

Our project title is the Sleep Assistant. The goal for the project is to create a website with an interface that allows users to access a variety of different metrics related to sleep and then determine how many hours of sleep they should get per day. The databases connected to the website would contain a variety of different values, such as people's gender, age, their physical activity, stress levels, BMI, and more. The database also contains the number of hours of sleep a person with those metrics takes and when that corresponds to better health and sleep quality. The user must enter in their own information for each of these different items and then the website will output the proper number of hours of sleep that the user needs to maintain a good standard of health.

One creative feature that we could create is an interactive graph generated from our data. It would be a graph of the general amount of sleep needed for different people based on percentiles, with the y-coordinate always being the amount of sleep needed and the x-coordinate being different metrics, such as gender, age, stress levels, or BMI. Then the individual could see their place within the general population, which could help contextualize their solution and also potentially motivate them to improve themselves so as to better their quality of sleep.

The main problem we aim to tackle with the Sleep Assistant is the current lack of proper sleep among many students and frankly people in general in the modern world. This is a travesty in many ways, as a good amount of sleep is vital to one's mental and physical health. It's important to cleanse one's memories, ensure emotional recovery, heals bruises and wounds, and replenishes the body for the trials of the next day. However, studies have shown that about 32.3% of adults in the US suffer from insufficient sleep, and 35% of Americans get less than the recommended seven hours of sleep each night. This is a genuine problem — a third of Americans are ruining their health with improper health. The Sleep Assistant will allow users to

understand how many hours of sleep they need and has the potential to genuinely improve many people's health.

While there are other websites with a somewhat similar function to Sleep Assistant out there for certain — such as the Sleep Foundation's Sleep Calculator, Calculator.net's Sleep Calculator, and CalculateMySleep.com's Sleep Calculator. However, they often use fewer metrics and thus are unlikely to have quality predictions. For instance, the Sleep Foundation's Sleep Calculator only considers one's age range and the time they go to sleep, Calculator.net's Sleep Calculator is almost worse, only calculating sleep cycles or using basic math to determine when one should go to sleep if they input the time they want to wake up and how long they want to sleep. CalculateMySleep.com also only considers age and when one wants to wake up. Our Sleep Assistant will take in far more metrics to calculate a far more precise amount of sleep based on an individual's specific qualities, traits, and needs.

There will be two different datasets utilized for this project. One is this: [Sleep Health and Lifestyle Dataset \(kaggle.com\)](#). It is a Sleep Health and Lifestyle Dataset stored in a .csv format. It possesses a great deal of information on a person's gender, age, occupation, physical activity level, stress levels, BMI, and how that ties into their sleep length and quality of sleep. It has a cardinality of 400, as it possesses 400 rows, and a degree of 13, as it possesses 13 columns: Person ID, Gender, Age, Occupation, Sleep Duration, Quality of Sleep, Physical Activity Level, Stress Level, BMI Category, Blood Pressure, Heart Rate, Daily Steps, and Sleep Disorder.

Another dataset we could use is this: [Fitness Trends Dataset \(kaggle.com\)](#). It is a Fitness Trends Dataset that connects information involving physical activity and hours of sleep and determines one's mood from the intersection of those variables. It is all stored in a .csv format. It has a cardinality of 101, as it has 101 rows, and a degree of 7, as it has 7 columns: Date, Step

Count, Calories Burned, Mood, Hours of Sleep, Feeling of Activeness or Inactiveness, and Weight.

In terms of the website functionality, the user will enter the website, enter in a variety of information related to them into a simple search interface, and then the values the user enters will travel to the database, where the various queries will then output how many hours of sleep they are recommended to take. It is a somewhat simplistic interface, but we strongly believe that the strength of the Sleep Assistant lies not in a highly complex client-side, but rather in the variety of data and variables we consider before giving our users the amount of sleep they need.

The work will be split among our four team members. Jeffrey (Jjhuang4) will be handling frontend web development for Sleep Assistant. He will be primarily working on the client-facing functionality of the website, such as where the user inputs their data into the website and then sees the information that is outputted. Neha (Njaga3) will work on UI/UX, designing the aesthetic, look, and overall feel of the website. She will also be assisting Jeffrey with frontend web development whenever and wherever necessary. Sam (Stinubu2) will be primarily working on the backend, developing the server-side protocols and ensuring that the database is properly connected to the client-facing end of our web application. Kedar (Kedarm2) will be mostly focusing on the SQL queries side of the project, specifically creating the stored procedures, triggers, and queries that are necessary to retrieve the proper number of hours of sleep for the user.

Here are the UI mockups for our project website:

# sleep assistant




[click here to begin ->](#)

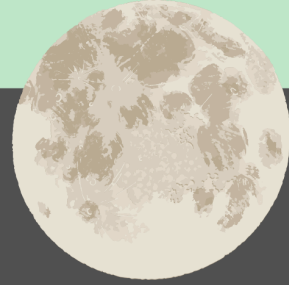
# sleep assistant



Select your age:

# sleep assistant



**Based on your demographics, getting at least 7.5 hours  
of sleep a night is necessary.**

**Return Home**