

Mapping Sleep records to Work Shift records for Sleep Prediction

In order to predict a user's sleep minutes accurately, we need to combine two separate datasets: one containing the user's sleep data and the other holding their work shift data. The goal is to map the sleep records to the corresponding work shifts, as shifts play a crucial role in determining sleep patterns.

To successfully map sleep records to shift records, we considered several scenarios based on the temporal relationship between sleep sessions and work shifts:

i We are currently only considering **Ideal cases** for sleep minutes prediction

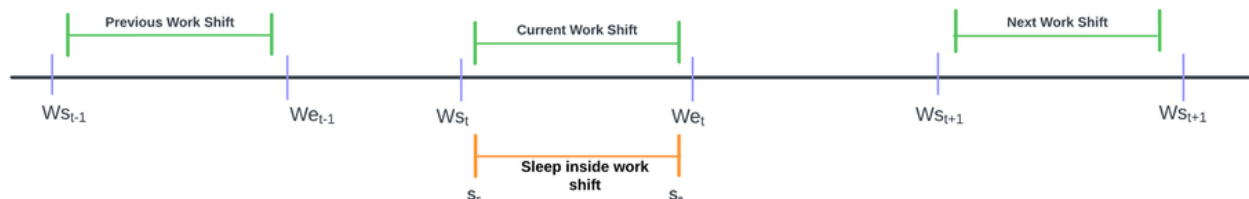
Matching Scenarios

1. **Ideal** - Where sleep is after the current work end and before the next work start

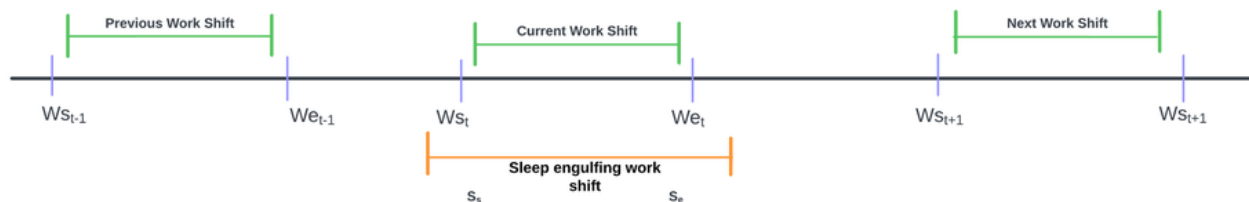


Ideal Scenario

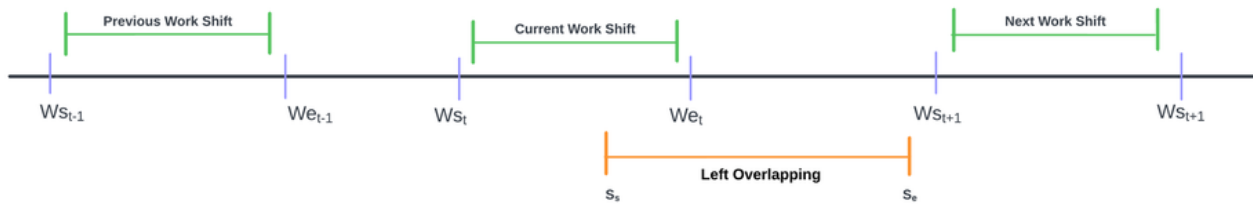
2. **Entire sleep inside current work shift** - Where current sleep start and current sleep end are between current work shift



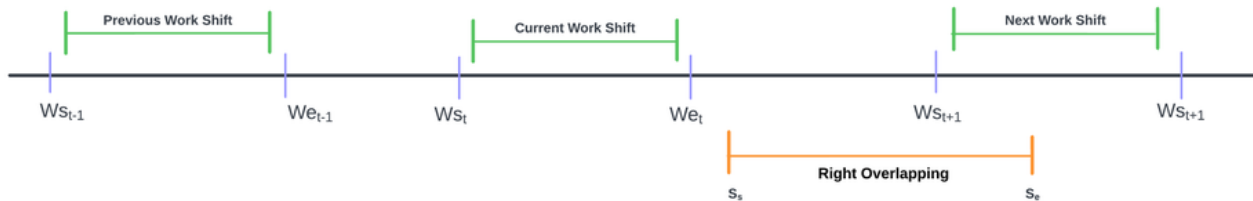
3. **Entire work shift inside a sleep** - Where current work start and current work end in between a sleep



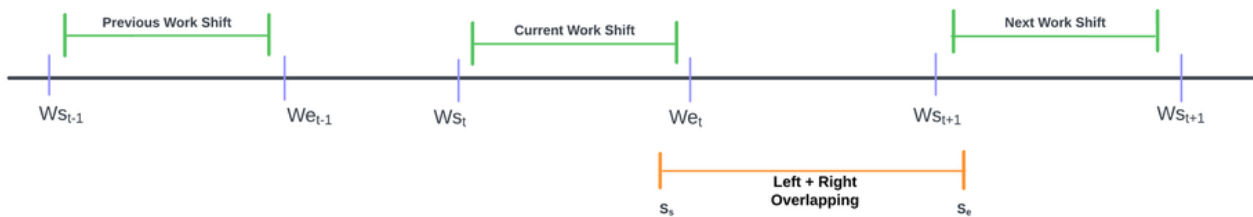
4. **Sleep start is before current work end** - Where the sleep start is before current work end



5. **Sleep end is after next work start** - Where just the sleep end is after next work start



6. **Sleep_start is before the current work end and sleep end is after the next work start** - Scenario 4 + Scenario 5 (Left + right overlapping)



7. **Sleep start is before current work starts and sleep end is in between current shift** - Where the sleep starts before current shift and ends in between



8. **Sleep start and sleep end is before current shift** - Where the sleep is entirely before current shift



9. **No matching sleeps or No shifts** - Where we do not find sleep or shifts for a particular user