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**NodOff Requirements Document Draft**

# Introduction (JE)

The purpose of this document is to condense and summarize the system requirements for the NodOff App. Contained in this document is a detailed summary of the various functions of the app, along with diagrams outlining their processes and requirements. The **Description Model** describes the requirements for the system. The **Class Diagram** outlines all the system objects, and how they can interact with one another. The **Use Case Diagram** reviews all the possible uses of the system. The **Use Case Diagram** builds off of the use case diagram and provides a sequence of possible events pertaining to a certain activity, along with any exceptions that may occur. The **Systems Sequence Charts** will provide sequence diagrams for each Use Case Scenario.

# Description Model (JE & CV)

Using text, describe the requirements for your system. Expand on the function section from your project plan. Include requirements for the following categories: Output, Input, Processes, Performance and Security.

1. Initial requirements
   1. Being a mobile application, NodOff works either on Android or Apple platforms. A user of NodOff needs an internet connection for account creation, and for sleep data processing. The user is encouraged to have a device with Bluetooth connectivity such as a smart watch (Apple Watch, Samsung Watch, Fitbit) and smart home integration (Google Home, Amazon Alexa), but is not required to have either.
2. Security
   1. NodOff’s security comes from both encrypting locally stored data, and internal security features to verify one's identity, and to ensure secure data transmission. The user may enable two factor authentication in order to protect their account’s private sleep information from being compromised. As an alternative to two factor authentication, the user can enable smartphone fingerprint scanning in order to utilize their fingerprint as a method of verification of its own. The user’s data will be saved locally on their own device with the Nod-Off application.
3. Processes
   1. Login
      1. To start tracking sleep, a new user needs to create a new account. To create a new account, the user would click the “Create New Account” and enter their username, email, and desired password. The username must be between 6-20 characters, and can contain letters, numbers, and special characters. The password must contain at least 8 characters, and have at least 1 uppercase character, 1 number, and one special character. A confirmation email will then be sent, and after confirmation, the user will be taken to the main menu.
      2. If the client is a returning user, the client can simply enter their username and password after clicking “Login”. If the user does not remember their username/password, they are able to reset it by clicking “Forgot password?”. They will then be sent a temporary single use password to the associated email, which can then be used to login. The password can then be changed under the Settings tab once logged in.
   2. Menu
      1. Once logged in, the menu is displayed, with the Sleep Tracker, Dream Journal, and Alarm buttons in the center of the screen, with the Settings button in the top right corner of the screen.
   3. Sleep Tracker
      1. If the Sleep Tracker button is pressed, the Sleep tracker window opens. Here, the user can view both the daily and weekly sleep tracking graphs side by side, along with last night’s sleep data. The user can view the graphs in greater detail by clicking on either of the graphs to view a full screen version. The graph will be recorded from the previous night’s sleep and through the week.
   4. Dream Journal
      1. If the Dream Journal button is pressed, the Dream Journal window opens. Here the user can view and edit the dream journal. The dream journal is locally stored and encrypted.
         1. Viewing
            1. The user can select a date on a calendar with a previously entered dream journal to read the journal. This is a read only action.
         2. Writing
            1. The user can create a new journal entry by clicking “New Journal Entry”. This creates a space for the user to write, along with an on-screen keyboard. The date is automatically correlated with the phone calendar. The user will not have to enter the current date. Changes are automatically saved (with date). The user may edit the saved prompt afterwards. Each message prompt is limited to 1000(one thousand) words.
   5. Alarm
      1. If the Alarm button is pressed, the Alarm window opens. Here the user can manage the alarm, integration with a smartwatch and smart home device and the smart wake up feature.
         1. Alarm
            1. Users can select the time selection menu to adjust the alarm. Upon confirmation, a notification pops up letting the user know that the alarm is active.
            2. If the alarm is already active, the user can toggle the switch with the alarm clock symbol to enable or disable the alarm.
         2. Enable integration.
            1. The user can toggle the integration with smartwatches and smart home devices with the toggle labeled with a smartwatch symbol. When enabled, the app can gather sleep data using the smartwatch by using the heart rate monitor associated with the smart watch. Instead of just the phone and can use the smart home devices when the alarm is activated. The smart home device connects to google home or amazon devices such as smart curtains, or smart lights. It will correspond with the set alarm on the Nod Off app and activate those external smart home devices. This will default to the disabled state, and will rely just on the phone’s accelerometer, light meter, and activity status to determine sleep patterns.
         3. Smart Wake Up
            1. The user can toggle the Smart Wake Up feature with the toggle located on the bottom of the screen. When enabled, the app can wake the user up earlier than the alarm is set for, in order to wake them up at the optimal point in their sleep cycle. This defaults to disabled and requires the integration features to be enabled.

# Class Diagram (DO)

<https://github.com/jbabu4501/Team-4/blob/main/Use%20Case%20Diagram%20-%20NodOFF.drawio.png>

# Use Case Diagram (JE)

<https://github.com/jbabu4501/Team-4/blob/main/Use%20Case%20Diagram%20-%20NodOFF.drawio.png>

# Use Case Scenarios (JB)

<https://github.com/jbabu4501/Team-4/blob/main/Nod-Off%20Use%20Case%20Scenario.xlsx>

# System Sequence Charts (CV)

<https://github.com/jbabu4501/Team-4/blob/main/NodOff%20System%20Sequence%20Diagram.vsdx>