

Test cases ID	Test case scenario	Capsule	Test case data	Expected Result	Actual Result	Passed/Failed	Status
TC_1	Check the initial battery value	Battery	Set the initial battery value at 0%	If initial battery value < 15%, the system should notify user and shut down immediately.	The simulation started, the system checked the battery value and realized its value < 15%. System notified user and shut down immediately.	Passed	Done
TC_2	Check the initial battery value	Battery	Set the initial battery value at 100%	If initial battery value >= 15%, the system should run normally. Battery value decrease 5% every 1.5 second	The simulation started, the system checked the battery value and realized its value >= 15%. System working normally and show the battery value. Battery value decrease 5% every 1.5 second.	Passed	Done
TC_3	Battery is running out	Battery	Set the initial battery value at 100%	If the system working normally (no emergency shutdown), battery value decrease 5% every 1.5 second. When it reach 0, the system notify the user and shut down.	The system working normally. When the battery running out the system notify the user and shut down.	Passed	Done
TC_4	Show User state	User	User in normal state	Send a signal to sensor module that the glucose level of patient is normal.	The system show the user in normal state.	Passed	Done
TC_5	Show User state	User	User in eating state	Send a signal to sensor module that the glucose level will be rising.	The system show the user in eating state. Notify the user that the glucose level will rise.	Passed	Done
TC_6	Show User state	User	User in exercising state	Send a signal to sensor module that the glucose level will be decreasing	The system show the user in exercising state. Notify the user that the glucose level will drop.	Passed	Done
TC_7	Show glucose level	Sensor	Received signal that user in normal state	Sensor generates a random value between 80 - 90 mg/dL	System shows glucose level of the patients is 84 mg/dL	Passed	Done
TC_8	Show glucose level	Sensor	Received signal that user in eating state	Sensor generates a random value between 100 - 115 mg/dL. Send a signal to insulin/glucagon to activate the pump.	System shows glucose level of the patients is 107 mg/dL. System alert that the glucose level is too high.	Passed	Done
TC_9	Show glucose level	Sensor	Received signal that user in exercising state	Sensor generates a random value between 70- 80 mg/dL	System shows glucose level of the patients is 75 mg/dL. System alert that the glucose level is too low.	Passed	Done
TC_10	Inject Insulin	Insulin/Glucagon	Received signal to inject Insulin from sensor	Notify inject Insulin to patient successfully. Show number of Insulin dosage left in the reservoir.	Notify inject Insulin to patient successfully. Show number of Insulin dosage left in the reservoir. Glucose level return to normal. User back to normal state.	Passed	Done
TC_11	Inject Glucagon	Insulin/Glucagon	Received signal to inject Glucagon from sensor	Notify inject Glucagon to patient successfully. Show number of Glucagon dosage left in the reservoir.	Notify inject Glucagon to patient successfully. Show number of Glucagon dosage left in the reservoir. Glucose level return to normal. User back to normal state.	Passed	Done

TC_12	Check the initial number of Insulin/Glucagon dosages	Insulin/Glucagon	Set the initial number of both Insulin and Glucagon dosage = 0	The system found out that the reservoir is empty. Notify the user then shut down immediately.	The simulation started, the system checked and realized the number of Insulin/Glucagon dosage is not sufficient. System notified user to refill then the system shutdown.	Passed	Done
TC_13	Check the initial number of Insulin/Glucagon dosages	Insulin/Glucagon	Set the initial number of both Insulin and Glucagon dosage > 0	The system found out that the reservoir is sufficient. The system working normally.	The simulation started, the system checked and realized the number of Insulin/Glucagon dosage are sufficient. System working normally.	Passed	Done
TC_14	Insulin/Glucagon dosage running out	Insulin/Glucagon	Set the initial dosages of both Insulin and Glucagon = 3	If the dosages of Insulin/Glucagon run out before the battery. System alert the user, show the number of dosages left and shut down immediately.	System alert Insufficient Insulin/Glucagon in reservoir. Notified user to refill then the system shut down.	Passed	Done