User requirements & Site acceptance

Smart Guard

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Group no. 11

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1. Description

Smart Guard device is designed to alert selected individuals when an epileptic seizure occurs, as of now when someone prone to epileptic seizures may find themselves unable to move and unconscious with no help on the way. Our system is designed to be able to detect an epileptic seizure and send messages to selected contacts so that the individual does not have run into dangerous situations which can be fatal in some cases, the system can also alert the authorities if desired. As long as, The Medication Reminders System which is a mobile app that helps with scheduling medication and notifying the user to take his or her medications.

2. User Requirements

Medication Reminder System:

- The system should provide medication reminders based on the user's medication schedule.
- The reminders/notifications will be customized though an app.
- Users should be able to input their medication details including dosage and the time to take the medications.
- The user interface should be intuitive and easy to navigate without needing any guidance/ manuals.

Fall Detection and Alert System for Elliptical Seizures:

- The device will be in the formfactor of a portable watch.
- The device should automatically detect elliptical seizures and trigger an emergency alert system though a fall detection system.
- Users should be able to customize emergency contacts to be notified during a seizure event, through Wi-Fi by SMS/email.
- The device should send the user's location with a GPS module integrated in the device through Wi-Fi to a contact or control center in case of emergency or a fall.
- An emergency button should be implemented in the safety device.
- The device must detect every fall and ask for user input to decipher if it's a false alarm or if the emergency contacts need to be notified.
- The device should have a reasonable battery life at around 12h.
- The device should be comfortable for wearing throughout the day.
- The device should be affordable and accessible to a wide range of users at around $90.

3. Site Acceptance Testing

Medication Reminder System:

No.	Requirements	Test Setup/Preconditions	Steps to perform the test	Result for test success
1	The system should provide medication reminders based on the user's medication schedule.	Ensure the medication Reminder System is installed and configured.	1. Set up multiple medication schedules with different medications and dosages.	Reminder are received at the specifies times for each medication schedule.
2	The reminders/notifications will be customized though an app.	Ensure that the app is properly installed.	1. Customize medication reminders/notifications settings through the app.	Customized reminders are accurately reflected on the device.
3	Users should be able to input their medication details including dosage and the time to take the medications.	Ensure the user has access to the Medication reminder app.	1. Input medication details, including dosage and schedule, into the system interface.	Medication details are successfully stored and displayed in the system.
4	The user interface should be intuitive and easy to navigate without needing any guidance/manuals.	Ensure the user is unfamiliar with the app interface.	Provide the user with the app and observe their interaction and feedback.	User can navigate through the interface without assistance and easily set up medication reminders.

Fall Detection and Alert System for Elliptical Seizures:

No.	Requirements	Test Setup/Preconditions	Steps to perform the test	Result for test success
1	The device will be in the form factor of a portable watch.	Integrate all components of the watch and ensure it is powered and configured.	1. Inspect the device to confirm it resembles a portable watch.	The device physically resembles a portable watch and can be comfortably worn on the wrist.
2	The device should automatically detect elliptical seizures and trigger an emergency alert system though a fall detection system.	Ensure the device is connected and the fall detection system is configured and ready to go.	1. Simulate elliptical seizure motion to trigger the fall detection system.	The device successfully detects a fall and sends the emergency message
3	The device should send the user's location with a GPS module integrated in the device through Wi-Fi to a contact or control center in case of emergency or a fall.	Ensure the device has a functioning GPS module and is connected to Wi-Fi.	1. Simulate a fall and verify that the device sends the user's location to the emergency contact.	The device successfully sends the user's location to the emergency contact.
4	An emergency button should be implemented in the safety device.	Ensure the emergency button is easily accessible on the device.	1. Press the emergency button to activate the emergency alert system.	Pressing the emergency button triggers the emergency alert system which sends the user's location to the emergency contact.
5	The device must detect every fall and ask for user input to decipher if it's a false alarm or if the emergency contacts need to be notified.	Ensure that the device is configured to detect falls accurately.	1. Simulate falls of varying types.	The device detect all falls and asks the user to input if the fall is false, distinguishing between false falls and genuine ones that needs emergency.

6	The device should have a reasonable battery life at around 12h.	Ensure that the device is charged and in a stable operating condition.	1. Monitor the device's power consumption over 12-hour period under typical use conditions.	The device maintains functionality for at least 12 hours without requiring recharging.
7	The device should be comfortable for wearing throughout the day.	Ensure the user is wearing the drive for extended period of tie	1. Ask the user for the comfort attributes of the watch.	The user says that the device is comfortable while wearing it throughout the short and long period of time.