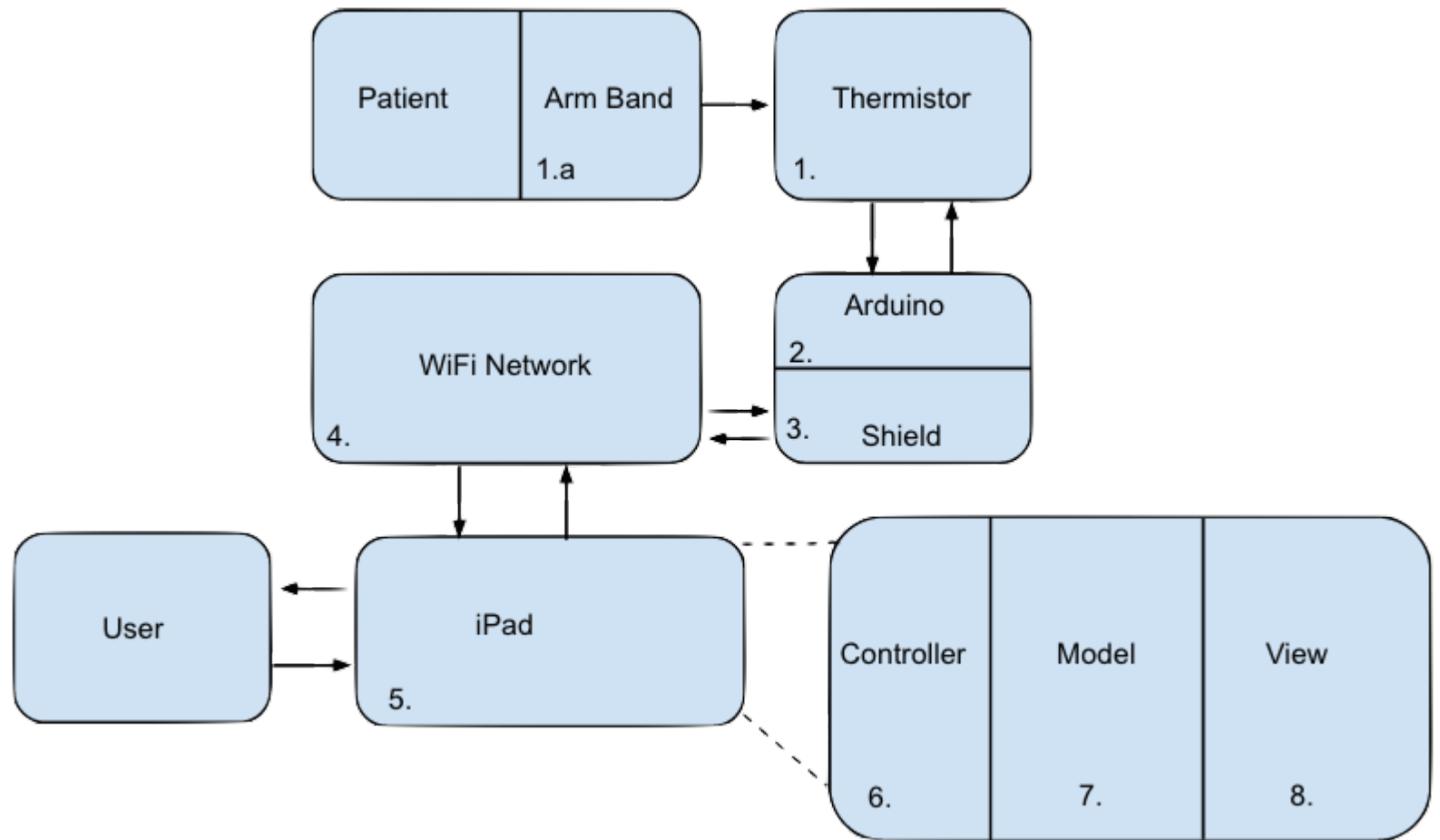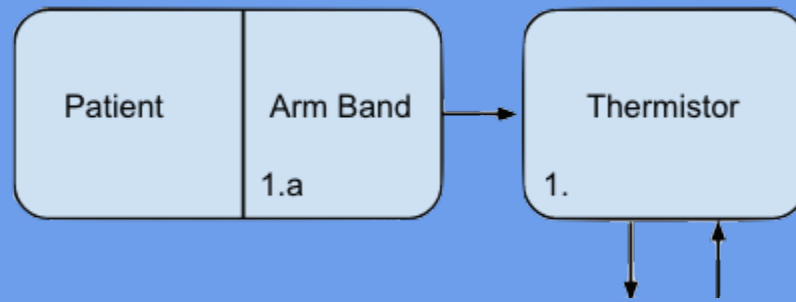# Mobile Medical Devices - Thermometer Module Diagram
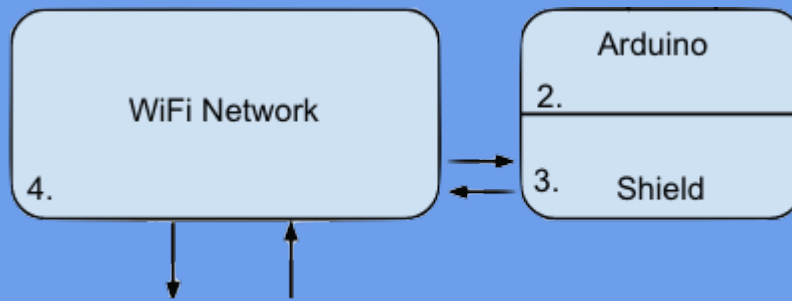
Andrew Carp, Cody Chen, Inbar Fried, Michael Nuzzolo, Emily Quigley

| Patient | Arm Band |
| | 1.a |

Thermistor
1.

WiFi Network
4.

Arduino
2.
3. Shield

User

iPad
5.

| Controller | Model | View |
| 6. | 7. | 8. |

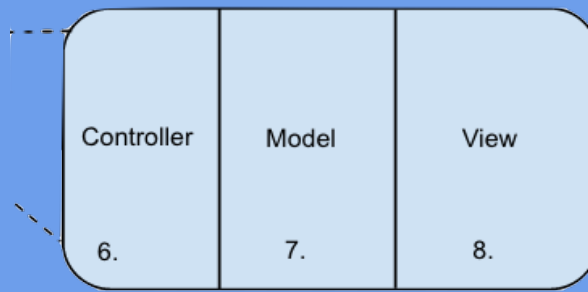| Task	Duration	Deliverable	Team Member
1. Armband design	.5 Hr	Armband that can hold probe & arduino	CC AC
a. Thermistor Probe	.5 Hr	Probe reads temperature and sends to arduino	CC AC

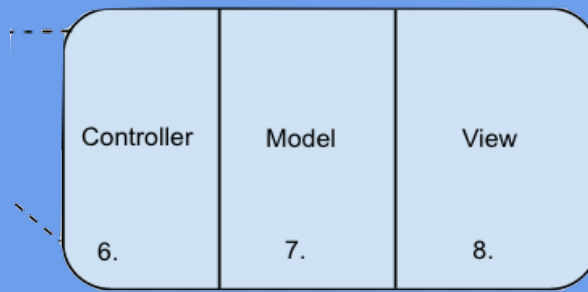| Task		Duration	Deliverable	Team Member
2.	Arduino	2-3 Hr	Ports data	CC AC
a.	Reads analog data from Thermistor	.5 Hr	Reads analog voltage on arduino input pin	CC AC
b.	Makes A/D conversion	.5 Hr	Converts from analog (0V to 5V) to digital (0 to 1023)	CC AC
c.	Outputs digital data to wifi shield	1 Hr	Port digital data from arduino to output pin connecting to wifi shield	CC AC
3.	Wifi Shield	.2 hrs	Connects to network	IF, AC
4.	Network	.3 hrs	Connect wifi shield on arduino to iPad	IF
a.	Connecting to iPad	.5 hrs	Successfully execute HTTP requests between iPad and wifi shield	IF
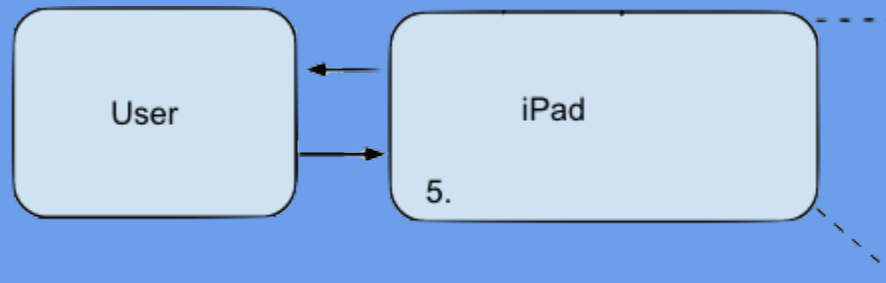
Task	Duration	Deliverable	Team Member
5. iPad		Application can be run on iPad	
a. App Design	1 hr	Working mockup of app layout	CC EQ
b. App Programming (See 6, 7, 8)	1-4 hrs	Model-View-Controller function together	IF, AC, MN
c. App Testing	2 hrs	App functions correctly	CC, EQ, AC, IF, MN
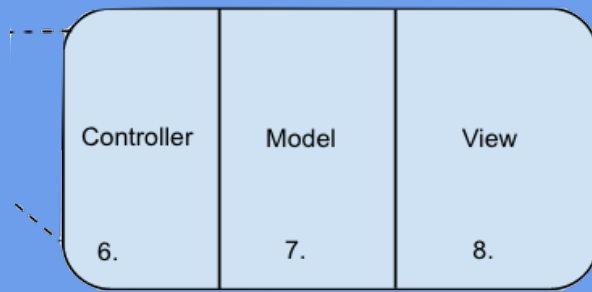
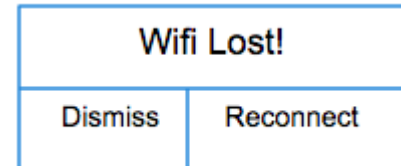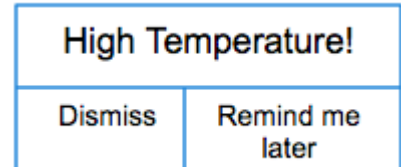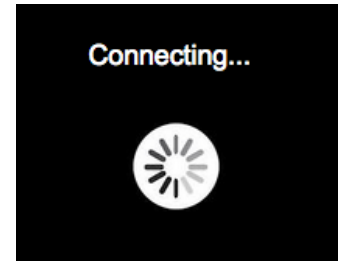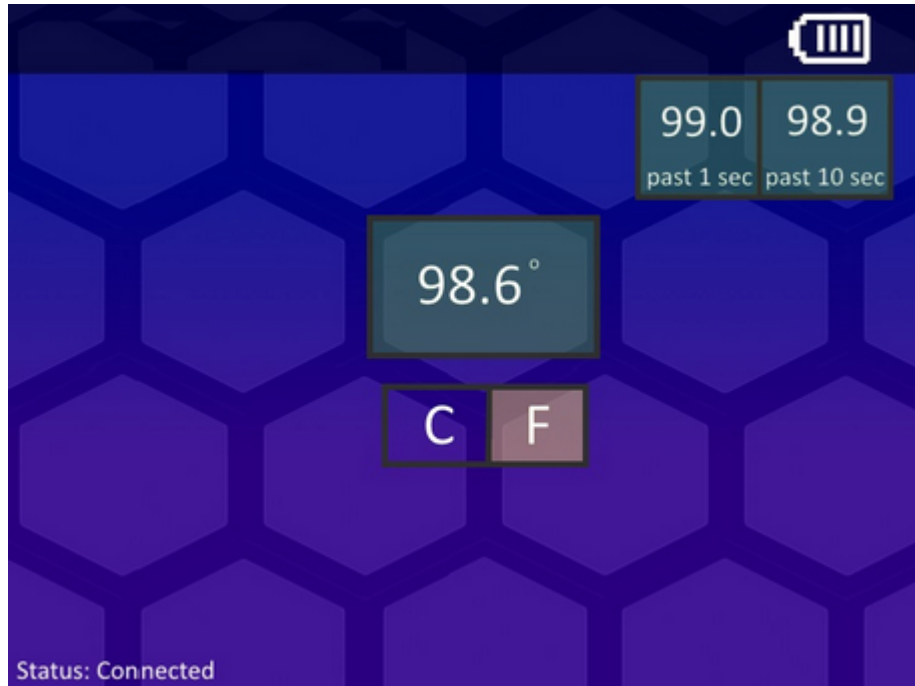| Task	Duration	Deliverable	Team Member
6. Controller	-	-	-
a. User Inputs	2 hrs	Inputs from the View	MN
i. F/C toggle	.5 hrs	Tells model to convert present value and averages before sending them	MN
ii. Alarm Reset	1 hr	Tells model alarm reset has been set	MN, IF

	Controller	Model	View
	6.	7.	8.

Task	Duration	Deliverable	Team Member
7. Model	-	-	-
a. Reading in data	1 hr	Reads data in from iPad wifi connection	MN, IF
b. Converting digital data	.5 hrs	Converts digital values 0 - 1023 to degrees F	MN, IF
d. F/C conversion	.1 hrs	Converts present temperature, 1 second average, 10 second average	MN, IF
e. Alarm detection	2 hrs	Waits for temperature > 90 degrees F or wifi lost connection, if true, sets alarm	EQ

Task	Duration	Deliverable	Team Member
8. View	-	-	-
a. Wifi Connection status	1 hr	App opens with status spinner for wifi connection search overlaying main page	EQ
b. Main temp display	3 hrs	Current temp, 1sec avg, and 10sec avg are updating until wifi lost or app closed	EQ
c. Wifi connection lost alarm overlay	1 hr	Displays popup box when app loses wifi connection	EQ
d. High temp alarm overlay	1 hr	Displays popup box when temp > 90° F	EQ
e. F/C Toggle	.5 hrs	Temp visually switches with F/C toggle	EQ

8. View cont'd

Task	Duration	Deliverable	Team Member
9. Price/Financials	-	Final price of thermometer	-
a. Production Costs	0.25 hrs	Calculate product costs	AC
b. Final Price	0.05 hrs	Calculate selling price of product	AC
c. Financial Statement	0.5 hrs	Configure financials in spreadsheet	AC