

# Sleep and Steps

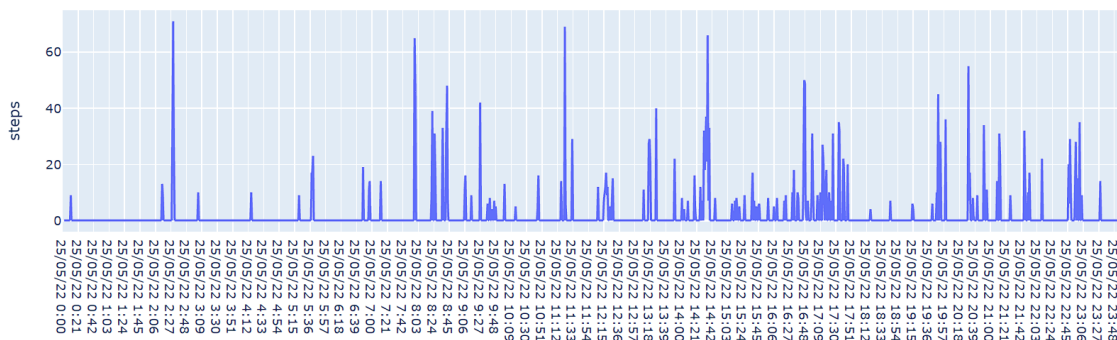
## Preprocessing:

Fill the empty values of steps with zeros because the count of steps is already so less frequent that it shouldn't be used to estimate the missing values.

Count the steps in a particular sleep type (for that duration) and put the number of steps taken during that duration in a new column in the 'sleep' dataframe.

## Plot:

Number of steps vs datetime

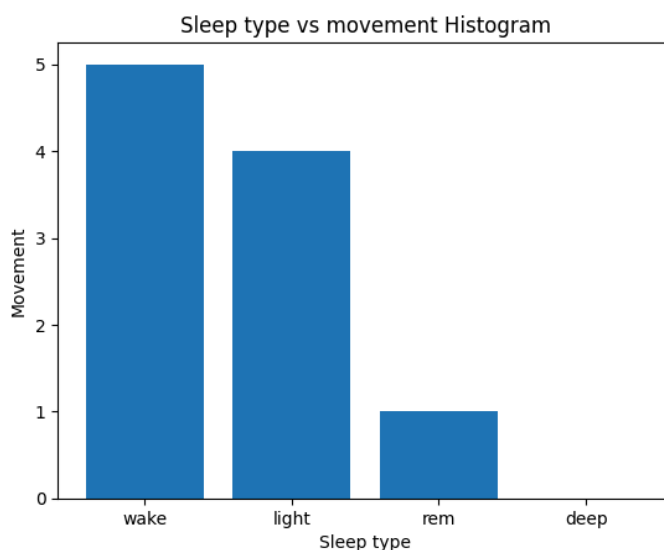


## Result:

It happened 5 times that person woke up and moved.

Along with that, the person moved 4 times in light sleep and 1 time in REM sleep.

Along with that, the total step count of the person is **2790** which is very less. Less physical activity may be the reason for the above mentioned conditions of the person.



## Conclusion:

The person woke up and moved many times at night.

According to me, following can be the possible reasons:

**Stress and Anxiety:** High levels of stress or anxiety can disrupt sleep and lead to frequent awakenings.

**Sleep Disorders:** Conditions such as sleep apnea, restless legs syndrome, or periodic limb movement disorder can cause repeated awakenings during the night.

### **Moving during REM sleep:**

Person moved 1 time in REM sleep. It could be due to RBD.

REM Sleep Behavior Disorder (RBD) is a sleep disorder characterised by the absence of normal muscle paralysis during REM sleep.

RBD can be associated with neurological disorders such as Parkinson's disease, multiple system atrophy, or Lewy body dementia. Certain medications, particularly antidepressants and medications used to treat Parkinson's disease, can trigger or exacerbate RBD symptoms.

Please refer to the colab notebook for complete code:

<https://colab.research.google.com/drive/1zZSqkDTv2e5Pfte41z8W7yF2IVbs5IJG?usp=sharing>