

ID	Requirement	Related Use Case(s)	Fulfilled By	Test	Description
1	Using the Semi-Automatic AED Plus	- Using Real CPR Help - Using the Semi-Automatic AED Plus GUI	AED.h, AED.cpp	N/A	A collection of setters and getters that either set or are used to access the state of objects. A class that uses the facade design pattern to provide an interface
2	Using Real CPR Help	N/A	AED.h, AED.cpp	In case of PEA or prompted for post-shock resuscitation, repeatedly click on the cpr button for feedback on compression rhythm and depth	Real-time cpr feedback is provided to user to provide more accurate resuscitation
3	Using the LCD Display	N/A	Mainwindow.h, mainwindow.cpp	LCD display will respond to changes in the following: battery, heartbeats, heart rate, patient status, shocks provided, self tests	User can be guided through the LCD display and gain valuable information.
4	Applying CPR D-padz (adult or infant)	N/A	Mainwindow.h, mainwindow.cpp, AED.h, AED.cpp	Only two states exist for the cpr d-padz: correctly placed, or incorrectly placed. User can interact to place the pads correctly	User can attach electrodes (part of the padz) to patient, selecting either the adult or child pads

5	Using the Self Test Feature	N/A	AED.h, AED.cc	AED self-test results indicated on startup of AED on the LCD display	User is informed that the AED is not functional due the failing the self tests
6	Identifying Battery Condition	N/A	Mainwindow.h, mainwindow.cpp, AED.h, AED.cpp	Shocks result in depletion of battery, and low battery will result in message to LCD screen	AED is able to show battery level and shows gradual battery depletion on shocks
7	Advising and prompting user to administer shock	N/A	Mainwindow.h, mainwindow.cpp, AED.h, AED.cpp	Shock will update ECG, heart rate, and battery on the LCD display	AED is able to provide controlled shocks to the patients through the electrodes in the D-padz
8	Pulse Generation	<ul style="list-style-type: none"> - Using real CPR help - Using the Semi-automatic AED Plus Graphical User interface 	Heart.h, Heart.cpp	Pulse is generated in the Heart and heart rate is calculated through them. Heart rate is displayed on the LCD screen	Pulse generation is dynamic and simulates the cardiac arrest scenario and is closely related to the CPR process and the graphical interface of the AED, which monitors and displays heart rate and rhythm.
9	Pulse Analysis	<ul style="list-style-type: none"> - Using the Semi-automatic AED Plus - Using the LCD Display 	Heart.h, Heart.cpp	Pulse analysis over 6 seconds determines heart rhythm and heartbeat. Shown on the LCD screen	Pulse analysis determines the state of the victim's heart and displays data on the LCD.

10	Shock administration	- Using the Semi Automatic AED Plus	Heart.h, Heart.cpp	Status of shock administration shown on the LCD screen	Shock administration in case of certain cardiac conditions, mainly VTACH or VFIB
11	Heart State Update	- Using the Semi Automatic AED Plus Graphical User Interface - Using the LCD Display	Heart.h, Heart.cpp	Heart updates regularly to output change in patient's status. Changes observed on screen after interacting with UI prove this	Updating the heart state helps AED monitor patient's status and provide updated data on the ECG
12	Default age initialization	- Using Electrodes	Patient.h, Patient.cpp	Verify default age is 18 from the UI	Patient is initialized and heart conditions analyzed on pad connection
13	Age-based compression depth setting	- Applying CPR-D-padz	Patient.h, Patient.cpp, Heart.h, Heart.cpp	Verify compression depth range variance between adults and kids	Patient is resuscitated with different compression depth based on age range. Age range determined by which of the two pads (Adult or Child) receive a signal. Due to inconsistent compression depth, range is applied
14	Cardiac arrest detection	- Using the Semi Automatic AED Plus	Patient.h, Patient.cpp, Heart.h, Heart.cpp	Check prompt to shock. Only cases for shock	If patient has a heart rate of over 120bpm, they are in a

				are VTACH or VFIB	state cardiac arrest
15	Administering shock	<ul style="list-style-type: none"> - Using Electrodes (part of the cpr d-pads) 	Patient.h, Patient.cpp Heart.h, Heart.cpp	Test shock administration.	Simulates the administration of a shock
16	CPR suitability determination	<ul style="list-style-type: none"> - Using the Semi Automatic AED Plus - Applying CPR-D-padz 	Patient.h, Patient.cpp, Heart.h, Heart.cpp	If the heart requires resuscitation from either asystole or PEA state	Determines if CPR is applicable
17	CPR administration feedback	<ul style="list-style-type: none"> - Using real CPR help 	Patient.h, Patient.cpp	Conditions for administering shock are only in cases of VTACH or VFIB	Provides feedback on CPR administration