between last start and end event is calculated based on that further calculations are done.
7. Sessions with time ≤ 1 will be ignored and sessions with session time > 1 sec will be accounted for total sessions. ie. total sessions for a user will be all the sessions with session time > 1 sec.
8. Total Valid session of a user will be the count of all the sessions with session time > 60 seconds.
9. Average session time for a user will be its total session time (only valid session) upon total number of session (only valid sessions).
$$\text{Average session time} = \frac{\text{Total session time (valid sessions only)}}{\text{No. of valid sessions}}$$