Team41

Zhongkai Yuan 101167954

Xinyu Xu 101169673

Zhixuan Cao 101100302

Use case:

1.new session

•Name: new session

•Primary Actor(s): device user

•Stakeholders and Interests:

•Stakeholders: device user, Neureset System

Interests: Efficient treatment, create a new session to treat the patient

•Pre-condition(s): The connection between the electrode and the device is successful.

•Success Guarantee(s): The patient was successfully treated and brain waves were generated

•Main Success Scenario:

•Use the menu interface to scroll to the "new session" option and press it.

•The timer on the menu interface is turned on and connected with the electrode, and the blue light on the device is turned on.

•Calculate the baseline of 21 EEG sites.

•When treatment starts, the timer displays the remaining time of the session and the progress of the session (both expressed as a percentage).

•Calculate the baseline of 21 EEG sites again.

图示

描述已自动生成

图示

描述已自动生成

2. session log:

•Name: session log

•Primary Actor(s): device user

•Stakeholders and Interests:

•Stakeholders: device user, Neureset System

Interests: Efficient display, View the history of previous seesion

•Pre-condition(s): Already had a session.

•Success Guarantee(s): The user successfully viewed historical session information.

•Main Success Scenario:

•Use the menu interface to scroll to the "session log" option and press it.

•The device retrieves the time and date of the recorded session and displays it on the screen.

图示

描述已自动生成

图示

描述已自动生成

3. date and time setting:

•Name: time and date

•Primary Actor(s): device user

•Stakeholders and Interests:

•Stakeholders: device user, Neureset System

Interests: Efficient display, Set the device time and date

•Pre-condition(s): The device has battery remaining

•Success Guarantee(s): User successfully sets time and date

•Main Success Scenario:

• User selects date and time.

• The device outputs the current date and time.

图示

描述已自动生成

图示

描述已自动生成

4. battery low response of the device:

•Name: battery low response

•Primary Actor(s): device

•Stakeholders and Interests:

•Stakeholders: device, Neureset System

Interests: warning, Make users aware of low battery

•Pre-condition(s): The battery is too low and needs to be charged.

•Success Guarantee(s): Alert users that battery is too low

•Main Success Scenario:

• As the battery usage indicator gradually decreases.

• When it drops to 10%, the battery charge indicator starts showing to indicate the need for charging.

图示

描述已自动生成

图示

描述已自动生成

5. connection loss between electrodes and the device:

•Name: connection loss between electrodes and the device

•Primary Actor(s): device

•Stakeholders and Interests:

•Stakeholders: device, Neureset System

Interests: warning, Make users aware of connection loss

•Pre-condition(s):”new session” pressed and The electrodes are not connected to the device.

•Success Guarantee(s): Alert the user that the connection has been disconnected.

•Main Success Scenario:

• when contact is lost, the red light flashes, the session is paused and the device starts beeping until contact is reestablished.

•when contact is not reestablished after 5 minutes, the device turns off automatically and the session is erased.

图示

描述已自动生成

图示

描述已自动生成

图示

描述已自动生成

6. therapy history viewing with PC（PC的UI界面）:

•Name: therapy history viewing with PC

•Primary Actor(s): user

•Stakeholders and Interests:

•Stakeholders: user, PC

Interests: Efficient display, View all information of previous sessions

•Pre-condition(s): The session completes successfully and uploads data to PC

•Success Guarantee(s): User successfully viewed data.

•Main Success Scenario:

• The user clicks "view therapy history".

•The screen displays the time, date, starting baseline and ending baseline of all sessions..

图形用户界面, 文本, 应用程序, 电子邮件

描述已自动生成

图示

描述已自动生成

7.connection with PC (上传数据):

•Name: connection with pc

•Primary Actor(s): device

•Stakeholders and Interests:

•Stakeholders: device, Neureset System, PC

Interests: Efficiently upload data to PC

•Pre-condition(s): session completed successfully.

•Success Guarantee(s): Quickly upload session information to PC.

•Main Success Scenario:

• When the remaining time of the session is 0:00, upload the time, date, starting baslein and ending baseline in the session to the PC.

图示

描述已自动生成

图示

描述已自动生成

UML Class diagram

图示

描述已自动生成

Requirements traceability matrix

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| ID | Use case | Requirement | Test | Fulfilled |
| 1 | New session | Create a new session | Run it in QT to see GUI | Direction button |
| 2 | session log | Display time and date of treatment record | After treatment is finished, Press “session log” button | Direction button |
| 3 | date and time setting | Display current time and date | Press “date and time” button | Direction button |
| 4 | battery low response of the device | After 2-3 treatment, the low battery icon pops up | Use treatment 2-3 times and see if the icon pops up | Main window ui |
| 5 | connection loss between electrodes and the device | when connection lose, the red light will turn on | Press “contact” button to see if red light is on | Direction button |
| 6 | therapy history viewing with PC | User can view time, date and diagram of treatment record | after treatment is finished, use PC ui to see if there are data (time, date and diagram) about the therapy | Direction button |
| 7 | connection with PC | When treatment finish, the device upload data automatically | after treatment is finished, use PC ui to see if there are data (time, date and diagram) about the therapy | Main window ui and PC ui |