BPM DOCUMENTATION

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0xDEADBEEF

Members are as follows:

- Huseyin Sert (HS)
- Jesse Batt (JB)
- Harrison James Marcks (HJM)
- Dan Steer (DS)

Purpose of document

This document aims to bring all **documentation** created for the BPM under one file.

This document was initially completed for B1 submission. The components that were completed for the B1 submission were as follows:

- Requirements
- Acceptance Tests
- High Level Design

The low level designs were not completed as we had not yet seen enough code or looked thoroughly through the hardware for the Blood Pressure Machine component.

Upon further revision, it was discovered that there were some errors in this document. Huseyin Sert was responsible for going through the entire document and correcting errors and making additions to the document.

Any text which has a line going through it ~~like this~~ was created in B1 submission which was discovered to be incorrect.

Requirements, acceptance tests and high level designs were contributed by all members. In the contents page it can be observed which part was completed by which member.

Low levels designs, on the other hand, were completed by Huseyin Sert.

Requirements

ID	SUMMARY OF REQUIREMENT (I WANT TO)	RATIONALE (SO THAT I CAN)	PRIORITY	SOURCE (was not used in B1 submission)	CREATED

POST/Power ON (Harrison James Marcks)					
P1	Be able to test the memory	Verify the board will work correctly	S		04/10/2018
~~**P2**~~	~~Be able to test the screen~~	~~Verify the screen will display correctly~~	~~S~~		~~04/10/2018~~
P3	Be able to test the CPU (Jump instructions)	Verify the board will work correctly	S		04/10/2018
P4	Be able to test the power	Verify the board will work correctly	S		04/10/2018
P5	Be able to test ROM	Verify the board will work correctly	S		04/10/2018
P6	Be able to perform POST/Power on the device	So the board can actually be used and boot up	S		04/10/2018
P7	Be able to check buttons	So that the buttons can be used	S		04/10/2018
P8	Check network interface	So that we can wired devices	N		04/10/2018
~~**P9**~~	~~Check blue tooth module~~	~~So that we can connect devices~~	~~N~~		~~04/10/2018~~
P10	All tests run automatically on system start	Perform the tests automatically every time it is started	C		12/11/2018

Blood Pressure Machine (Harrison James Marcks)					
B1	Measure a user's blood pressure	Take readings and make medical judgements	S		15/10/2018
~~**B2**~~	~~Send BP readings to screen~~	~~View a user's blood pressure~~	~~S~~		~~15/10/2018~~
B3	Read data from the readers	So that readings can be gathered	S		17/10/2018
B4	Take average blood pressure	Have better results	C		17/10/2018
B5	Filter out erroneous readings and data	Have more accurate results	S		17/10/2018
B6	Measure blood pressure in real time	Read more relevant ratings	S		17/10/2018

Human Interface (Huseyin Sert)

H1	Perform a single button click	Interact with the device, select options	S		25/11/2018
H2	Perform a double button click	Interact with the device, trigger secondary(subtasks) tasks	C		25/11/2018
H3	Perform a long button click	Interact with the device, trigger secondary(subtasks) tasks	C		25/11/2018
H4	Perform a multi-button click	Interact with the device, trigger secondary(subtasks) tasks			25/11/2018
~~**H5**~~	~~Be able to use sliders~~	~~Interact with the device, navigate menu~~	~~C~~		~~25/11/2018~~
~~**H6**~~	~~View feedback on screen~~	~~Ensure that button clicks are registered~~	~~C~~		~~25/11/2018~~
H7	View feedback on LEDs	Ensure that button clicks are registered	C		25/11/2018
~~**H8**~~	~~Enter user information~~	~~Have multiple user profiles~~	~~N~~		~~25/11/2018~~
~~**H9**~~	~~Change scale of BPM using slider~~	~~View more precise readings~~	~~C~~		~~25/11/2018~~
~~**H10**~~	~~Change the scale of the UI using the slider~~	~~I can enlarge the words on screen~~	~~N~~		~~25/11/2018~~

~~Screen (Huseyin Sert)~~

~~**S1**~~	~~Display blood pressure reading~~	~~See blood pressure reading~~	~~S~~		~~25/11/2018~~
~~**S2**~~	~~Show other data being read from the device~~	~~The screen real estate is used effectively~~	~~N~~		~~25/11/2018~~
~~**S3**~~	~~Display blood pressure reading in real time~~	~~Ensure that the device is working properly, Tell patient what is going on with their readings~~	~~S~~		~~25/11/2018~~

S4	Display multiple blood pressure readings	Compare readings	N		25/11/2018
S5	Display Menu	Select different menu option, Perform different tasks	S		25/11/2018
S6	Display text and data in a clear and readable format	See text and data on the screen clearly	S		25/11/2018
S7	Display message on boot up	Indicate that the screen will be working	S		25/11/2018

Menu (Jesse Batt)

M1	Navigate a menu	Select different options	S		26/11/2018
M2	Select a menu option	My navigation has meaning	M		26/11/2018
M3	Return to Menu	I can select something else	M		26/11/2018
M4	Select the BPM Activity from the menu	I can take a reading	S		26/11/2018
M5	Select User Profiles from the menu	I can configure user profiles	N		26/11/2018
M6	Reboot the board	I can perform more controlled maintenance and fixing	S		26/11/2018
M7	Navigate to Options Menu	I can edit options	N		26/11/2018

Database (Jesse Batt)

DB1	Load data from a database	Store a data for querying	S		26/11/2018
DB2	Commit data to a database	Data can later be queried	S		26/11/2018
DB3	Store user data in database	Multiple users can be stored	S		26/11/2018
DB4	Load user data from the database	Different user data can be loaded	S		26/11/2018
DB5	Keep track of previous readings	Keep a record of previous readings	S		26/11/2018

DB6	Communicate with device and web app	So that the above can all operate	S		

Web Application (Dan Steer)

WA1	Pages loads in reasonable time	To create a good user experience	S		25/10/2018
WA2	Cross-browser compatible	The web app can be used on multiple platforms	S		25/10/2018
WA3	Web application follows best practices	Ensure best web application performance	S		25/10/2018
WA4	Sensitive information is not stored in source files	Good security practice	S		25/10/2018
WA5	Responsive design is applied	Ensures good usability	C		25/10/2018
WA6	Navigation is functional and intuitive	Ensures good usability	S		25/10/2018
WA7	Prevent against SQL injection e.g. prepared statements	Good security practice	S		25/10/2018
WA8	Connect to a Database	To load relevant data	M		25/10/2018
WA9	Display blood pressure data	So user can access blood pressure information	M		25/10/2018
WA10	Edit user information	To keep records accurate	M		25/10/2018
WA11	Delete user information	Uphold data protection	M		25/10/2018
WA12	Create a user profile	BPM can save results for specific user	M		25/10/2018

Networking (Dan Steer)

NW1	Connect to a network	To connect to the server	M		25/10/2018

NW2	Disconnect from network	To disconnect from all networks	M		25/10/2018
NW3	Enable Wi-Fi	To allow device to connect to a network (eg. the server)	M		25/10/2018
NW4	Disable Wi-Fi	To disconnect from all networks	M		25/10/2018
NW5	Disable Wi-Fi if not connected to network for prolonged period	Save power	C		25/10/2018
NW6	Reconnect to last used network when Wi-Fi is enabled	Speed up connection to server	C		25/10/2018
NW7	Forget a network	To remove networks no longer being used	S		25/10/2018
NW8	Remember connection information for networks	The device can connect without entering a password	S		25/10/2018
NW9	Enable/disable auto connect to networks	Increase usability	C		25/10/2018

Acceptance Tests

POST/Power ON (Harrison James Marcks & Huseyin Sert)

Test Name: PP_T1
Requirements Tested: P1
Outline: Ensure that the system tests the memory
Pre-requisites: System is turned off
Method:

STEP	*Action*	*Expected Observation*
1	Turn on the system	The system will start to blink the LEDs
2	Wait	The system will eventually be started

~~**Test Name**: PP_T2~~
~~**Requirements Tested**: P2~~
~~**Outline**: Ensure that the system tests the screen~~
~~**Pre-requisites**: System is turned off~~
~~**Method**:~~

~~***STEP***~~	~~*Action*~~	~~*Expected Observation*~~
~~*1*~~	~~Turn on the system~~	~~The system will start to display characters on the screen~~
~~*2*~~	~~Wait~~	~~Eventually, it'll move on to the next test~~

Test Name: PP_T3
Requirements Tested: P3
Outline: Ensure that the CPU instructions work correctly
Pre-requisites: System is turned off
Method:

STEP	*Action*	*Expected Observation*
1	Turn on the system	Diagnostic information will be notified on the LEDs relating to the jump instructions being tested
2	Wait	Eventually the system will move onto the next test

Test Name: PP_T4
Requirements Tested: P4
Outline: Make sure the power is stable
Pre-requisites: System is turned off
Method:

STEP	*Action*	*Expected Observation*
1	Turn on the system	System shows it is starting
2	Wait	Information relating to the power supply is displayed

Test Name: PP_T5
Requirements Tested: P5
Outline: Test the ROM to make sure everything is okay
Pre-requisites: System is turned off
Method:

STEP	*Action*	*Expected Observation*
1	Turn on the system	System shows it is starting
2	Wait	System shows ROM diagnostic information via blinking the LEDs

Test Name: PP_T6
Requirements Tested: P6
Outline: The POST/Power On tests should be able to run
Pre-requisites: System is turned off
Method:

STEP	*Action*	*Expected Observation*
1	Turn the system on	The first test is run
2	Wait	Each subsequent test is run one after another
3	Wait	All tests have been run and the system is in a sane state OR some diagnostic information is being displayed

Test Name: PP_T7
Requirements Tested: P7
Outline: Check to make sure the buttons can be read from
Pre-requisites: System is turned off
Method:

STEP	*Action*	*Expected Observation*
1	Turn on the system	The system shows it is starting
2	Ask for user input on both buttons	The system confirms each button press and carries on

Test Name: PP_T8
Requirements Tested: P8
Outline: Check network interface
Pre-requisites: System is turned off
Method:

STEP	*Action*	*Expected Observation*
1	Turn the system on	System shows it is starting
2	Wait	The system performs a Hardware check to see if there is an Ethernet or Wi-Fi Module

~~**Test Name**: PP_T9~~
~~**Requirements Tested**: P9~~

~~**Outline**: Check blue-tooth module~~
~~**Pre-requisites**: System is turned off~~
~~**Method**:~~

~~***STEP***~~	~~*Action*~~	~~*Expected Observation*~~
~~*1*~~	~~Turn on the system~~	~~System shows it is starting~~
~~*2*~~	~~Wait~~	~~The system performs a Hardware check to see if there is a blue-tooth module installed~~

Test Name: PP_T10
Requirements Tested: P10, P1, P2, P3, P4, P5, P6, P7, P8, P9
Outline: Perform all tests in sequence at system boot
Pre-requisites: System is turned off
Method:

STEP	*Action*	*Expected Observation*
1	Turn on the system.	The system shows it has begun booting using the LEDs
2	Wait	Eventually the LEDs begin to show POST diagnostic information via predefined (certain rhythm and order) way of LEDs blinking
3	Wait	More tests will be observed with more LED output
4	Wait	Eventually both the LEDs will flash 3 times quickly to inform that tests are completed
5	Wait	If tests fail, the red LED will remain on.

Blood Pressure Monitor (Huseyin Sert)

Test Name: B_T1
Requirements Tested: B1, B2, B3, B6
Outline: Ensure that the device can measure user's blood pressure
Pre-requisites: Make sure the device is turned on, healthy and sensors connected
Method:

STEP	*Action*	*Expected Observation*
1.	Attach the sensors to a person	Sensors are properly attached to a person
2.	Once the reading is completed, look at the blood pressure reading on the display	See a reasonable blood pressure reading
3.	Repeat the above ***STEP***s again to check if readings are consistent	See same or very similar blood pressure readings

Test Name: B_T2
Requirements Tested: B4
Outline: Ensure that the device can take the average blood pressure
Pre-requisites: Make sure the device is turned on, healthy and sensors connected
Method:

STEP	*Action*	*Expected Observation*
1.	Attach the sensors to a person	Sensors are properly attached to a person
2.	Get three different readings from the machine in one sitting	End up with three very similar readings
3.	Once the readings are completed, select the "average" option from the menu	Observe the "average" option returning the average result of the last three readings

Test Name: B_T3
Requirements Tested: B1, B2, B3, B4, B5, B6
Outline: Ensure that the device can filter out erroneous readings and data
Pre-requisites: Make sure the device is turned on, healthy and sensors connected
Method:

STEP	*Action*	*Expected Observation*
1.	Attach the sensors to a person	Sensors are properly attached to a person
2.	Get different readings from the machine	See the readings on the web application
3.	If some readings are unusually high or low due to – person: not resting 3-5 minutes, talking, has fluctuating body temperature, smoking cigarette less than 30 mins prior to reading or other reasons, identify these readings and delete them.	See a realistic and accurate readings

~~Menu (Jesse Batt)~~

~~**Test Name**: MENU_T1~~
~~**Requirements Tested**: M1, M2, M3, M4, M5, M6, S2, S5, H1, H5~~
~~**Outline**: Ensure that the Menu can navigate between Sub-Menus and return to the Main Menu~~
~~**Pre-requisites**: System turned on, display functional~~
~~**Method**:~~

~~*STEP*~~	~~*Action*~~	~~*Expected Observation*~~
~~*1*~~	~~Use device input such as buttons/sliders to cycle through possible menu options~~	~~Display shows cycling of possible menu options through a possible "hover over" state~~
~~*2*~~	~~Use button to select menu option, for example "Start BPM Reading" or "Settings"~~	~~Device correctly navigates to the chosen sub-menu and the display reflects this~~

~~3~~	~~Use button to return to the main menu~~	~~Device returns correctly to the main menu and display reflects this~~

~~**Test Name**: MENU_T2~~
~~**Requirements Tested**: M2, M3, M4, H5, BPM(All), S2, S5, DB1, DB5, H6~~
~~**Outline**: Ensure the user can prompt the start of a BPM reading via Menu navigation on the device~~
~~**Pre-requisites**: Device is on, Menu navigation working correctly, input connected~~
~~**Method**:~~

~~*STEP*~~	~~*Action*~~	~~*Expected Observation*~~
~~1~~	~~Use buttons to navigate to "Start Reading"~~	~~Device and display correctly reflect the selection~~
~~2~~	~~After the reading is complete, use buttons to navigate menu to view results of reading~~	~~Displays the correct reading on the screen~~
~~3~~	~~Select "View previous readings", pull from database~~	~~Displays correctly~~
~~4~~	~~Return to menu using buttons~~	~~Display and device reach main menu~~

~~**Test Name**: MENU_T3~~
~~**Requirements Tested**: M1, M2, M7, H1, S5, P6~~
~~**Outline**: Ensure the board can be rebooted as prompted by the user~~
~~**Pre-requisites**: Device is on, Menu navigation working correctly, I/O functional~~
~~**Method**:~~

~~*STEP*~~	~~*Action*~~	~~*Expected Observation*~~
~~1~~	~~Use buttons to cycle to reboot option~~	~~Display reflects this~~
~~2~~	~~Use button to select reboot option~~	~~Device shuts down safely, then reboots automatically, fully functional and ready to go~~

Database (Jesse Batt)

Test Name: DB_T1
Requirements Tested: DB1, DB4, DB5, EU5, M1, M2
Outline: Data can be saved to the database as well as being displayed on the web app.
Prerequisites: The device is powered on, networking is enabled, and the web app server is running

Method:

Step	*Action*	*Expected Observance*
1	Take a test reading on the device	Reading is taken successfully, and SQL query is sent to the database
2	Load database backend to see if reading is saved	Reading saved
3	Load web app, view database	Database displays correctly on the web app

Test Name: DB_T2

Requirements Tested: DB2, DB3, DB4, I7, M1, M2, M5, M8, H7
Outline: User data can be edited on the device then these changes will overwrite existing data for a user within the database
Prerequisites: The device is powered on, networking is enabled, and the web app server is running
Method:

Step	Action	Expected Observance
1	Navigate menu to find the user profile information.	The user information fields (age, gender etc.) should appear either blank or prefilled.
2	Edit the information.	Fields should be editable.
3	Save changes, which will send changes to the SQL database	Success pop up(?)
4	Open database via web app to view database	Updated values display correctly

Human Interface (Huseyin Sert)

Test Name: HI_T1
Requirements Tested: H1. H2, H3, H4
Outline: Ensure that a single button click is registered as only a click
Pre-requisites: System is turned on, healthy, and ready to receive input
Method:

STEP	*Action*	*Expected Observation*
1	Click the button for an option	No other type of button press is registered

Test Name: HI_T2
Requirements Tested: H1. H2, H3, H4
Outline: Ensure that a double button click is registered as only a double click
Pre-requisites: System is turned on, healthy, and ready to receive input
Method:

STEP	*Action*	*Expected Observation*
1	Double click an option	No other type of button press is registered

Test Name: HI_T3
Requirements Tested: H1. H2, H3, H4
Outline: Ensure that a single long press is registered as only a long a press
Pre-requisites: System is turned on, healthy, and ready to receive input
Method:

STEP	*Action*	*Expected Observation*
1	Hold button down to select an option	No other type of button press is registered

Test Name: HI_T4
Requirements Tested: H1. H2, H3, H4
Outline: Ensure that pressing multiple buttons at once is registered as nothing else
Pre-requisites: System is turned on, healthy, and ready to receive input
Method:

STEP	*Action*	*Expected Observation*
1	Push multiple buttons	No other type of button press is registered

~~**Test Name**: HI_T5~~
~~**Requirements Tested**: H5~~
~~**Outline**: Use the slider to change an option~~
~~**Pre-requisites**: System is turned on, healthy, and ready to receive input~~
~~**Method**:~~

~~***STEP***~~	~~*Action*~~	~~*Expected Observation*~~
~~*1*~~	~~Adjust the slider such that an option is changed~~	~~The slider input is correctly handled~~

~~**Test Name**: HI_T6~~
~~**Requirements Tested**: H6~~
~~**Outline**: View feedback on the screen~~
~~**Pre-requisites**: System is turned on, healthy, and ready to send output~~
~~**Method**:~~

~~***STEP***~~	~~*Action*~~	~~*Expected Observation*~~
~~*1*~~	~~Make changes to the system such that what is displayed to the user will change~~	~~Any changes or actions carried out by the user are communicated to them~~

Test Name: HI_T7
Requirements Tested: H7
Outline: View feedback on the LEDs
Pre-requisites: System is turned on, healthy, and ready to send output
Method:

STEP	*Action*	*Expected Observation*
1	Perform a button press	See LEDs response via quick blink, demonstrating that button click has been registered

~~**Test Name**: HI_T8~~
~~**Requirements Tested**: H8~~
~~**Outline**: Enter information on a user~~
~~**Pre-requisites**: System is turned on, healthy, and ready to receive input~~
~~**Method**:~~

~~***STEP***~~	~~*Action*~~	~~*Expected Observation*~~
~~*1*~~	~~Goto user profiles~~	
~~*2*~~	~~Create or edit a new user~~	
~~*3*~~	~~Enter user information using various combinations of the button presses~~	~~The data being entered can be entered by the user using the buttons~~

~~**Test Name**: HI_T9~~
~~**Requirements Tested**: H9~~
~~**Outline**: Use the slider to change the BPM scale~~
~~**Pre-requisites**: System is turned on, healthy, and ready to receive input~~
~~**Method**:~~

~~***STEP***~~	~~*Action*~~	~~*Expected Observation*~~

1	Navigate to BPM screen option	
2	Use the slider to zoom in/out	The readings are enlarged

Test Name: HI_T10
Requirements Tested: H10
Outline: Change the scale of the UI using the slider
Pre-requisites: System is turned on, healthy, and ready to receive input
Method:

STEP	*Action*	*Expected Observation*
1	While on any screen use the slider to change the scale of the text and other things	The text is enlarged/shrunk

Screen (Huseyin Sert)

Test Name: S_T1
Requirements Tested: S1, S3
Outline: Ensure that the screen displays the blood pressure reading
Pre-requisites: Device is turned on, healthy and sensors are connected
Method:

STEP	*Action*	*Expected Observation*
1.	Wait for machine to take the reading	Machine is taking a reading
2.	Once reading is complete, check the screen	See a blood pressure reading

Test Name: S_T2
Requirements Tested: S2
Outline: Ensure that the screen displays all the available / useful data
Pre-requisites: Device is turned on and healthy
Method:

STEP	*Action*	*Expected Observation*
1.	Connect all the sensors and peripherals that can be connected	All sensors and peripherals are fully connected
2.	Make sure that all the data is formatted perfectly on the screen so that every useful and available data can displayed on one screen	View all the available / useful data in one screen without any data missing or protruding out of the screen

Test Name: S_T3
Requirements Tested: S1, S3
Outline: Ensure that the screen displays blood pressure reading in real time
Pre-requisites: Device is turned on, healthy and sensors are connected
Method:

STEP	*Action*	*Expected Observation*
1.	Attach sensors to a person	Sensors are connected to a person
2.	Wait for machine to take the reading	Machine is taking a reading
3.	Look at the screen	See the reading values change as the reading is still in progress

Test Name: S_T4
Requirements Tested: S4
Outline: Ensure that the screen can show multiple blood pressure readings at the same time
Pre-requisites: Device is turned on and healthy
Method:

STEP	*Action*	*Expected Observation*
1.	Navigate to where the user profiles are on the menu	See a list of users
2.	Select a user from the list	See a list of previous readings on one screen

Test Name: S_T5
Requirements Tested: S5
Outline: Ensure that the screen can display a menu
Pre-requisites: Device is turned on and healthy
Method:

STEP	*Action*	*Expected Observation*
1.	Look at the screen	See a list of options available to pick for different tasks

Test Name: S_T6
Requirements Tested: S6
Outline: Ensure that the screen can display text and data on the screen clearly with correct colour inversion
Pre-requisites: Device is turned on and healthy
Method:

STEP	*Action*	*Expected Observation*
1.	Look at the screen	Be able to read text, options, menu and anything intended to be displayed on the screen without difficulty because a clear font is selected and correct colour inversion is being used

Test Name: S_T7
Requirements Tested: S7
Outline: Ensure that the screen can display a boot-up message
Pre-requisites: Device is healthy
Method:

STEP	*Action*	*Expected Observation*
1.	Boot the device up	See a small message on the screen before the device is fully booted

Web Application (Dan Steer)

Test Name: WA_T1
Requirements Tested: WA1, WA3, WA5
Outline: Run performance analysis on web application
Pre-requisites: The PC is powered on and healthy, the PC is connected to the internet, Google Chrome is installed, the website is live, the active program Google Chrome
Method:

STEP	*Action*	*Expected Observation*
1	Navigate to the index of the web application.	Google chrome is displaying the index of the web application
2	Enter the developer console by pressing F12, or right click, inspect element. Navigate to the *Audit* tab.	The developer console is open, and the active tab is *Audit*
3	Ensure all options are selected, apart from *Progressive Web App* and *SEO*. Select the *Desktop* device.	All relevant tabs are selected, the test is ready to begin.
4	Run Audit.	The audit is running.
5	Audit passes.	The web application is adequate (minimum score 45 for a given component)
6	Run the test again, this time select device *Mobile*	The audit is running.
7	Audit passes	The web application is adequate (minimum score 45 for a given component)

Test Name: WA_T2
Requirements Tested: WA2, WA6, WA8, WA9
Outline: Web application is functional on multiple web browsers
Pre-requisites:
The PC is powered on and healthy, the PC is connected to the internet, multiple web browsers are installed (Chrome, Firefox, Opera etc.), the website is live, a web browser is active
Method:

STEP	*Action*	*Expected Observation*
1	Navigate to the index of the web application.	The index page of the website is being shown
2	Go to each page of the website	The current page is functional
3	Repeat steps 1-2 using multiple web browsers	The current page is functional

Test Name: WA_T3
Requirements Tested: WA6, WA8, WA10, WA11, WA12
Outline: Test create, update and delete of a user account
Pre-requisites:

The PC is powered on and healthy, the PC is connected to the internet, a web browser is installed, the website is live, a web browser is active
Method:

STEP	*Action*	*Expected Observation*
1	Navigate to the index of the user section of the web application	The user profiles section of the website is being showed in the web browser
2	Create a new user	A new user has been created successfully. The user is visible.
3	Edit the information about the user that has just been created	Changes have been made to the user account just created, and the information has been saved successfully.
4	Delete the user that has just been created	The all information about the user has been successfully deleted.

Test Name: WA_T4
Requirements Tested: WA3, WA4, WA7
Outline: Check source files don't leak sensitive information
Pre-requisites:
The PC is powered on and healthy, source files are available to access, the root of the web application directory is active (either in terminal or GUI), a text editor is installed
Method:

STEP	*Action*	*Expected Observation*
1	Open each source file (e.g. .html, .css, .js, .php etc.)	The source file contains no database connection information (e.g. password, user, DB etc.). If database queries are used, prepared statements are in place to prevent SQL based attacks.

Networking (Dan Steer)

Test Name: NW_T1
Requirements Tested: NW1, NW3
Outline: Connect to a new network
Pre-requisites:
Device is powered on and healthy and Wi-Fi is disabled
Method:

STEP	*Action*	*Expected Observation*
1	~~Navigate menu to find the Wi-Fi options~~	~~A list of options relating to Wi-Fi is listed~~
2	Turn on Wi-Fi	The device will search for available networks, and list them when the search is complete.
3	Choose a network and attempt to connect	The device will try and connect to the selected network. A prompt to enter the password may appear.
4	Enter network password if required	Connection is successful

Test Name: NW_T2
Requirements Tested: NW2, NW7
Outline: Forget a network
Pre-requisites:
Device is powered on and healthy, Wi-Fi is enabled and connected to a network
Method:

STEP	*Action*	*Expected Observation*
1	~~Navigate menu to find the Wi-Fi options~~	~~A list of options relating to Wi-Fi is listed~~
2	Disconnect from the active network	The device should now be disconnected from the network it was connected to
3	Select option to forget the network it was connected to	A prompt may appear to confirm choice. A list of available network will be listed
4	Try and connect to the network that has just been ‘forgotten’	The prompt to enter a password may appear. This proves the device no longer remembers the network

Test Name: NW_T3
Requirements Tested: NW1, NW2, NW3, NW4, NW5, NW9
Outline: Wi-Fi automatically turns off when inactive for defined period
Pre-requisites:
Device is powered on and healthy, Wi-Fi is enabled and connected to a network, auto-connect to networks is enabled in the Wi-Fi options.
Method:

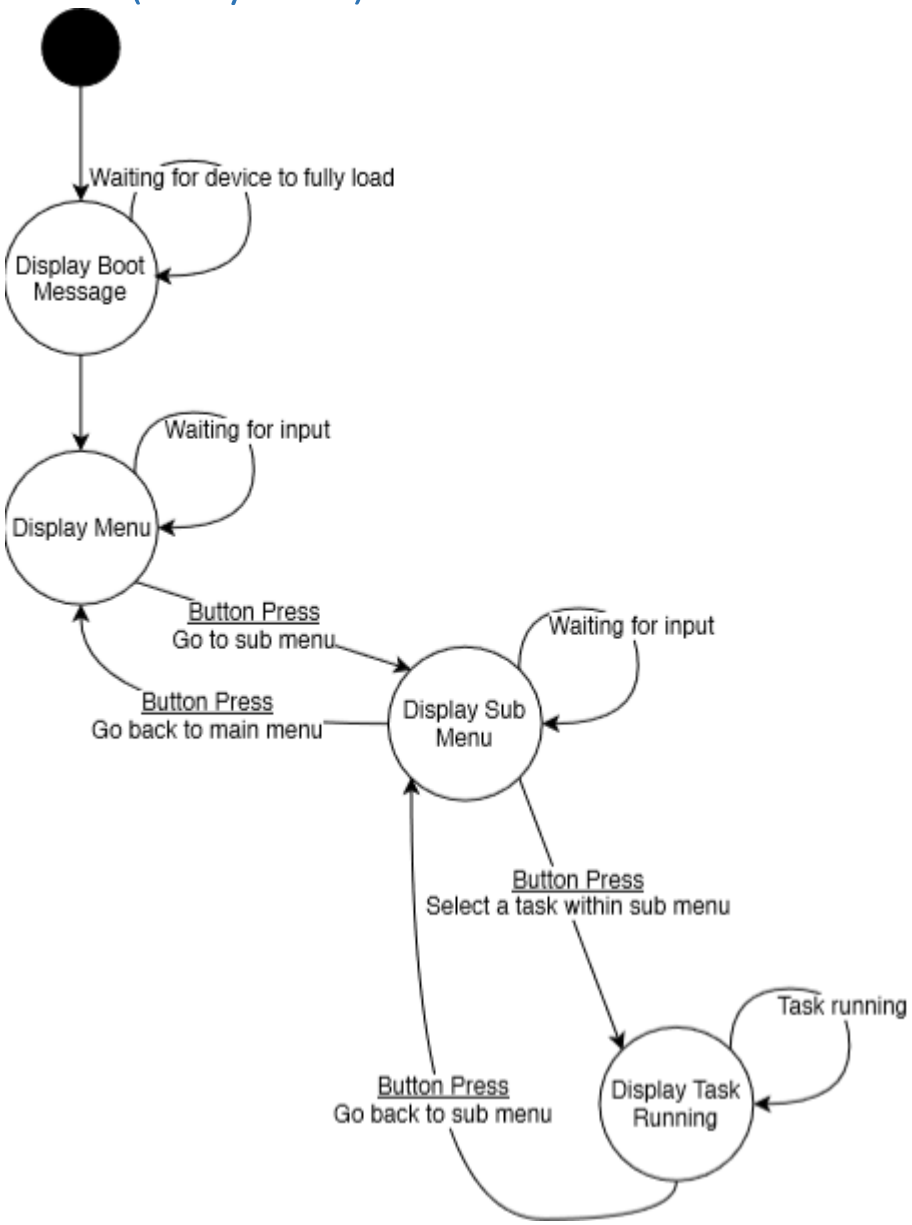
STEP	*Action*	*Expected Observation*
1	~~Navigate menu to find the Wi-Fi options~~	~~A list of options relating to Wi-Fi is listed~~
2	Disconnect from the active network	The device should now be disconnected from the network it was connected to
3	Disable 'auto-connect' to networks	The option has been disabled.
4	Disable Wi-Fi	Wi-Fi should be turned off
5	Enabled Wi-Fi	A list of available networks should be listed
6	Wait for defined period	After period, Wi-Fi should automatically be disabled

Test Name: NW_T4
Requirements Tested: NW1, NW3, NW6, NW8
Outline: Device remembers previously connected networks
Pre-requisites:
Device is powered on and healthy, Wi-Fi is disabled, auto-connect to networks is enabled in the Wi-Fi options.
Method:

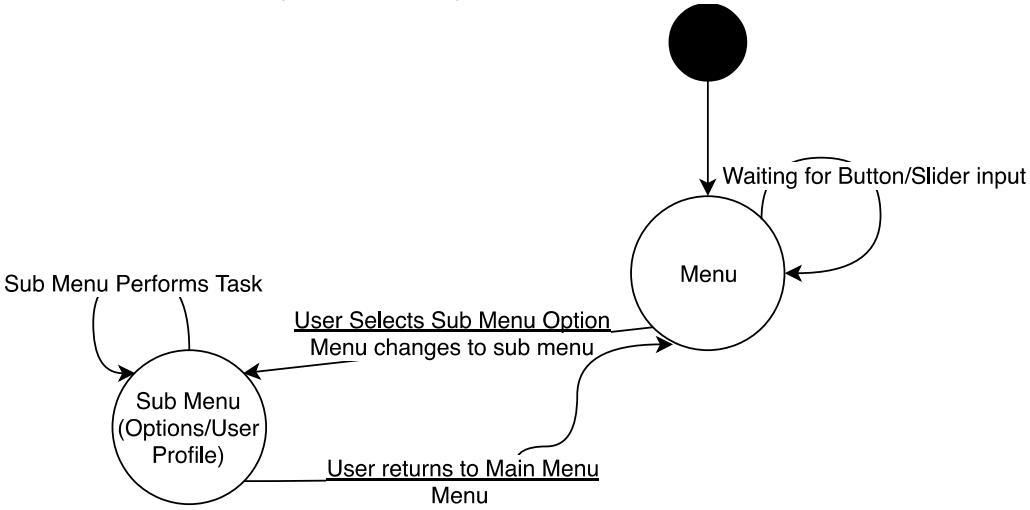
STEP	*Action*	*Expected Observation*
1	~~Navigate menu to find the Wi-Fi options~~	~~A list of options relating to Wi-Fi is listed~~
2	Enabled Wi-Fi	A list of available networks should be listed If a previously connected network is available, the device will automatically connect to it

Designs High-level

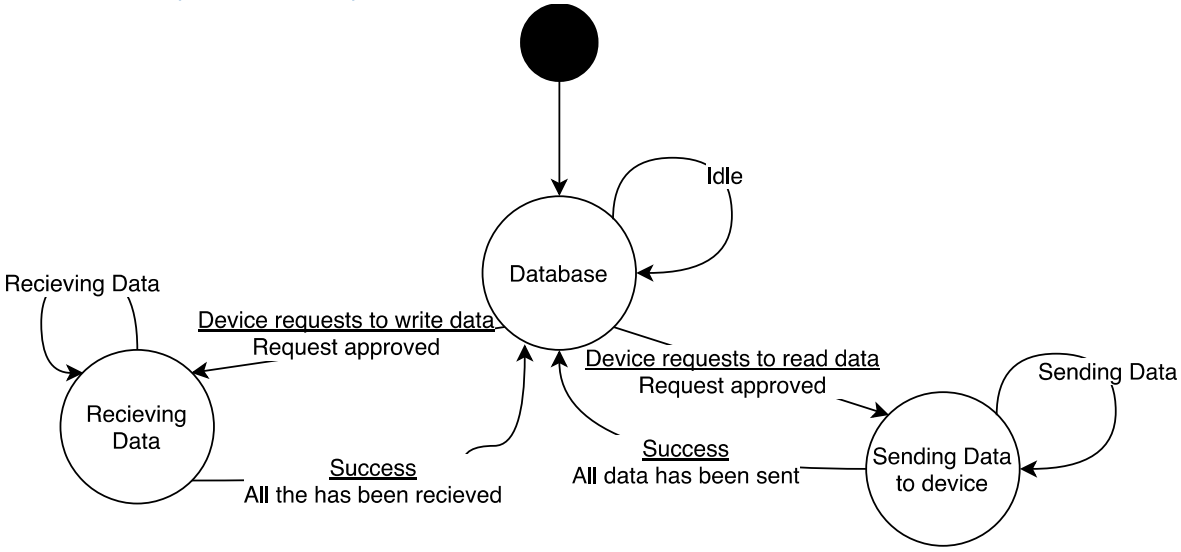
~~Screen (Huseyin Sert)~~



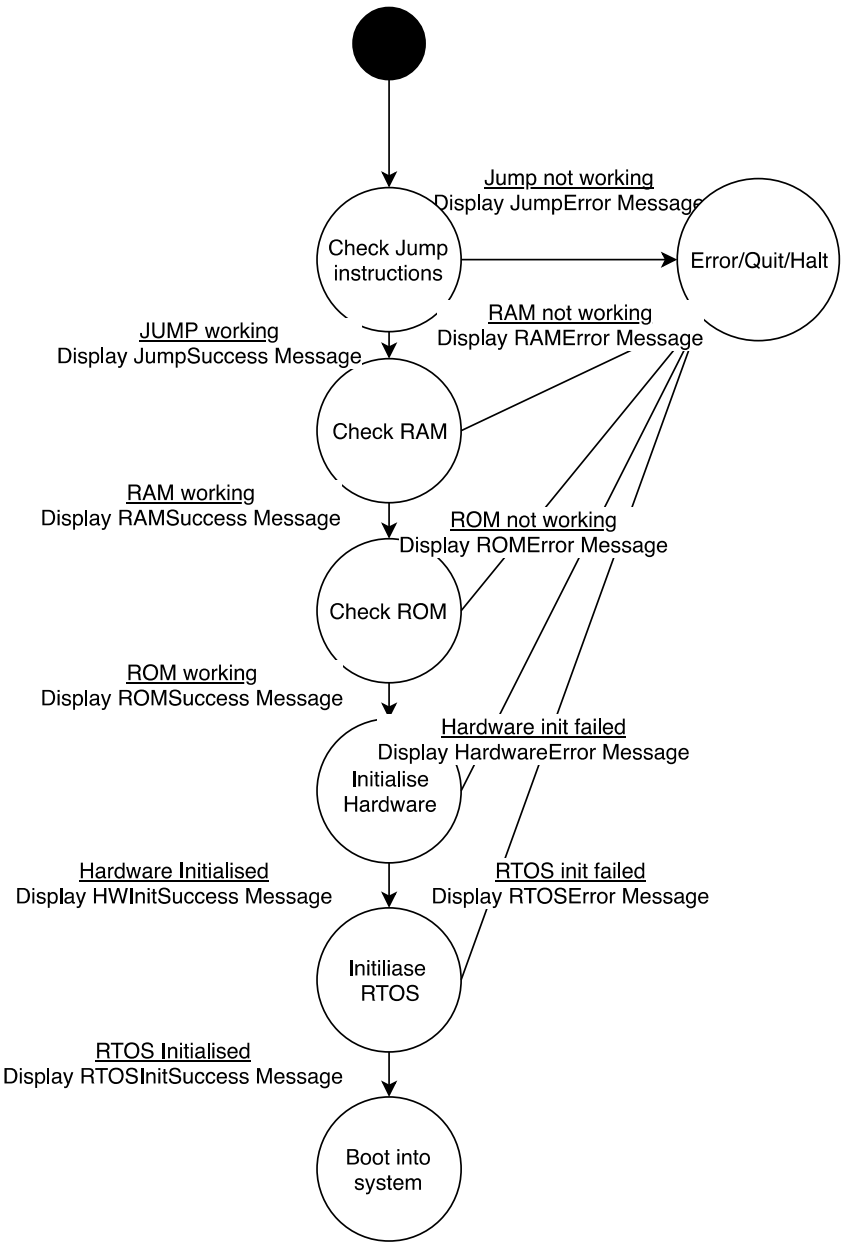
~~Menu – Generic (Jesse Batt)~~



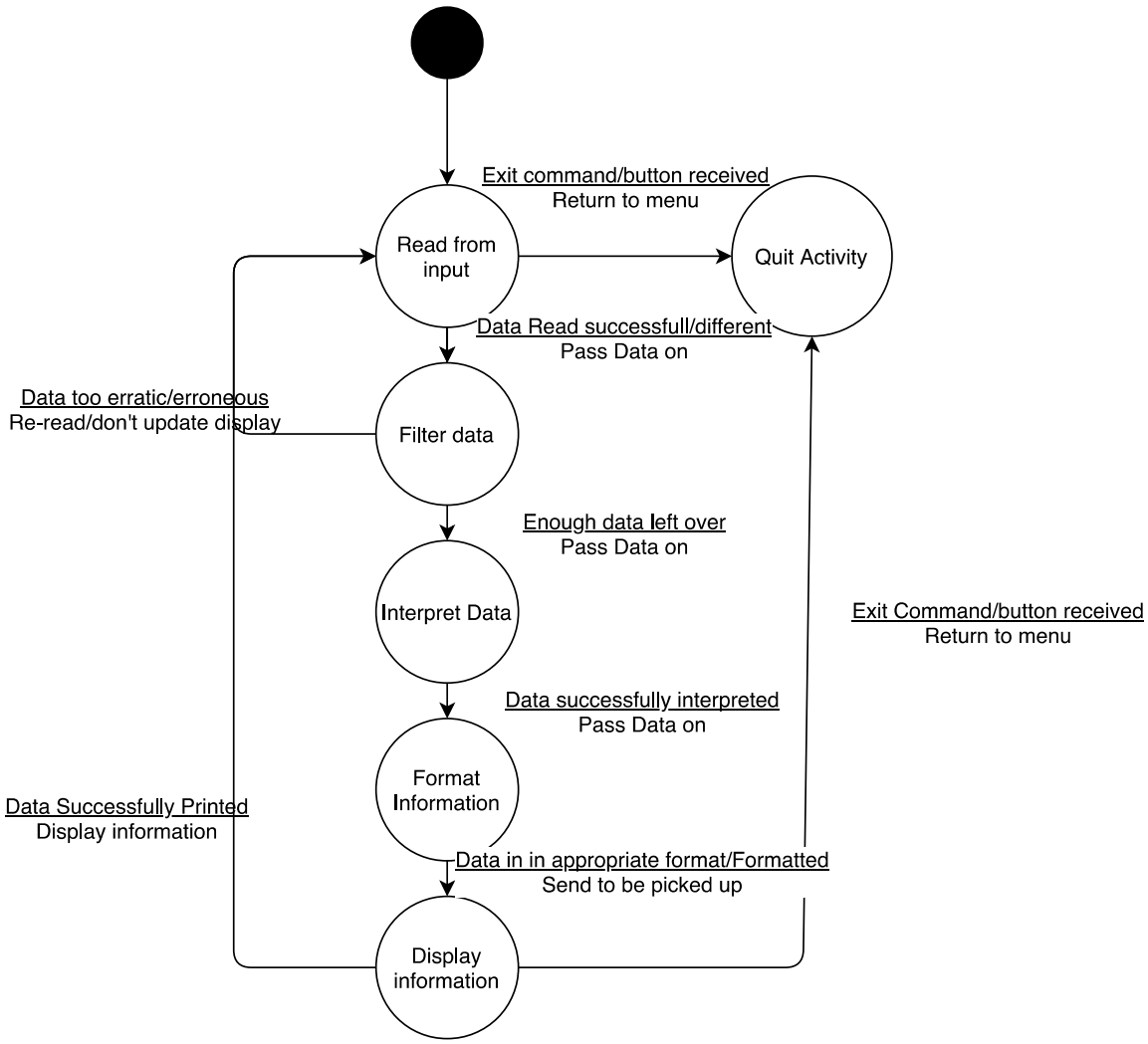
Database (Jesse Batt)



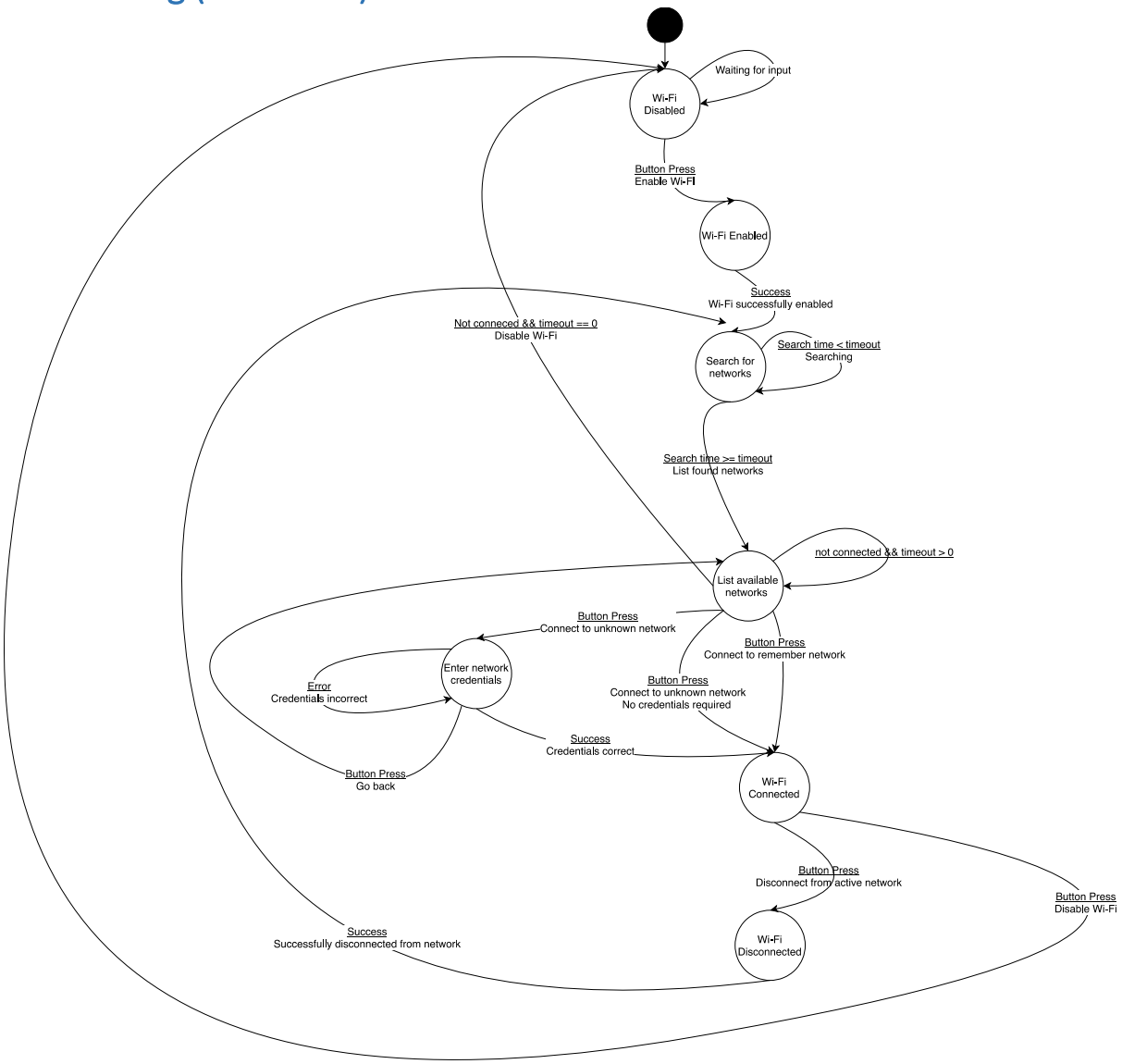
POST / Power On (Harrison James Marcks)



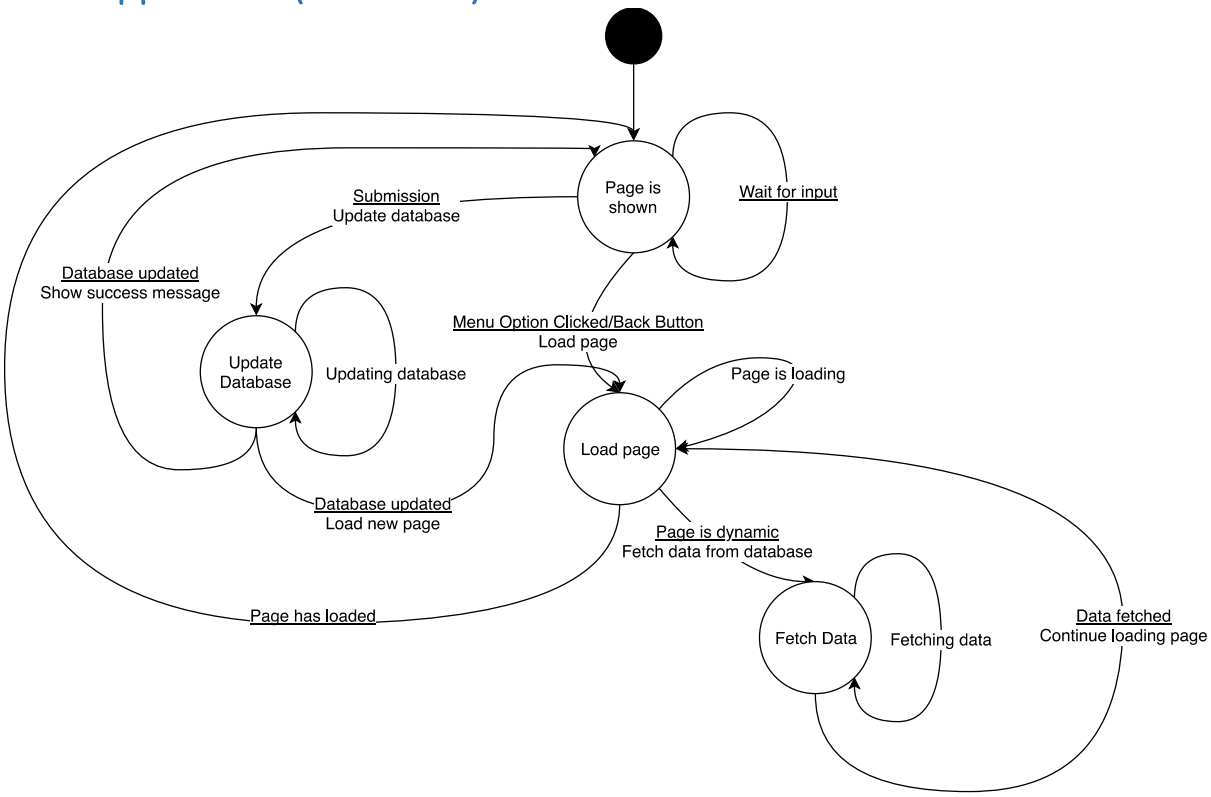
BPM Activity (Harrison James Marcks)



Networking (Dan Steer)

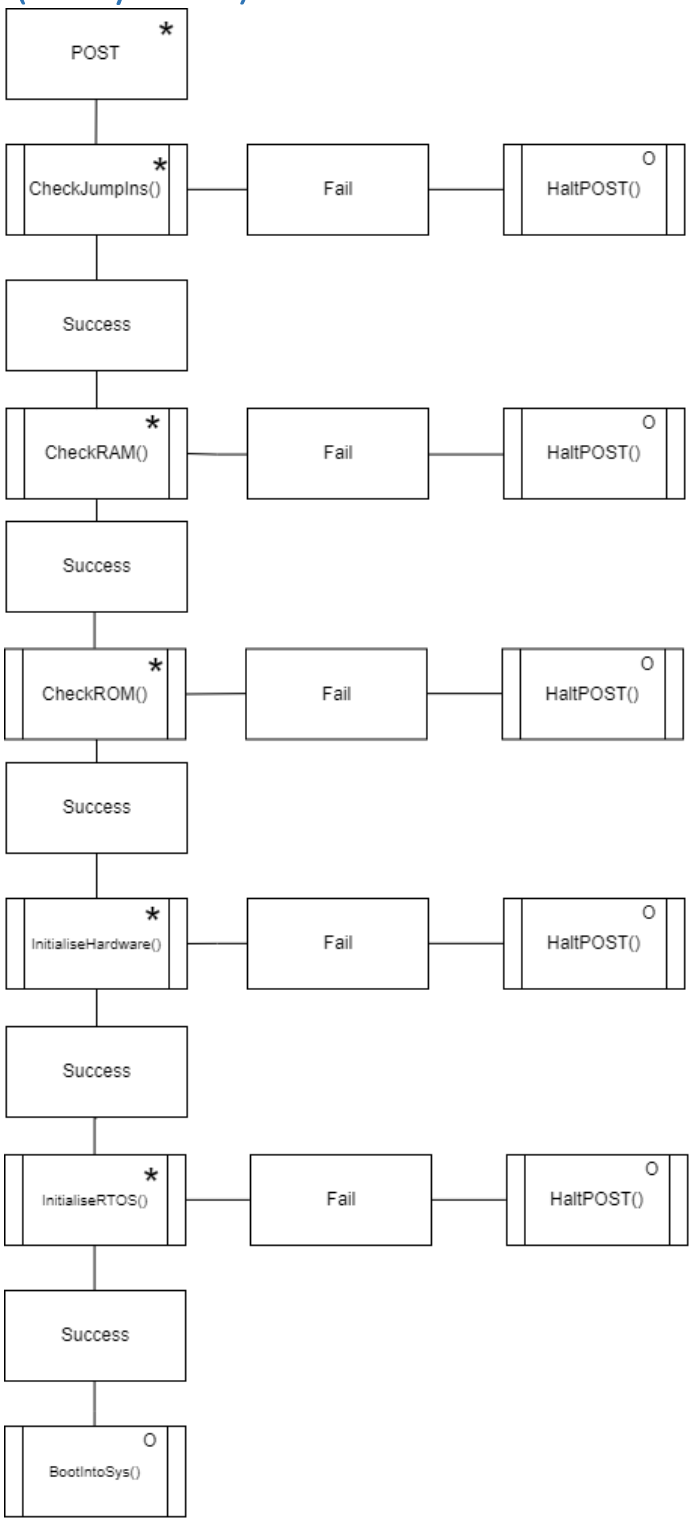


Web Application (Dan Steer)

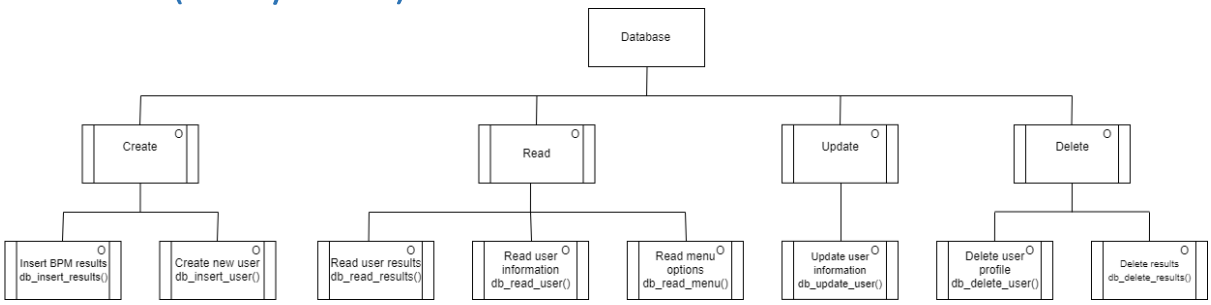


Designs Low-level

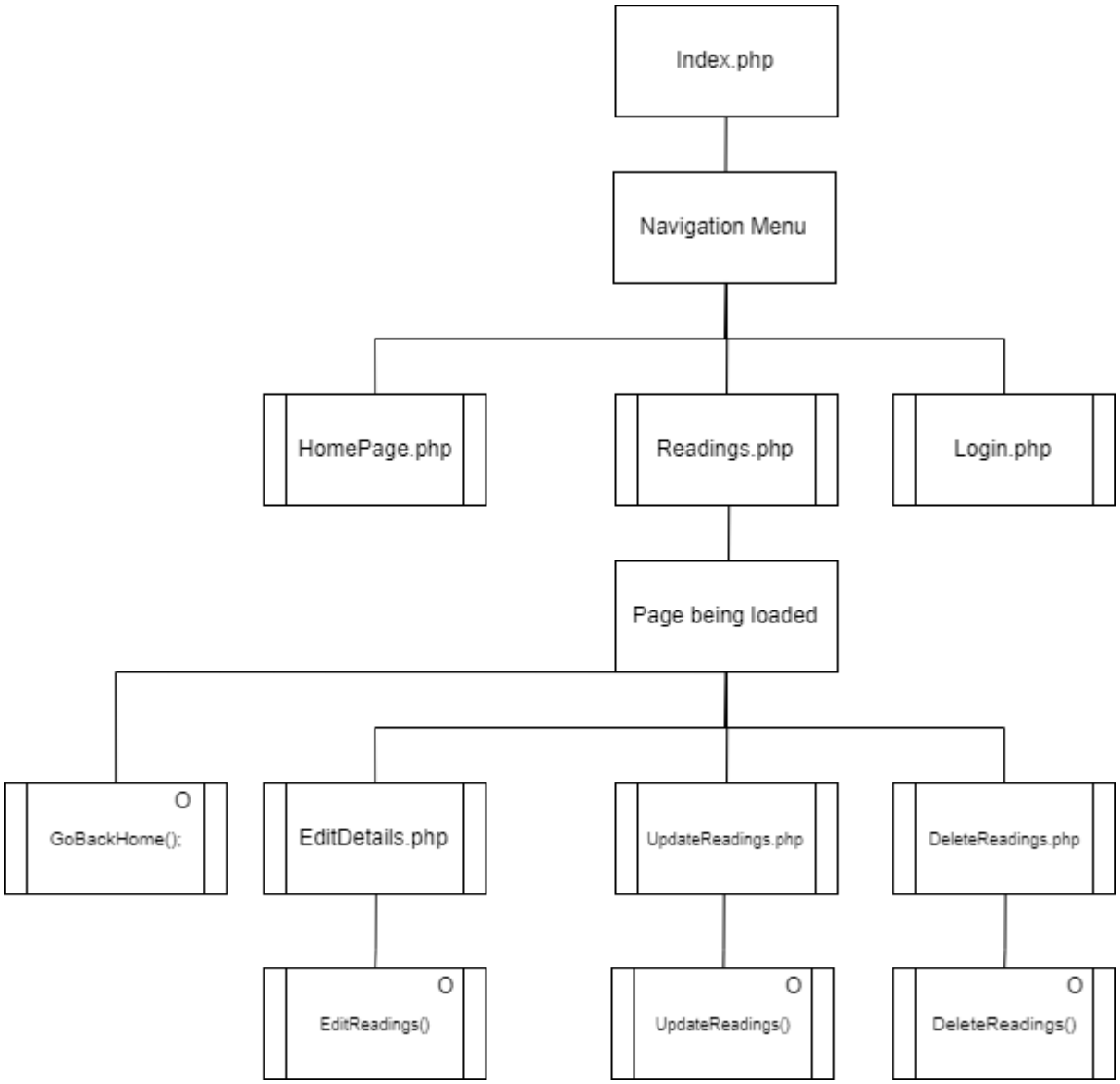
Post/Power ON (Huseyin Sert)



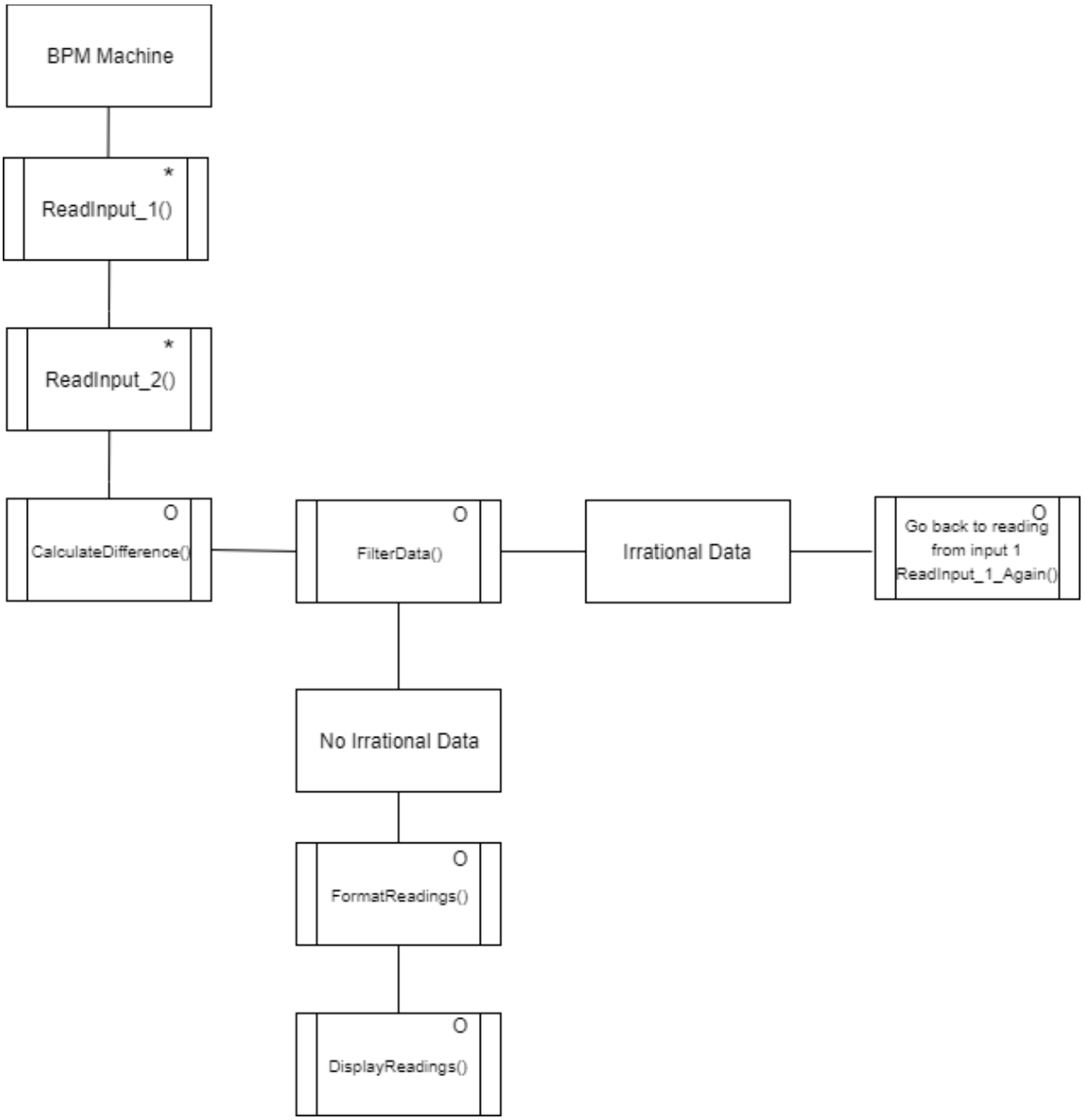
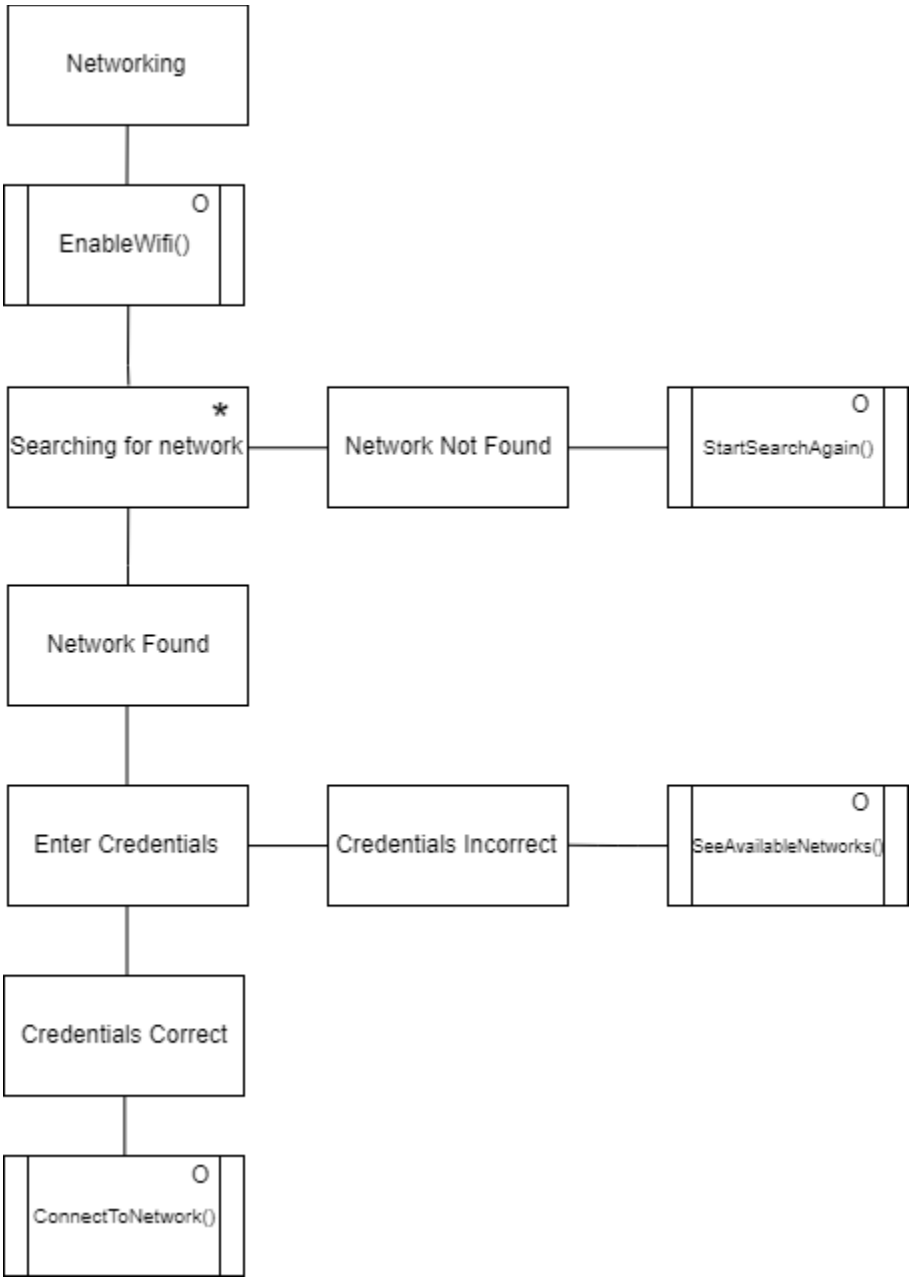
Database (Huseyin Sert)



Web Application (Huseyin Sert)



BPM Activity (Huseyin Sert)



Networking (Huseyin Sert)