**Synchronize Information across devices**

**Use stories:**

In hospital’s operation theatre, there are many medical equipment of different vendors available which are use for their respective purposes. As a hospital staff I want ensure that the patient’s data should be present in each equipment before operation starts and during the operation process the generated data should be synchronized among all the devices.

**Acceptance Criteria:**

1. Each medical device should be able to publish and subscribe to same topic.
2. Each medical device should be able to receive data from every other medical device generated during operation procedure.
3. Each medical device should be able to edit the patient’s data and publish it to broker.

**Test Cases:**

1. Given each medical device (1,2,3) is subscribed to the same topic (Patient/#), when any device adds new patient data and publishes it other devices should get that data.
2. Given each medical device (1,2,3) is subscribed to the same topic (Patient/#), when any device adds the new patient data and publishes it one of the devices will keep the count of total no of patients available.
3. Given each medical device (1,2,3) is subscribed to the same topic (Patient/#), when any device edits the patient data and publishes new data all other devices should reflect the change in data.
4. Given each medical device (1,2,3) is subscribed to the same topic (Patient/#), when any device starts the procedure will set the patient busy status flag. So that no other device will terminate the process (delete the client).
5. Given each medical device (1,2,3) is subscribed to the same topic (Patient/#), when any device completes the procedure will reset the patient busy status flag, to acknowledge other devices to start the new procedure.

**User Story 1:**

As a Developer I want to create the Menu page module which will display the available options to the user and will take the choice code from user to direct to function.

**Acceptance Criteria:**

Depending on the user choice the menu page module should execute the respective function.

**Test Cases:**

1. Given user is on welcome page and sees the welcome message with all available options and no previous patient data is available when user choose to add new patient option then input will be taken from the user and will get publish.
2. Given user is on welcome page and sees the welcome message with all available options and previous patient data is available when user choose add new patient option then user will get the “patient data Available, still if you want to add new patient data” message to user.
3. Given user is on welcome page and sees the welcome message with all available options and previous patient data is available when user choose edit patient data option then the choice for which parameter user want to edit will be given and updated patient data will get published.
4. Given user is on welcome page and sees the welcome message with all available options and previous patient data is available when user choose start procedure option then patient busy status will be set and procedure will start, after each 10 sec time elapse user can add consumables used and in the end of procedure one report ID will be generated having procedure information and updated patient data will get published.
5. Given user is on welcome page and sees the welcome message with all available options and previous patient data is available when user choose print patient data option then available patient data will get display.

**User story 2:**

As a user I want to create patient counter file module which will keep the count of total number of patient’s data available.

**Acceptance Criteria:**

In any one of the devices whenever new patient data gets added or any new patient’s data gets receive the count the log file should get incremented.

**Test cases:**

1. Given any of one device has this module and the log file is available with previous count when this user adds new patient’s data or receives new patient’s data through same device, then the count in log file should get incremented by 1.
2. Given any of one device has this module and the log file is not available with previous count when this user adds new patient’s data or receives new patient’s data through same device then this module will create new log file with count as 1.

**User story 3:**

As a Developer I want to create procedure module which will perform all the procedure related functions such and will publish the updated patients’ data.

**Acceptance Criteria:**

1. Procedure module should set the patient busy status flag to avoid any client deletion.
2. Procedure module should be able to execute medical process smoothly and generate the report of results and publish the updated patient’s data.
3. Procedure module should have option to add the used consumables during the process publish the updated patient’s data.

**Test Cases:**

1. Given user has patient’s data available when he chooses start procedure option then the patient busy status should set and module will prompt a message to add any consumables if use after specific interval during process.
2. Given user has patient’s data available when he chooses start procedure option the when the process has competed the module will generate a report Id and publish the updated patient’s data.

**User story 4:**

As a Developer I want to create publisher module which will publish the data from each device to broker.

**Acceptance criteria:**

1. Publisher module should be able to publish the updated patient data whenever it is called.
2. Publisher module should be able to give error message to user if publishing process to broker fails.

**Test cases:**

1. Given user has added or updated patient’s data when publisher module gets called then updated data will be published to the broker.
2. Given user has added or updated patient’s data when publisher module gets called and if client connection fails with broker then module will throw an error message to the user.

**User story 4:**

As a Developer I want to create Subscriber module which will subscribe the data from each device to broker.

**Acceptance criteria:**

1. Subscriber module should be able to subscribe the patient data topic whenever it is called.
2. Subscriber module should be able to give error message to user if subscribing process to broker fails.

**Test cases:**

1. Given Subscriber module has been called when subscription request to broker fails or connection breaks then subscriber module should be able to give error message to user.
2. Given Subscriber module has been called when client connects with broker successfully with patient data topic then client should be able to receive all the updated or newly added data from all the medical devices.