

iSee

Smart Glasses

Donavie Ordonez
Kizar Cassiere
Samuel Flinkfelt
Dylan Nguyen

CSCP 462-01 Software Design
Dr. Swayam Pati
Due Date: 12/7/2020

1. Project Charter

Project Charter																									
Project Name	CPSC 462	Date Chartered	9/5/2020	Revision Number	4	Revision Date	10/18/2020																		
iSee Smart Glasses																									
Project Statement - A brief description of the problem or business case The company, Fullerton SW company, initiated a project that builds a mobile application titled Fullerton Wear, running on the mobile environment. Our team choose glasses of a potentially wearable device collaboratively with a hardware company, and our team will build its software part. Our team must analyze, design and code the target system using UP and OOAD.				Goal Statement - Define the mission and the target of the project To create a glasses product that is technology advanced to help aid the user in their daily life. Create something that a user can benefit from, checking heart, glucose, calling emergency contacts or just benefit from in your daily life.																					
Project Leader Donavie Ordonez		Project Approach Fullerton SW company is approaching this project with an agile process. All team members will be working on it sequentially.																							
Project Team <table border="1"> <tr> <th>Name</th> <th>Role/Responsibilities</th> </tr> <tr> <td>Samuel Flinkfelt</td> <td>Refer to Project Plan: #s 7, 10, 11, 12, 24, 25, 28, 29, 41</td> </tr> <tr> <td>Kizar Cassiere</td> <td>Refer to Project Plan: #s 8, 13, 14, 15, 32, 37, 40</td> </tr> <tr> <td>Dylan Nguyen</td> <td>Refer to Project Plan: #s 9, 16, 17, 18, 36, 42</td> </tr> <tr> <td>Donavie Ordonez</td> <td>Refer to Project Plan: #s 1, 6, 21, 22, 23, 35, 43, 44</td> </tr> <tr> <td>WHOLE TEAM COLLECTIVELY</td> <td>Refer to Project Plan: #s 2, 3, 4, 5, 18, 19, 26, 27, 28, 29, 30, 31, 33, 34</td> </tr> </table>		Name	Role/Responsibilities	Samuel Flinkfelt	Refer to Project Plan: #s 7, 10, 11, 12, 24, 25, 28, 29, 41	Kizar Cassiere	Refer to Project Plan: #s 8, 13, 14, 15, 32, 37, 40	Dylan Nguyen	Refer to Project Plan: #s 9, 16, 17, 18, 36, 42	Donavie Ordonez	Refer to Project Plan: #s 1, 6, 21, 22, 23, 35, 43, 44	WHOLE TEAM COLLECTIVELY	Refer to Project Plan: #s 2, 3, 4, 5, 18, 19, 26, 27, 28, 29, 30, 31, 33, 34	Support Personnel <table border="1"> <tr> <th>Name</th> <th>Role</th> </tr> <tr> <td>Dr. Swayam Pati</td> <td>Project Manager</td> </tr> </table>						Name	Role	Dr. Swayam Pati	Project Manager		
Name	Role/Responsibilities																								
Samuel Flinkfelt	Refer to Project Plan: #s 7, 10, 11, 12, 24, 25, 28, 29, 41																								
Kizar Cassiere	Refer to Project Plan: #s 8, 13, 14, 15, 32, 37, 40																								
Dylan Nguyen	Refer to Project Plan: #s 9, 16, 17, 18, 36, 42																								
Donavie Ordonez	Refer to Project Plan: #s 1, 6, 21, 22, 23, 35, 43, 44																								
WHOLE TEAM COLLECTIVELY	Refer to Project Plan: #s 2, 3, 4, 5, 18, 19, 26, 27, 28, 29, 30, 31, 33, 34																								
Name	Role																								
Dr. Swayam Pati	Project Manager																								
Project Approach Work iteratively, commence progression with scrum meetings. Work in phases, adapting to any changes that occur. This will be an Agile method of software design, weekly scrum meetings, keeping each other up to date. There will be one Scrum Master who will communicate with the product owner.				Project Difficulties The Documentation for the product software and hardware. Integration of the Glasses with the phone and the Application base program. Creating a functioning prototype of the product to be slim, have all the capabilities and battery life.																					
Project Artifacts <table border="1"> <tr> <td>Functional and Non Functional Requirements</td> <td>State Chart Diagram</td> </tr> <tr> <td>Architecture Diagram</td> <td>Activity Diagram</td> </tr> <tr> <td>Use Cases and Use Case Diagram</td> <td>Conceptual Class Diagram</td> </tr> <tr> <td>Context Diagram</td> <td>Domain Model</td> </tr> <tr> <td>Sequence Diagram</td> <td>Class Diagram</td> </tr> <tr> <td>Package Diagram</td> <td>Object Diagram</td> </tr> </table>				Functional and Non Functional Requirements	State Chart Diagram	Architecture Diagram	Activity Diagram	Use Cases and Use Case Diagram	Conceptual Class Diagram	Context Diagram	Domain Model	Sequence Diagram	Class Diagram	Package Diagram	Object Diagram	Timelines <table border="1"> <tr> <td>Inception Phase: Iteration 1: 9/5/2020 - 9/12/2020</td> </tr> <tr> <td>Elaboration Phase: Iteration 1: 9/12/2020 - 10/3/2020</td> </tr> <tr> <td>Elaboration Phase: Iteration 2: 10/3/2020 - 10/17/2020</td> </tr> </table>				Inception Phase: Iteration 1: 9/5/2020 - 9/12/2020	Elaboration Phase: Iteration 1: 9/12/2020 - 10/3/2020	Elaboration Phase: Iteration 2: 10/3/2020 - 10/17/2020			
Functional and Non Functional Requirements	State Chart Diagram																								
Architecture Diagram	Activity Diagram																								
Use Cases and Use Case Diagram	Conceptual Class Diagram																								
Context Diagram	Domain Model																								
Sequence Diagram	Class Diagram																								
Package Diagram	Object Diagram																								
Inception Phase: Iteration 1: 9/5/2020 - 9/12/2020																									
Elaboration Phase: Iteration 1: 9/12/2020 - 10/3/2020																									
Elaboration Phase: Iteration 2: 10/3/2020 - 10/17/2020																									
Project Scope Create a smart glasses device that can perform various voice activated functions and physical button functions.				Other Project Information - e.g. project description, assumptions, constraints, risks, deliverables, issues, roadblocks In the project, Fullerton SW company is developing smart glasses called iSee Smart Glasses. We plan on completing inception phase in one iteration, elaboration phase in two iterations, construction phase in four iterations and transition phase in 2 iterations. Some constraints are timing for project completion, and the high cost of the project.																					
Start Date				Estimate Completion Date																					
				9/5/2020	Part 1: 10/19/2020	Part 2: 12/7/2020																			
Project Milestones <table border="1"> <tr> <th>Description:</th> <td>1</td> <td>2</td> <td>3</td> <td>4</td> <td>5</td> </tr> <tr> <td>Inception Iteration 1 Completed</td> <td></td> <td>Elaboration Iteration 1 Completed</td> <td></td> <td></td> <td></td> </tr> <tr> <th>Date:</th> <td>9/12/2020</td> <td></td> <td>10/3/2020</td> <td>10/17/2020</td> <td></td> </tr> </table>		Description:	1	2	3	4	5	Inception Iteration 1 Completed		Elaboration Iteration 1 Completed				Date:	9/12/2020		10/3/2020	10/17/2020							
Description:	1	2	3	4	5																				
Inception Iteration 1 Completed		Elaboration Iteration 1 Completed																							
Date:	9/12/2020		10/3/2020	10/17/2020																					
Signatures - The signatures of the people below document approval of the formal Project Charter <table border="1"> <tr> <th>Project Leader:</th> <td>Donavie Love Ordonez</td> <th>Signature</th> <td>Date</td> </tr> <tr> <th>Project partner:</th> <td>Samuel Flinkfelt</td> <td></td> <td>9/5/2020</td> </tr> <tr> <th>Project partner:</th> <td>Dylan Nguyen</td> <td></td> <td>9/5/2020</td> </tr> <tr> <th>Project partner:</th> <td>Kizar Cassiere</td> <td></td> <td>9/5/2020</td> </tr> </table> <p>The Project Leader is empowered by this charter to proceed with the project as outlined above</p>								Project Leader:	Donavie Love Ordonez	Signature	Date	Project partner:	Samuel Flinkfelt		9/5/2020	Project partner:	Dylan Nguyen		9/5/2020	Project partner:	Kizar Cassiere		9/5/2020		
Project Leader:	Donavie Love Ordonez	Signature	Date																						
Project partner:	Samuel Flinkfelt		9/5/2020																						
Project partner:	Dylan Nguyen		9/5/2020																						
Project partner:	Kizar Cassiere		9/5/2020																						

2. Table of Contents

1. Project Charter	1
2. Table of Contents	2
3. Revision History	5
4. Meeting Minutes	8
Meeting #1	8
Meeting #2	9
Meeting #3	10
Meeting #4	11
Meeting #5	11
Meeting #6	12
Meeting #7	13
5. Project Plan	14
6. Iteration 1	15
 6.1. Inception 1	15
6.1.1. UP Phase	15
6.1.2. Evolutionary Requirements In Iterative Methods	15
6.1.3. UP Artifact Influence	16
6.1.4. Matrix Table	17
6.1.5. Vision and Business Case	18
6.1.5.1. Vision Statement	18
6.1.5.2. Business Model	18
6.1.5.3. Business Rules	18
6.1.5.4. Problem Statement	20
6.1.5.5. Risk and Prevention Plan	20
6.1.5.6. Initial Requirements	20
6.1.5.7. Budget	20
6.1.5.8. Cost and Pricing	20
6.1.5.9. License and Installation	20
6.1.5.10. Functional Requirements	21
6.1.5.11. Non Functional Requirements	22
6.1.5.12. Prototyping Responsibilities	23
6.1.6. Goals and Constraints	24
6.1.6.1. Inception Phase Goals	24

6.1.6.2. Elaboration Phase Goals	24
6.1.6.3. Constraints	24
6.2 Elaboration 1	25
6.2.1. Architecture Diagram	25
6.2.2 Use Cases	26
6.2.2.1 Black Box	26
6.2.2.2 Brief Use Case	28
6.2.2.3 Casual Use Case	30
6.2.2.4. Fully Dressed Use Case	33
6.2.2.5. Operation Use Case	40
6.2.2.6. Contracts	41
6.2.3. Context Diagram	52
6.2.4. Use Case Diagram of Entire System	53
6.2.5. Sequence Diagrams	54
6.2.6 Package Diagram	57
6.2.7. State Chart Diagram	58
6.2.8. Activity Diagram	59
6.2.9. Conceptual Class Diagram	60
6.2.10. Domain Model	61
6.2.11. Class Diagram	62
6.2.12. Object Diagram	63
7. Iteration 2	64
7.1 Revision History	64
7.2 Meeting Minutes	66
Meeting #8	66
Meeting #9	67
Meeting #10	67
Meeting #11	68
Meeting #12	68
7.3. Project Plan	70
7.4 Inception 2	71
7.4.1 Vision and Business Case	71
7.4.1.1 Vision Statement	71
7.4.1.2 Budget	71
7.5. Elaboration 2	71
7.5.1 Use Cases	71
7.5.1.1 Operation Use Case	71

7.5.2. Forward Traceability Matrix	79
7.5.3. Architectural Layer Refinement	81
7.5.4. CRC Cards	82
7.5.5. Sequence Diagrams	85
7.5.6. Interaction Diagram	88
7.5.7. Component Diagram	89
7.5.8. Package Diagram	90
7.5.9. Activity Diagram	91
7.5.10. State Chart Diagram	95
7.5.11. Class Diagram	96
7.5.12. Design Class Diagram	97
7.5.13. Class Diagram (GRASP)	98
7.5.14. Object Diagram	99
7.5.15. Deployment Diagram	100
7.5.16. Reverse Traceability Matrix	101
8. Other Requirements	102
8.1 Supplementary Specification	102
8.2 Glossary	106

3. Revision History

Task-Version Number	Team Member	Action Performed	Date Completed
Project Charter - V1	All	Updated information	9/12/2020
Table of Contents - V1	All	Updated pages	9/12/2020
Revision History - V1	All	Updated information	9/12/2020
Meeting Minutes - V1	Donavie Ordonez	Added meeting details	9/4/2020
Project Plan - V1	All	Delegated more tasks to team members	9/12/2020
UP Phase - V1	Donavie Ordonez	Updated UP Phase	9/12/2020
Evolutionary Requirements in Iterative Methods - V1	Samuel Flinkfelt	Updated information	9/12/2020
UP Artifact Influence	Kizar Cassiere	Updated diagram	9/12/2020
Matrix Table -V1	Dylan Nguyen	Updated table	9/12/2020
Vision Statement - V1	Samuel Flinkfelt	Updated statement	9/12/2020
Business Model -V1	Samuel Flinkfelt	Updated information	9/12/2020
Business Rules - V1	Samuel Flinkfelt	Updated information	9/12/2020
Problem Statement - V1	Kizar Cassiere	Updated information	9/12/2020
Risk and Prevention Plan - V1	Kizar Cassiere	Updated Information	9/12/2020
Initial Requirements - V1	Kizar Cassiere	Updated information	9/12/2020
Budget - V1	Dylan Nguyen	Updated information	9/12/2020
Cost and Pricing - V1	Dylan Nguyen	Updated information	9/12/2020
License and Installation - V1	Dylan Nguyen	Updated information	9/12/2020

FR - V1	All	Updated FRs	9/12/2020
NFR - V1	All	Updated NFRs	9/12/2020
Prototyping Responsibilities - V1	Donavie Ordonez	Updated information	9/12/2020
Inception Phase Goals - V1	Donavie Ordonez	Updated information	9/12/2020
Elaboration Phase Goals - V1	Donavie Ordonez	Updated information	9/12/2020
Constraints - V1	Samuel Flinkfelt	Updated information	9/12/2020
Architecture Diagram - V1	Samuel Flinkfelt	Updated diagram	10/17/2020
Black Box - V1	All	Updated use cases	10/2/2020
Brief Use Case - V1	All	Updated details	10/2/2020
Casual Use Case - V1	All	Updated details	10/2/2020
Operation Use Case - V1	All	Updated operations	10/2/2020
Contracts - V1	All	Updated details	10/2/2020
Context Diagram - V1	Kizar Cassiere	Updated diagram	10/3/2020
Use Case Diagram - V1	All	Updated diagram	10/3/2020
Sequence Diagram - V1	All	Added more diagrams	10/3/2020
Package Diagram - V1	Donavie Ordonez	Updated diagram	10/16/2020
State Chart Diagram -V1	Dylan Nguyen	Updated diagram	10/3/2020
Activity Diagram -V1	Kizar Cassiere	Updated diagram	10/3/2020
Conceptual Class Diagram - V1	Samuel Flinkfelt	Updated diagram	10/3/2020
Domain Model - V1	Kizar Cassiere	Updated diagram	10/3/2020

Class Diagram - V1	Samuel Flinkfelt	Updated diagram	10/3/2020
Object Diagram - V1	Dylan Nguyen	Updated diagram	10/3/2020
Supplementary Specification - V1	Donavie Ordonez	Updated information	10/17/2020
Glossary - V1	Donavie Ordonez	Updated terms	10/17/2020
Table of Contents -V2	All	Updated pages	10/3/2020
Revision History - V2	All	Updated information	10/3/2020
Meeting Minutes - V2	Donavie Ordonez	Added meeting details	9/11/2020
Project Plan - V2	All	Added dependencies	10/3/2020
Matrix Table -V2	Dylan Nguyen	Updated table	10/16/2020
Vision Statement -V2	Samuel Flinkfelt	Updated statement	10/16/2020
Functional Requirements - V2	All	Updated FRs	10/3/2020

4. Meeting Minutes

Meeting #1

Location: Discord

Date: 9/4/2020

Time: 12 PM

Attendees: Kizar Cassiere, Samuel Flinkfelt, Donavie Ordonez

Agenda items

1. Discuss Project 1 and 2 requirements
2. Create functional and non-functional requirements
3. Sign up for Visual Paradigm online
4. Create the class and sequence diagrams

Action items	Owner(s)	Deadline	Status
Create Class Diagram	Samuel	9/5/2020	In Progress
Create Sequence Diagram 1	Kizar	9/5/2020	Complete
Create Sequence Diagram 2	Donavie	9/5/2020	Complete

Meeting #2

Location: Discord

Date: 9/11/2020

Time: 12 PM

Attendees: Kizar Cassiere, Samuel Flinkfelt, Dylan Nguyen, Donavie Ordonez

Agenda items

1. Catch up Dylan on project requirements
2. Create Use Case stories for functional requirements
3. Update Trello

Action items	Owner(s)	Deadline	Status
Create Use Case Stories	All	9/11/2020	Complete
Create Object Diagram	Dylan	9/11/2020	In Progress
Create State Chart Diagram	All	9/11/2020	In Progress
Create Activity Diagram	Kizar	9/11/2020	Complete
Create Collaboration Diagram	Dylan	9/11/2020	In Progress

Create Deployment Diagram	Donavie	9/11/2020	In Progress
Create Component Diagram	Samuel	9/11/2020	In Progress

Meeting #3

Location: Discord

Date: 9/18/2020

Time: 12 PM

Attendees: Kizar Cassiere, Samuel Flinkfelt, Dylan Nguyen, Donavie Ordonez

Agenda items

1. Commence creating the Use Case Diagram
2. Clarify the usage of buttons on the iSee Smart Glasses
3. Complete project report written portions

Action items	Owner(s)	Deadline	Status
Create Use Case Diagram	All	9/18/2020	Complete
Clarify iSee Smart Glasses button functions	All	9/18/2020	Complete

Begin all written portions for Project Report	All	10/10/2020	In progress
---	-----	------------	-------------

Meeting #4

Location: Discord

Date: 9/25/2020

Time: 1 PM

Attendees: Kizar Cassiere, Samuel Flinkfelt, Dylan Nguyen, Donavie Ordóñez

Agenda items

1. Continue working on written portion of report and create diagrams

Action items	Owner(s)	Deadline	Status
Continue working on written portions and diagrams	All	10/10/2020	In Progress

Meeting #5

Location: Discord

Date: 10/1/2020

Time: 1 PM

Attendees: Kizar Cassiere, Samuel Flinkfelt, Dylan Nguyen, Donavie Ordóñez

Agenda items

1. Continue working on written portion of report and create diagrams

Action items	Owner(s)	Deadline	Status
Continue working on written portions and diagrams	All	10/10/2020	In Progress

Meeting #6

Location: Discord

Date: 10/9/2020

Time: 1 PM

Attendees: Kizar Cassiere, Samuel Flinkfelt, Dylan Nguyen, Donavie Ordóñez

Agenda items

1. Continue working on written portion of report and create diagrams

Action items	Owner(s)	Deadline	Status

Continue working on written portions and diagrams	All	10/19/2020	In Progress
---	-----	------------	-------------

Meeting #7

Location: Discord

Date: 10/16/2020

Time: 1 PM

Attendees: Kizar Cassiere, Samuel Flinkfelt, Dylan Nguyen, Donavie Ordonez

Agenda items

1. Continue working on written portion of report and create diagrams

Action items	Owner(s)	Deadline	Status
Finish working on written portions and diagrams	All	10/19/2020	Complete

5. Project Plan

The project plan was created on Google Sheets. Using this application, all team members are able to check and see their project responsibilities and insert when they've completed a certain task.

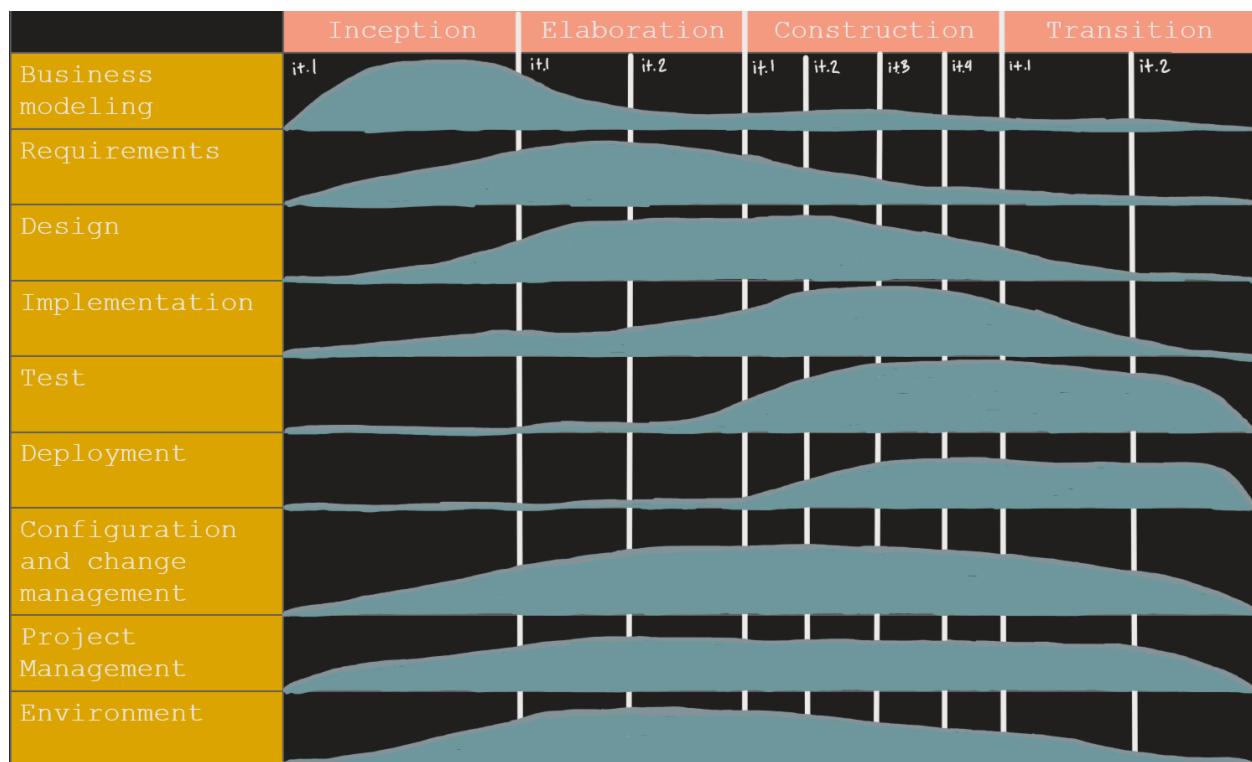
Serial #	Dependencies	Task Name	Sub Task	Output/Deliverable	Assigned To	Start Date	End Date	Completion
1		Public Charter		Project Charter	Donavie	9/5/2020	10/18/2020	100%
2		Table of Contents		Table of Contents	All	9/5/2020	10/18/2020	100%
3		Revision History		Revision History	All	9/5/2020	10/18/2020	100%
4		Meeting Minutes		Meeting Minutes	All	9/5/2020	10/18/2020	100%
5		Project Plan		Project Plan	All	9/16/2020	10/18/2020	100%
6		UP Phase		UP Phase Diagram and Description	Donavie	9/16/2020	10/18/2020	100%
7		Evolutionary Requirements in Iterative Methods		Evolutionary Requirements in Iterative Methods	Samuel	9/16/2020	10/18/2020	100%
8		UP Artifact Influence		UP Artifact Influence	Kizar	9/16/2020	10/18/2020	100%
9	33, 34, 35, 36, 37, 38, 39, 40, 41, 42	Matrix Table		Matrix Table	Dylan	9/16/2020	10/18/2020	100%
10		Vision Statement		Vision Statement	Samuel	9/21/2020	10/18/2020	100%
11		Business Model		Business Model	Samuel	9/21/2020	10/18/2020	100%
12		Business Rules		Business Rules	Samuel	9/21/2020	10/18/2020	100%
13		Problem Statement		Problem Statement	Kizar	9/16/2020	10/18/2020	100%
14		Risk and Prevention Plan		Risk and Prevention Plan	Kizar	9/16/2020	10/18/2020	100%
15		Initial Requirements		Initial Requirements	Kizar	9/16/2020	10/18/2020	100%
16		Budget		Budget	Dylan	9/16/2020	10/18/2020	100%
17		Cost and Pricing		Cost and Pricing	Dylan	9/16/2020	10/18/2020	100%
18		License and Installation		License and Installation	Dylan	9/16/2020	10/18/2020	100%
19		Functional Requirements		Function Requirements	All	9/5/2020	10/18/2020	100%
20		Non Functional Requirements		Non Fuctional Requirements	All	9/5/2020	10/18/2020	100%
21	19	Prototyping Responsibilities		Prototyping Responsibilities	Donavie	9/16/2020	10/18/2020	100%
22		Inception Phase Goals		Inception Phase Goals	Donavie	9/16/2020	10/18/2020	100%
23		Elaboration Phase Goals		Elaboration Phase Goals	Donavie	9/16/2020	10/18/2020	100%
24		Constraints		Constraints	Samuel	9/16/2020	10/18/2020	100%
25	19	Architecture Diagram		Architecture Diagram	Samuel	9/16/2020	10/18/2020	100%
26	19	Black Box		Black Box for all Functional Requirements	All	9/16/2020	10/18/2020	100%
27	26, 19	Brief Use Case		Brief Use Case	All	9/16/2020	10/18/2020	100%
28	27, 26, 19	Casual Use Case		Casual Use Case	All	9/16/2020	10/18/2020	100%
29	28, 27, 26, 19	Fully Dressed Use Case		Fully Dressed Use Case	All	9/16/2020	10/18/2020	100%
30	29, 28, 27, 26, 19	Operations Use Case		Operations Use Case	All	9/30/2020	10/18/2020	100%
31	30, 29, 28, 27, 26, 19	Contracts		Contracts	All	9/16/2020	10/18/2020	100%
32	31, 30, 29, 28, 27, 26, 19	Context Diagram		Context Diagram	All	9/2/2020	10/18/2020	100%
33	31, 30, 29, 28, 27, 26, 19	Use Case Diagram of Entire System		Use Case Diagram of Entire System	All	9/2/2020	10/18/2020	100%
34	25, 33, 31, 30, 29, 28, 27, 26, 19	Sequence Diagrams		Sequence Diagrams	All	9/5/2020	10/18/2020	100%
35	38, 37, 33, 25, 33, 31, 30, 29, 28, 27, 26, 19	Package Diagram		Package Diagram	Donavie	9/30/2020	10/18/2020	100%
36	33, 25, 33, 31, 30, 29, 28, 27, 26, 19	State Chart Diagram		State Chart Diagram	Dylan	9/11/2020	10/18/2020	100%
37	33, 25, 33, 31, 30, 29, 28, 27, 26, 19	Activity Diagram		Activity Diagram	Kizar	9/11/2020	10/18/2020	100%
38	33, 25, 33, 31, 30, 29, 28, 27, 26, 19	Component Diagram		Component Diagram	Samuel	9/30/2020	10/18/2020	100%
39	33, 25, 33, 31, 30, 29, 28, 27, 26, 19	Conceptual Class Diagram		Conceptual Class Diagram	Samuel	9/30/2020	10/18/2020	100%
40	37, 33, 25, 33, 31, 30, 29, 28, 27, 26, 19	Domain Model		Domain Model	Kizar	9/30/2020	10/18/2020	100%
41	38, 37, 33, 25, 33, 31, 30, 29, 28, 27, 26, 19	Class Diagram		Class Diagram	Samuel	9/5/2020	10/18/2020	100%
42	34, 38, 37, 33, 25, 33, 31, 30, 29, 28, 27, 26, 19	Object Diagram		Object Diagram	Dylan	9/11/2020	10/18/2020	100%
43		Supplementary Specification		Supplementary Specification	Donavie	9/16/2020	10/18/2020	100%
44		Glossary		Glossary	Donavie	9/16/2020	10/18/2020	100%

6. Iteration 1

6.1. Inception 1

6.1.1. UP Phase

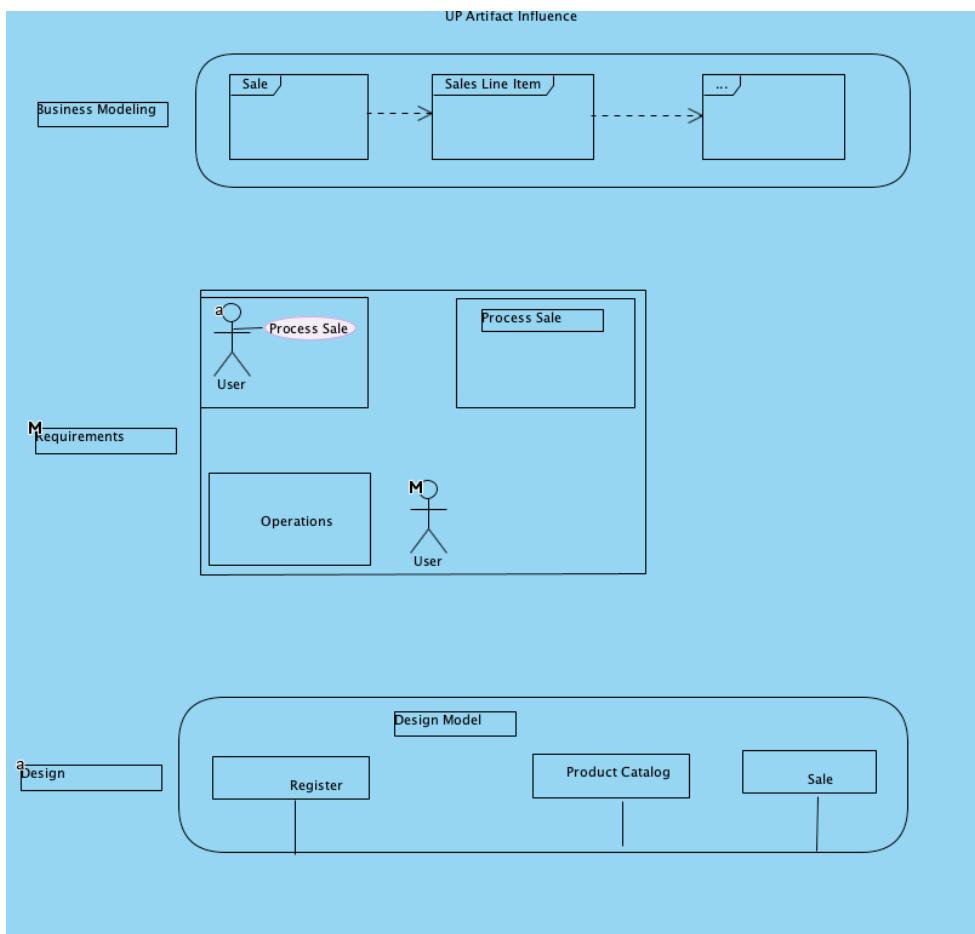
The following model is how we are going about developing the iSee Smart Glasses project. We intend to have one iteration for the inception phase, two iterations for the elaboration phase, four iterations for the construction phase, and two iterations for the transition phase.



6.1.2. Evolutionary Requirements In Iterative Methods

This is eight weeks for the first iteration, it will cover the inception and some of the elaboration phase out of the four iterations. After, we will be able to implement changes in the 2nd iteration, constantly changing and evolving the requirements throughout the whole project. We will be using Agile methods with scrum meetings.

6.1.3. UP Artifact Influence



6.1.4. Matrix Table

Use Case	UC Diagram	Seq. Diagram	Package Diagram	State Chart Diagram	Activity Diagram	Concept. Class Diagram	Domain Model	Class Diagram	Object Diagram
UC-1	X	x		x	x			X	X
UC-2		x							
UC-3		x	x	x	x	x	x		
UC-4			x						
UC-5		x							
UC-6.0		x	x	x					
UC-6.1		x	x	x					
UC-7.0		x	x	x					
UC-7.1		x	x	x					
UC-8			x	x		x	x		
UC-9.0			x	x		x	x		
UC-9.1			x	x					
UC-10.0		x							
UC-10.1		x				x	x		
UC-11									
UC-12		x							
UC-13		x		x					
UC-14.0		x			x				
UC-14.1		x							
UC-14.2		x							

UC-15		x							
UC-15.1		x							
UC-16									

6.1.5. Vision and Business Case

6.1.5.1. Vision Statement

We think technology should be available in everybody's daily life, to be there when you need it and get out of your way when you don't.

6.1.5.2. Business Model

Our Business model will be based on an Iterative model where the software changes on each iteration, evolves and grows. Everybody in our group will be working on the iteration at the same time. In turn, each iteration builds on the previous one where the software design remains consistent. As our software will be delivered in parts, small changes in requirements will be possible in the course of the development. The requirements should not drastically change and the major ones must be defined. In our case, incremental development and integration of our delivered software will be more efficient.

6.1.5.3. Business Rules

- Device should be accessible to authorized users
- Only users should have the option to turn off any of the features, ex. GPS, Calling, Camera
- Only the users sensitive health information stored on the glasses should be only accessible by the user
- Only the users should have access to their location unless approved by the user to send.
- Only the users contact list is accessible to them.

Item	Details
Unique Identifier	BR01
Title	Device should be accessible to authorized users
Event	Accessing the users phone
Description	If the user cannot pair their phone to the glasses, the user will not have the ability to use the device.

Item	Details
Unique Identifier	BR02
Title	Only users should have the option to turn off any of the features, ex. GPS, Calling, Camera
Event	Option to turn off certain features
Description	After the user pairs the device to their phone, they will have the ability to turn off certain features such as GPS location, Phone calling, and the Camera

Item	Details
Unique Identifier	BR03
Title	Only the users sensitive health information stored on the glasses should be only accessible by the user
Event	Access to health information
Description	In the event that the users health information is stored on the device, the user and only them, is able to access their health information

Item	Details
Unique Identifier	BR04
Title	Only the users should have access to their location unless approved by the user to send.
Event	Sending locations to favorite or emergency
Description	In the event the users location GPS is being tracked, it is only sent to the users choice by their own approval. Location services should not be used for any other reason.

Item	Details
Unique Identifier	BR05

Title	Only the users contact list is accessible to them.
Event	Accessing favorites and calling
Description	In the event the user wants to call an individual, the customers contact list should only be accessible by the device and used for that purpose.

6.1.5.4. Problem Statement

We want all of our software releases to go to production seamlessly, without defects, where everyone is aware and informed of the outcomes and status.

6.1.5.5. Risk and Prevention Plan

Schedule Risk (We are working on delivering the product at a small scale in the early stages), Budget Risk (Currently we have limited resources), Technical Risk (Some glass features are hard to implement, so we are focusing on the important features first) , Operation Management Risk (resource planning overlooked)

6.1.5.6. Initial Requirements

Users must have access to the internet, a smart phone and have purchased the device from a genuine retailer.

6.1.5.7. Budget

Base Budget	\$3,100,000
Item Manufacturing Cost	\$200 / \$210 per item
Software Development	\$900,000
Marketing	\$200,000

6.1.5.8. Cost and Pricing

Base product: \$400 per unit

Prescription: \$420 per unit

6.1.5.9. License and Installation

- Cloud Server Cost: \$6 annually per 100 accounts
- License Fee: \$30 per purchase by the customer

- Product License: \$2,500 every two years
 - Firebase: \$1,000
 - Hardware Materials: \$1,500
- Patent: \$3,000 design patent for a 14-year life span
- iSee Smart Glasses Application: No cost for installation

6.1.5.10. Functional Requirements

Functional Requirement No.	Functional Requirement Description For the iSee Smart Glasses Wearable Device
FR1	Text and call 911 and favorites
FR2	Location finding via GPS
FR3	Voice Assistant (Bluetooth connection to phone)
FR4	Distance Calculator
FR5	Detect Heart Attack
FR6	Count Pulse
FR7	Check Glucose Level
FR8	Camera to Take Pictures
FR9	Volume Buttons

Functional Requirement No.	Functional Requirement Description For the iSee Smart Glasses Mobile Application
FR10	Create an account and user login
FR11	Find user's iSee Smart Glasses via Bluetooth
FR12	View current pulse count and glucose level and history
FR13	View photo gallery via photos taken from iSee Smart Glasses and be able to upload to phone's photo gallery
FR14	Edit five favorite contacts
FR15	View and edit saved locations via using distance calculator from the

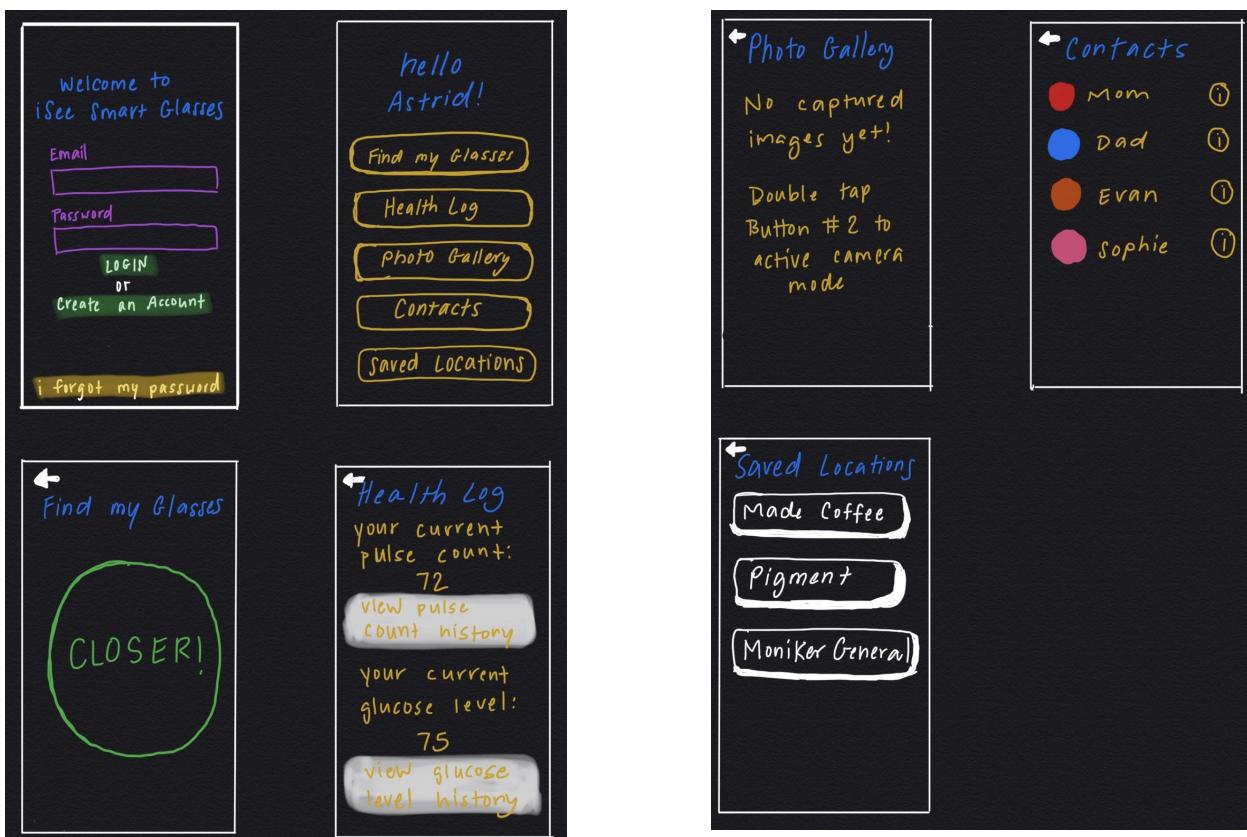
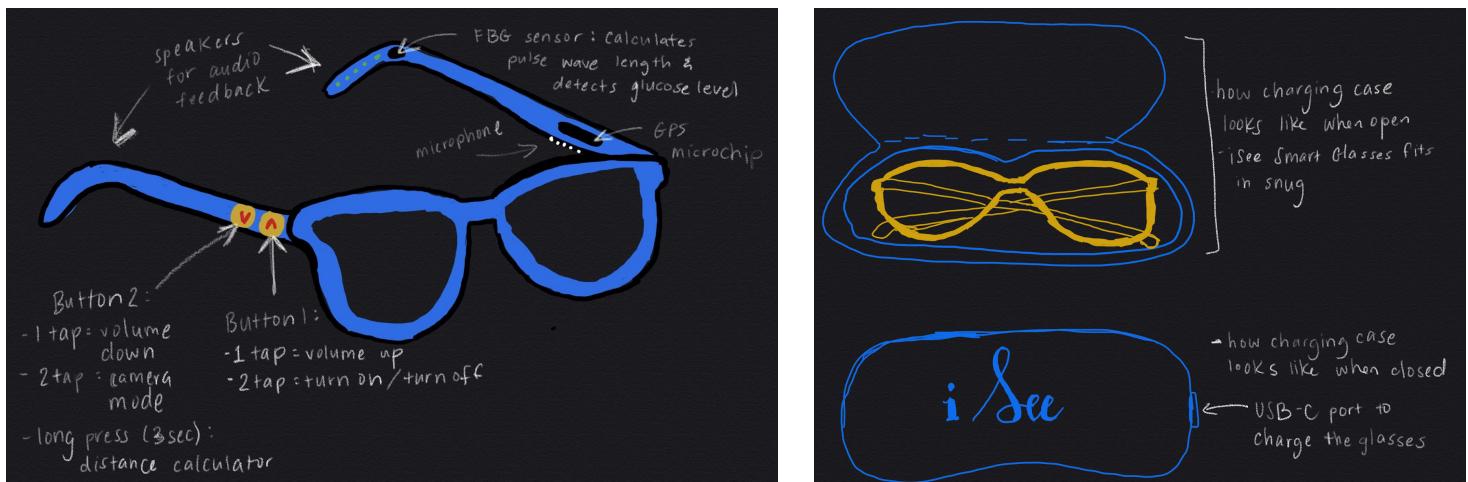
	iSee Smart Glasses
FR16	View the battery life of the iSee Smart Glasses

6.1.5.11. Non Functional Requirements

Non Functional Requirement No.	Non Functional Requirement Description
NFR1	Run on mobile environment
NFR2	Available 99% - always accessible (Battery Life and Updates)
NFR3	Modifiable - extendable to other services
NFR4	Waterproof
NFR5	Durability - Scratch Proof
NFR6	Lightweight
NFR7	Transitional Lens Option
NFR8	Prescription/Non-prescription lens option
NFR9	Charging glasses case

6.1.5.12. Prototyping Responsibilities

The drawings below are prototypes for the iSee Smart Glasses device and mobile application. These prototypes were drawn on an Apple iPad for easy editing. The glasses contain details with the buttons' operations on the glasses and where sensors will be located. The charging case includes how the glasses look like and where the charging port is located. The mobile application is a typical layout of what we'd like the user to see once they connect their iSee Smart Glasses to their mobile device.



6.1.6. Goals and Constraints

6.1.6.1. Inception Phase Goals

During the inception phase, we intend to discuss and create the following with one iteration:

- Define the functional and non-functional requirements
- Elaborate and explain the business details for the iSee Smart Glasses
- Define the scope of the system
- Classify people, organizations, and external structures that will associate with iSee Smart Glasses
- Produce an initial risk assessment, schedule, and estimation for the iSee Smart Glasses
- Produce initial tailoring of the Unified Process to match the user's specific needs

These steps are vital to make clear before moving onto the elaboration phase. All of the planning discussed during inception results in 20% of the project's entirety being completed.

6.1.6.2. Elaboration Phase Goals

During the elaboration phase, we intend to produce the following with two iterations:

- Create a proven, structural baseline for the iSee Smart Glasses
- Produce a rough project plan for the entire construction phase through the various diagrams that must be constructed
- Guarantee that the essential tools, processes, standards, and guidelines are set in place for the construction phase
- Understand and reduce the high priority risks of the project

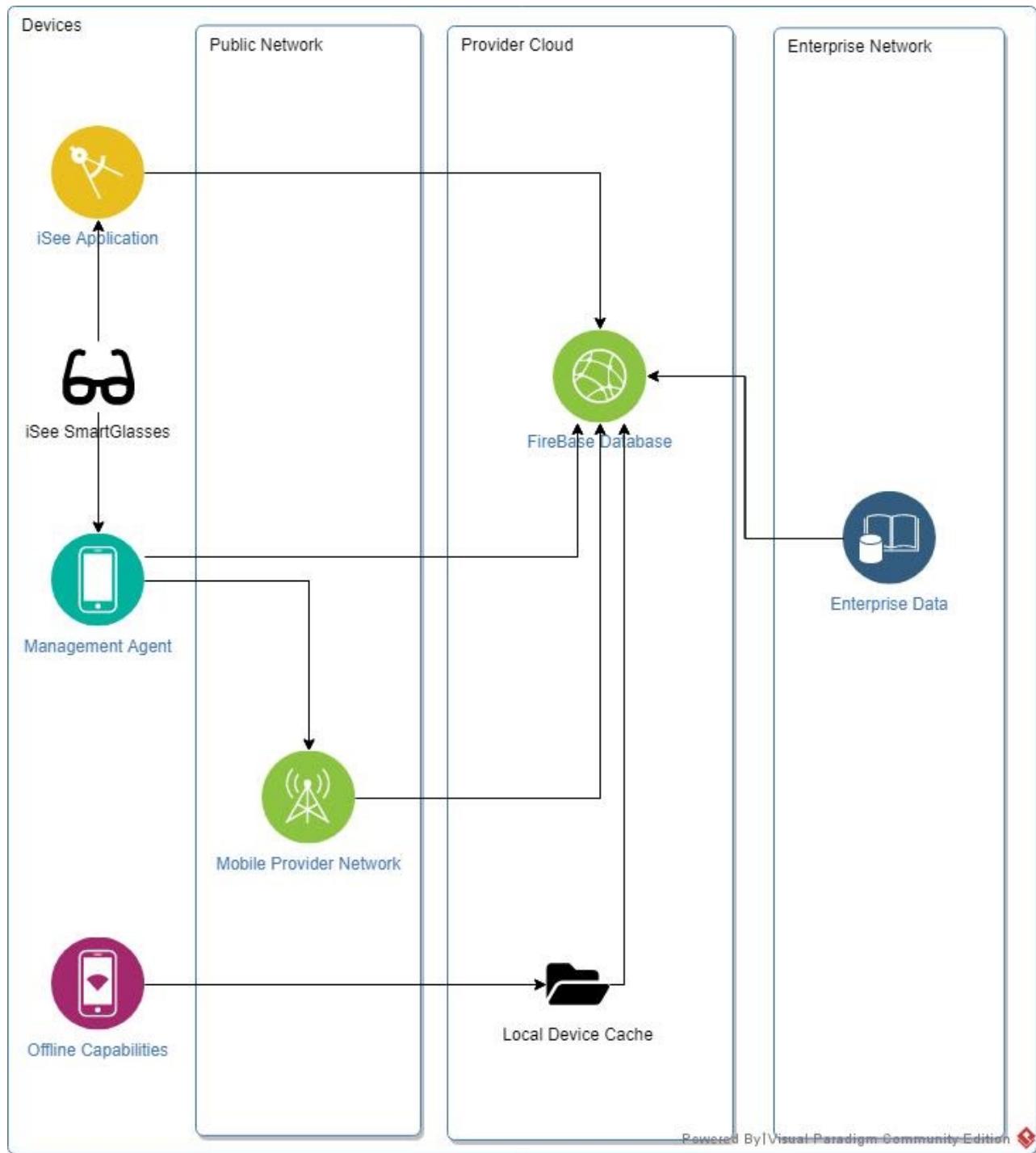
These steps are necessary to make clear before moving onto the construction phase. The planning discussed during inception results in 30% of the project's entirety being completed, totaling to 50% completion of the entire project.

6.1.6.3. Constraints

1. Cost of the project
 - a. Resources, the estimated cost for labor and materials
2. The types of benefits the product will produce
3. The outcome of the quality of the product
4. The scope of the project
 - a. Goals, deliverables, features, and functions
5. The expected time commitment for this project
 - a. Planning and scheduling

6.2 Elaboration 1

6.2.1. Architecture Diagram



6.2.2 Use Cases

6.2.2.1 Black Box

FR	Use Case	Functional Requirement	Description
FR1	UC-1	Text and call 911 and contact favorites	As a user, I want to reach out to 911 and contact favorites so I can contact somebody for assistance or help
FR2	UC-2	Location finding via GPS	As a user, I want to know my iSee Smart Glass' location so I can find it if I lose it.
FR3	UC-3	Using voice assistance	As a user, I want to use a voice assistant, so that I can access certain commands.
FR4	UC-4	Calculating distance between user and a destination the user sees	As a user, I want to pin a location by looking at it, so that I can get directions through my phone.
FR5	UC-5	Detecting if the user is having a heart attack	As a user, I want to detect a heart attack, so that I can get an immediate emergency.
FR6	UC-6.0	Checking the user's pulse	As a user, I want to see my pulse, so that I can get a real time reading of my heart rate.
FR6	UC-6.1	Logging the users pulse	As a user, I want to log my heart rate, so I can see an overview of my health.
FR7	UC-7.0	Checking the user's glucose level	As a user, I want to check my glucose level real time, so that I can fix my sugar levels.
FR7	UC-7.1	Logging the users glucose levels	As a user, I want to log my glucose levels, so that I can see an overview of my glucose levels.
FR8	UC-8	Using the camera on the iSee Smart Glasses to take pictures	As a user, I want to take pictures with my glasses, so I can save those moments.

FR9	UC-9.0	Change the volume up	As a user, I want to adjust my volume up on my glasses, so that I can listen to the audio louder.
FR9	UC-9.1	Change the volume down	As a user, I want to adjust my volume down on my glasses, so that I can listen to the audio softer.
FR10	UC-10.0	Create an account for iSee Smart Glasses mobile application	As a user, I want to create an account for my glasses, so I can log into my app.
FR10	UC-10.1	Login to user account for iSee Smart Glasses mobile application	As a user, I want to log into my app, so I can see an overview of my data.
FR11	UC-11	Locate the user's iSee Smart Glasses	As a user, I want to locate my glasses, so I don't lose them.
FR12	UC-12	View user's current pulse count and glucose level in history log	As a user, I want to view my health log, so that I can view all of my health information.
FR13	UC-13	View photos the user has taken from the iSee Smart Glasses application.	As a user, I want to view my pictures that I have taken on the application, so that I can see them in my gallery.
FR14	UC-14.0	View my saved favorites	As a user, I want to view my favorite contacts, so that I can view who is on my favorites list.
FR14	UC-14.1	Add favorite	As a user, I want to add a favorite to my list of favorites, so that I can add an emergency contact to call.
FR14	UC-14.2	Remove Favorite	As a user, I want to remove a user from my list, so that I can edit and change around my list of emergency contacts.
FR15	UC-15.0	View and edit saved locations the user logged using the distance calculator via voice assistance	As a user, I want to View my saved locations, so that I can have an overview of my previous locations.
FR15	UC-15.1	Add saved location	As a user, I want to add a saved location to my locations list, so that I can save a place I've visited.

FR16	UC-16	View the battery life of their iSee Smart Glasses	As a user, I want to view the battery life of my glasses, so that I can know if I need charge my device
------	-------	---	---

6.2.2.2 Brief Use Case

Use Case No.	Brief Use Case Description
UC - 1	The user can text and call 911 and their contact favorites by using voice activation.
UC - 2	The location of the iSee Smart Glasses is monitored via GPS so that the user can locate their glasses on the iSee Smart Glasses app if they are lost.
UC-3	The user can use voice assistance, triggering it by saying “Can I see (insert request here)” to access certain commands.
UC-4	The user can pin a location by using the iSee Smart Glass’s distance calculator, saying, “Can iSee the distance between me and the building in front of me”
UC-5	iSee Smart glasses will detect if the user is having a heart attack and will dial 911 for immediate emergency.
UC - 6-6.2	The user can check and log their pulse by activating using the voice command “Can iSee my pulse,” and verify if they want to record it in the log via app.
UC - 7-7.2	The user can check and log their sugar and glucose levels by activating using the voice command “Can iSee my pulse,” and verify if they want to record it in the log via app.
UC - 8	Users will have the option to take photos and record videos by clicking the button 1 or voice activation.
UC - 9	Users can press volume 1 down. Allowing to listen for audio in decreasing volume.
UC -10	Users can create an iSee account and register their smart glass.
UC -10.1	Users must login using the mobile application to use the smart glasses, lets the user upgrade operating system using the application
UC -11	Users can use a laptop or smartphone to find their glasses using GPS. The glasses will be pinged when they are found.
UC-12	This user can view a full overview of the health log in two sections, one will be displaying the current pulse, the second part will have the current glucose level
UC-13	This user goes into their gallery on their phone to view all the pictures they have taken from the glasses. They are saved to the users phone and the phone storage will

	manage the pictures.
UC-14-14.2	The user will have an interface of viewing which contacts they can add and delete to their list of user contacts in the application. This will be a list of people the user would like to call.
UC-15-15.1	The user opens their application and will have a view to look at the saved locations that they have recently visited in a list.
UC-16	The user wants to view the battery life of their glasses and know if they need to charge their device, they open the application on their phone to look at the status of the device.

6.2.2.3 Casual Use Case

Use Case No.	Casual Use Case Description
UC-1	The user must have the iSee Smart Glasses app downloaded onto their smartphone device. From there, the user can input their five favorite contacts by selecting the “Contacts” button. When the “Contacts” panel appears, the user can add the contact’s information: name and phone number. To call 911 or their favorites, the user must say, “Can iSee call (name of contact).” iSee smart glasses will dial the contact’s number and the user can communicate through the iSee Smart Glass’ speakers.
UC-2	The user must have the iSee Smart Glasses app downloaded onto their smartphone device. Once the user pairs their glasses to their mobile device via bluetooth, the iSee Smart Glasses will be able to locate the iSee Smart Glass’ location through the GPS sensor.
UC-3	The user can use voice recognition to navigate through the glass’ functions. In order for iSee Smart Glasses to receive a command from the user, the user must commence their command by saying, “Can iSee ____.” iSee Smart Glasses will hear the command and perform the action requested by the user.
UC-4	The user must have the iSee Smart Glasses app downloaded onto their smartphone device. To request the distance between the user and a location, the user must say for example, “Can iSee the distance between me and the building in front of me.” iSee Smart Glasses will be able to pinpoint the location of the building and tell the user the distance in feet measurement. Once the user requests the location, on the iSee Smart Glasses application, it will record the location under the “Saved Locations” button so the user can access them again later.
UC-5	The user must have the iSee Smart Glasses app downloaded onto their smartphone device first. If the glasses sense that the user's heart rate to be above 100 bpm, then iSee Smart Glasses will ask the user, “Detecting heart attack, would you like to call 911?” If the user replies yes, iSee Smart Glasses will automatically call 911. If the user replies no, iSee Smart Glasses will end the heart attack protocol.
UC- 6-6.2	The user must have the iSee Smart Glasses mobile app downloaded into their smartphone device and connected to their personal iSee Smart Glasses device. When the user is wearing the iSee Smart Glasses and uses the voice command “Can iSee my pulse,” the sensor located on the glasses will begin to read and record their pulse for the user. The user will be able to see the results via connected mobile device. If desired, the user can request to log results through an option given on the app.
UC-7-7.2	The user must have the iSee Smart Glasses mobile app downloaded into their

	smartphone device and connected to their personal iSee Smart Glasses device. When the user is wearing the iSee Smart Glasses and uses the voice command “Can iSee my glucose,” the sensor located on the glasses will begin to read and record their glucose levels for the user. The user will be able to see the results via connected mobile device. If desired, the user can request to log results through an option given on the app.
UC - 8	The user must have the iSee Smart Glass mobile app downloaded into their smartphone and connected to their personal iSee Smart Glasses device. After the user has logged into the application they will have the option to take a photo or a video by voice activation saying “cheese?” Or by pressing button 1.
UC - 9	The user must have the iSee Smart Glass mobile app downloaded into their smartphone and connected to their personal iSee Smart Glasses device. The user can directly use button one to decrease the volume of iSee Smart Glass. The button is located on the left side of the glass frame.
UC - 10 -10.1	The user must have the iSee Smart Glass mobile app downloaded into their smartphone and connected to their personal iSee SmartGlass device. Using the application the user has the option to create an iSee smart glass account using their email or signing in using their google account. The user can upgrade their glass by clicking settings, device firmware and clicking upgrade device when available.
UC - 11	The user must have the iSee Smart Glass mobile app downloaded into their smartphone and connected to their personal iSee SmartGlass device. Using the find my glass application user can locate their smart glasses. They may use a smartphone or web browser to login to the portal to ping the glasses.
UC-12	The user must have the iSee Smart Glasses mobile app downloaded into their smartphone device and connected to their personal iSee Smart Glasses device. After the user is logged into the application, on the device homepage they will click on the Health Log bar to view their pulse count and glucose levels. They have two options to click and view their heart rate history log and also their glucose history log.
UC-13	The user must have the iSee Smart Glasses mobile app downloaded into their smartphone device and connected to their personal iSee Smart Glasses device. After the user is logged into the application, on the device homepage they will click

	on the Photo Gallery to view all their recent pictures they have taken. The photo gallery will go to their personal phones gallery application to view their photos.
UC-14-14.2	<p>The user must have the iSee Smart Glasses mobile app downloaded into their smartphone device and connected to their personal iSee Smart Glasses device.</p> <p>After the user is logged into the application, on the device homepage they will click on the Contacts to view all their favorites that they have added. There will be a button to add a favorite, there are a total of 5 slots to add a favorite and a button to delete favorites. The user will click on the top right to close the favorites tab.</p>
UC-15-15.1	<p>The user must have the iSee Smart Glasses mobile app downloaded into their smartphone device and connected to their personal iSee Smart Glasses device.</p> <p>After the user is logged into the application, on the device homepage they will click on the Contacts to view all their favorites that they have added. There will be a button to label Saved Locations. They will click it and be able to access a list of most recently saved locations the eyeglasses have pinpointed.</p>
UC-16	<p>The user must have the iSee Smart Glasses mobile app downloaded into their smartphone device and connected to their personal iSee Smart Glasses device.</p> <p>After the user is logged into the application, on the device homepage they will click on the Contacts to view all their favorites that they have added. The user can view the battery life of their glasses at the top right and know if they need to charge their device.</p>

6.2.2.4. Fully Dressed Use Case

UC-1	Text and call 911 and contact favorites
Primary Actor	The user of the phone application
Precondition	The user must have the iSee Smart Glasses mobile app downloaded into their smartphone device and connected to their personal iSee Smart Glasses device. The user is logged into the application on the device homepage.
Success Guarantee	<ol style="list-style-type: none"> 1. User says, “Can iSee call/text 911/contact name” 2. iSee Smart Glasses sends the request to the mobile application 3. Mobile application checks to see if the contact name is saved in their Favorite Contacts 4. iSee Smart Glasses dials up the number successfully and user can communicate through the glasses via speakers
Extension	<ol style="list-style-type: none"> 1. The contact name the user requested is not in their favorites list <ol style="list-style-type: none"> a. The user must enter the contact information on the iSee Smart Glasses mobile application

UC-2	Location finding via GPS
Primary Actor	The user of the phone application
Precondition	The user must have the iSee Smart Glasses mobile app downloaded into their smartphone device and connected to their personal iSee Smart Glasses device. The user is logged into the application on the device homepage.
Success Guarantee	<ol style="list-style-type: none"> 1. User logs into their account on the iSee Smart Glasses mobile application 2. User selects the “Find My Glasses” button 3. User is redirected to the locating page titled “Find My Glasses” with a changing description that says “Closer!” 4. The iSee Smart Glasses will automatically make the volume of their speakers to the highest level so he user can hear the ringing of the device 5. Once the user locates their iSee Smart Glasses device the mobile application will say “Hooray!”
Extension	

UC-3	Using voice assistance
Primary Actor	The user of the phone application
Precondition	The user must have the iSee Smart Glasses mobile app downloaded into their smartphone device and connected to their personal iSee Smart Glasses device. The user is logged into the application on the device homepage.
Success Guarantee	<ol style="list-style-type: none"> 1. User commences a command by saying “Can iSee ____” 2. Valid commands are: “Can iSee <ul style="list-style-type: none"> a. Text 911 / contact name b. Call 911 / contact name c. The distance calculator d. My pulse e. My glucose level
Extension	<ol style="list-style-type: none"> 1. User says an invalid command <ul style="list-style-type: none"> a. iSee Smart Glasses will reply, “Sorry, that is an invalid command, please repeat a valid command.”

UC-4	Calculating distance between user and a destination the user sees
Primary Actor	The user of the phone application
Precondition	The user must have the iSee Smart Glasses mobile app downloaded into their smartphone device and connected to their personal iSee Smart Glasses device. The user is logged into the application on the device homepage.
Success Guarantee	<ol style="list-style-type: none"> 1. User says, “Can iSee the distance calculator” 2. iSee Smart Glasses follows up with a response asking, “Where do you need to calculate distance to?” 3. User would respond, for example, “the distance to the building in front of me.” 4. iSee Smart Glasses receives the location name and transfers the info to their iSee Smart Glasses mobile application
Extension	<ol style="list-style-type: none"> 1. User asks for a distance to a building iSee Smart Glasses cannot locate <ul style="list-style-type: none"> a. iSee Smart Glasses will reply, “Sorry, cannot locate the destination, please request another location.”

UC-5	Detecting if the user is having a heart attack
Primary Actor	The user of the phone application

Precondition	The user must have the iSee Smart Glasses mobile app downloaded into their smartphone device and connected to their personal iSee Smart Glasses device. The user is logged into the application on the device homepage.
Success Guarantee	<ol style="list-style-type: none"> 1. iSee Smart Glasses uses the FBG sensor to detect the user's pulse wave length and glucose level 2. If the user's heart rate is 120 - 150 bpm iSee Smart Glasses will say, "Detecting a heart attack, would you like to call 911?" 3. If the user replies yes, iSee Smart Glasses will automatically call 911. 4. If the user replies no, iSee Smart Glasses will end the heart attack protocol.
Extension	

UC-6	Check User Pulse
Primary Actor	The user of the phone application
Precondition	The user must have the iSee Smart Glasses mobile app downloaded into their smartphone device and connected to their personal iSee Smart Glasses device. The user must be wearing the device on their head.
Success Guarantee	<ol style="list-style-type: none"> 1. User says, "Can iSee the my pulse" 2. iSee Smart Glasses follows up with a response stating the user's heart rate and asks if the user would like to log the results 3. User would respond with a yes or no, confirming the action 4. iSee Smart Glasses will then take the appropriate action based on the answer, recording the log if desired
Extension	

UC-7	Check User Glucose Levels
Primary Actor	The user of the phone application
Precondition	The user must have the iSee Smart Glasses mobile app downloaded into their smartphone device and connected to their personal iSee Smart Glasses device. The user must be wearing the device on their head.
Success Guarantee	<ol style="list-style-type: none"> 1. User says, "Can iSee the my pulse" 2. iSee Smart Glasses follows up with a response stating the user's heart rate and asks if the user would like to log the results 3. User would respond with a yes or no, confirming the action 4. iSee Smart Glasses will then take the appropriate action based on the

	answer, recording the log if desired
Extension	

UC-8	Taking Photos
Primary Actor	The user of the phone application
Precondition	The user must have the iSee Smart Glasses mobile app downloaded into their smartphone device and connected to their personal iSee Smart Glasses device. The user is logged into the application on the device homepage.
Success Guarantee	1. iSee Smart Glasses uses the Sony Sensor to capture light at a focal length of 2.8mm or 16mm
Extension	

UC-9-9.1	Change Volume up and down
Primary Actor	The user of the phone application
Precondition	The user must have the iSee Smart Glasses mobile app downloaded into their smartphone device and connected to their personal iSee Smart Glasses device. The user is logged into the application on the device homepage.
Success Guarantee	The user can hold or tap the volume 1 button to control volume level of the glass
Extension	1. The user can use their smartphone to control volume of the glass

UC- 10 -10.1	Create and Login iSee Smart Glass
Primary Actor	The user of the phone application
Precondition	The user must have the iSee Smart Glasses mobile app downloaded into their smartphone device and connected to their personal iSee Smart Glasses device. The user is logged into the application on the device homepage.

Success Guarantee	<ol style="list-style-type: none"> 1. The user can create an iSee SmartGlass account by registering the device with us.
Extension	<ol style="list-style-type: none"> 1. Additionally the user can use google credentials to sign into the account

UC- 11	Locate iSee Smart Glasses
Primary Actor	The user of the phone application
Precondition	The user must have the iSee Smart Glasses mobile app downloaded into their smartphone device and connected to their personal iSee Smart Glasses device. The user is logged into the application on the device homepage.
Success Guarantee	<ol style="list-style-type: none"> 1. The user goes to the mobile application on their phone and taps the find button. 2. The application pings the glass location using bluetooth or GPS.
Extension	

UC-12	View user's current pulse count and glucose level in history log
Primary Actor	The user of the phone application
Precondition	The user must have the iSee Smart Glasses mobile app downloaded into their smartphone device and connected to their personal iSee Smart Glasses device. The user is logged into the application on the device homepage
Success Guarantee	<ol style="list-style-type: none"> 1. This user goes into their gallery on their phone to view all the pictures they have taken from the glasses. They are saved to the users phone and the phone storage will manage the pictures. 2. The user clicks Health Log bar to view their pulse count and glucose levels. They are able to view their current pulse and glucose levels at real time. 3. The user wears the glasses on their head with the blood glucose sensor working and the heart rate monitor sensor working, both in contact with the user's skin.
Extension	<ol style="list-style-type: none"> 1. The user clicks the Health Log button and an error page pops up.

UC-13	View photos the user has taken from the iSee Smart Glasses application.
-------	---

Primary Actor	The user of the phone application
Precondition	The user must have the iSee Smart Glasses mobile app downloaded into their smartphone device and connected to their personal iSee Smart Glasses device. The user is logged into the application on the device homepage
Success Guarantee	<ol style="list-style-type: none"> 1. The user clicks the Photo Gallery button and is redirected to the phone photo gallery on the device. This gives the option, depending on the device, to manage the photos of the gallery. 2. The photos are saved onto the phone in a local storage folder.
Extension	<ol style="list-style-type: none"> 1. The user clicks the Photo Gallery button and an error page pops up.

UC-14-14.2	View, add and remove saved favorites
Primary Actor	The user of the phone application
Precondition	The user must have the iSee Smart Glasses mobile app downloaded into their smartphone device and connected to their personal iSee Smart Glasses device. The user is logged into the application on the device homepage
Success Guarantee	<ol style="list-style-type: none"> 1. The user clicks on the Favorites button and a list of favorites page pops up. 2. The favorites page has an option to add, remove or delete favorites to edit them. 3. The favorites page has an option to back out from the favorites page.
Extension	<ol style="list-style-type: none"> 1. The user clicks the Favorites button and an error page pops up.

UC-15-15.1	View and edit saved locations the user logged using the distance calculator via voice assistance
Primary Actor	The user of the phone application
Precondition	The user must have the iSee Smart Glasses mobile app downloaded into their smartphone device and connected to their personal iSee Smart Glasses device. The user is logged into the application on the device homepage
Success Guarantee	<ol style="list-style-type: none"> 1. The user clicks on the Saved Locations button and a list of recent saved locations come up, in chronological order. 2. The saved locations, when tapped on, opens a pin drop with the apple maps application on that location.

Extension	<ol style="list-style-type: none"> 1. The user clicks the Saved Locations button and an error page pops up. 2. The user clicks on a location that has been saved, and does not launch the apple maps. 3. The user clicks on the saved location and nothing happens or an error message pops up.
-----------	--

UC-16	View the battery life of their iSee Smart Glasses
Primary Actor	The user of the phone application
Precondition	The user must have the iSee Smart Glasses mobile app downloaded into their smartphone device and connected to their personal iSee Smart Glasses device. The user is logged into the application on the device homepage
Success Guarantee	<ol style="list-style-type: none"> 1. The user is logged in at the homepage and the top left displays the battery power of the glasses.
Extension	<ol style="list-style-type: none"> 1. The user is logged in and there is no connection to the device, no battery power is displayed on the app.

6.2.2.5. Operation Use Case

Operations Description (Describe the flow similar to how it would look like on a sequence diagram)

Use Case	Operations Description
UC - 1	sendText() – calls the operation to send a text message sendLocation() – calls and sends the gps location callHelp() – function calls the phone function to call a pre dialed emergency number
UC - 2	locateGlasses() - activates the GPS and location system
UC - 3	voiceActivation() - activates the voice assistance mode
UC - 4	distanceCalculator() - opens up camera for distance calculation
UC - 5	detectHeartAttack() - calls heart attack detection function
UC - 6	callPulse() - fetches the pulse data from the glasses
UC - 7	callGlucose() - fetches the glucose data from the glasses
UC - 8	capture()- takes a picture with the glasses
UC - 9	volumeUp() - turns volume of device up volumeDown() - turns volume of device down
UC - 10	createAccount() - creates an account for the application with the firebase server login() - logs into the application
UC - 11	locateGlasses() - activates the GPS and location system
UC - 12	viewHistoryLog() - views the user glucose levels on the app and fetches data
UC - 13	gallery() - opens the photo gallery of the phone to view photos
UC - 14	savedFavorites() - fetches the list of favorites saved addFavorite() - adds a favorite to the list of favorites, condition max being 5 removeFavorite() - removes a favorite from the list of favorites
UC - 15	savedLocationsDC() - fetches the list of favorites the user has been to on google maps app addSavedLocation() - saves a location to google maps favorite, drops a pin
UC - 16	viewBattery() - fetches the battery life of the smart glasses

6.2.2.6. Contracts

Contract 1 - textOrCall	
UC-1	Text and call 911 and contact favorites
Primary Actor	The user of the phone application
Precondition	The user must have the iSee Smart Glasses mobile app downloaded into their smartphone device and connected to their personal iSee Smart Glasses device. The user is logged into the application on the device homepage.
Success Guarantee	<ol style="list-style-type: none"> 1. User says, “Can iSee call/text 911/contact name” 2. iSee Smart Glasses sends the request to the mobile application 3. Mobile application checks to see if the contact name is saved in their Favorite Contacts 4. iSee Smart Glasses dials up the number successfully and user can communicate through the glasses via speakers
Extension	<ol style="list-style-type: none"> 1. The contact name the user requested is not in their favorites list <ol style="list-style-type: none"> a. The user must enter the contact information on the iSee Smart Glasses mobile application
Operations	sendText() – calls the operation to send a text message sendLocation() – calls and sends the gps location callHelp() – function calls the phone function to call a pre dialed emergency number
Cross References	Use Cases: Text and call 911/contact favorites
Postconditions	Call was executed and successful.

Contract 2 - locateGlasses	
UC-2	Location finding via GPS
Primary Actor	The user of the phone application
Precondition	The user must have the iSee Smart Glasses mobile app downloaded into their smartphone device and connected to their personal iSee Smart Glasses device. The user is logged into the application on the device homepage.

Success Guarantee	<ol style="list-style-type: none"> 1. User logs into their account on the iSee Smart Glasses mobile application 2. User selects the “Find My Glasses” button 3. User is redirected to the locating page titled “Find My Glasses” with a changing description that says “Closer!” 4. The iSee Smart Glasses will automatically make the volume of their speakers to the highest level so he user can hear the ringing of the device 5. Once the user locates their iSee Smart Glasses device the mobile application will say “Hooray!”
Extension	If the device is idle, the location should be updated every 30 minutes, the device will keep the location of the device updated with the phone.
Operation	locateGlasses() - activates the GPS and location system
Cross References	Use Cases: Location finding via GPS
Preconditions	iSee Smart Glasses mobile application must be downloaded into the user’s mobile device and they are logged in.
Postconditions	

Contract 3 - voiceActivation	
UC-3	Using voice assistance
Primary Actor	The user of the phone application
Precondition	The user must have the iSee Smart Glasses mobile app downloaded into their smartphone device and connected to their personal iSee Smart Glasses device. The user is logged into the application on the device homepage.
Success Guarantee	<ol style="list-style-type: none"> 1. User commences a command by saying “Can iSee ____” 2. Valid commands are: “Can iSee <ul style="list-style-type: none"> f. Text 911 / contact name g. Call 911 / contact name h. The distance calculator i. My pulse j. My glucose level
Extension	<ol style="list-style-type: none"> 1. User says an invalid command

	b. iSee Smart Glasses will reply, “Sorry, that is an invalid command, please repeat a valid command.”
Operation	voiceActivation() - activates the voice assistance mode
Cross References	Use Cases: Using voice assistance
Preconditions	iSee Smart Glasses mobile application must be downloaded into the user’s mobile device and they are logged in.
Postconditions	iSee Smart Glasses execute the command and serve the user successfully.

Contract4 - distanceCalculator	
UC-4	Calculating distance between user and a destination the user sees
Primary Actor	The user of the phone application
Precondition	The user must have the iSee Smart Glasses mobile app downloaded into their smartphone device and connected to their personal iSee Smart Glasses device. The user is logged into the application on the device homepage.
Success Guarantee	<ol style="list-style-type: none"> 1. User says, “Can iSee the distance calculator” 2. iSee Smart Glasses follows up with a response asking, “Where do you need to calculate distance to?” 3. User would respond, for example, “the distance to the building in front of me.” 4. iSee Smart Glasses receives the location name and transfers the info to their iSee Smart Glasses mobile application
Extension	
Operation	distanceCalculator() - opens up camera for distance calculation
Cross References	Use Cases: Calculating distance between user and a destination the user sees.
Preconditions	iSee Smart Glasses mobile application must be downloaded into the user’s mobile device and they are logged in.
Postconditions	Destination was located and saved into the iSee Smart Glasses mobile application.

Contract5 - detectHeartAttack

UC-5	Detecting if the user is having a heart attack
Primary Actor	The user of the phone application
Precondition	The user must have the iSee Smart Glasses mobile app downloaded into their smartphone device and connected to their personal iSee Smart Glasses device. The user is logged into the application on the device homepage.
Success Guarantee	<ol style="list-style-type: none"> 1. iSee Smart Glasses uses the FBG sensor to detect the user's pulse wave length and glucose level 2. If the user's heart rate is 120 - 150 bpm iSee Smart Glasses will say, "Detecting a heart attack, would you like to call 911?" 3. If the user replies yes, iSee Smart Glasses will automatically call 911. 4. If the user replies no, iSee Smart Glasses will end the heart attack protocol.
Extension	
Operation	detectHeartAttack() - calls heart attack detection function
Cross References	Use Cases: Detecting if the user is having a heart attack.
Preconditions	iSee Smart Glasses mobile application must be downloaded into the user's mobile device and they are logged in.
Postconditions	911 was contacted successfully.

Contract6 - checkPulse

UC-6	Check User Pulse
Primary Actor	The user of the phone application
Precondition	The user must have the iSee Smart Glasses mobile app downloaded into their smartphone device and connected to their personal iSee Smart Glasses device. The user must be wearing the device on their head.

Success Guarantee	<ol style="list-style-type: none"> 1. User says, “Can iSee the my pulse” 2. iSee Smart Glasses follows up with a response stating the user’s heart rate and asks if the user would like to log the results 3. User would respond with a yes or no, confirming the action 4. iSee Smart Glasses will then take the appropriate action based on the answer, recording the log if desired
Extension	
Operation	callPulse() - fetches the pulse data from the glasses
Cross References	Use Cases: Checking the user’s pulse
Preconditions	iSee Smart Glasses mobile application must be downloaded into the user’s mobile device and they are logged in.
Postconditions	

Contract7 - checkGlucose	
UC-7	Check User Glucose Levels
Primary Actor	The user of the phone application
Precondition	<p>The user must have the iSee Smart Glasses mobile app downloaded into their smartphone device and connected to their personal iSee Smart Glasses device.</p> <p>The user must be wearing the device on their head.</p>
Success Guarantee	<ol style="list-style-type: none"> 1. User says, “Can iSee the my pulse” 2. iSee Smart Glasses follows up with a response stating the user’s heart rate and asks if the user would like to log the results 3. User would respond with a yes or no, confirming the action 4. iSee Smart Glasses will then take the appropriate action based on the answer, recording the log if desired
Extension	
Operation	callGlucose() - fetches the glucose data from the glasses
Cross References	Use Cases: Logging the users pulse

Preconditions	iSee Smart Glasses mobile application must be downloaded into the user's mobile device and they are logged in.
Postconditions	

Contract8 - camera	
UC-8	Taking Photos
Primary Actor	The user of the phone application
Precondition	The user must have the iSee Smart Glasses mobile app downloaded into their smartphone device and connected to their personal iSee Smart Glasses device. The user is logged into the application on the device homepage.
Success Guarantee	1. iSee Smart Glasses uses the Sony Sensor to capture light at a focal length of 2.8mm or 16mm
Extension	
Operation	capture() - takes a picture with the glasses
Cross References	Use Cases: takePhoto Or takeVideo
Preconditions	iSee Smart Glasses mobile application must be downloaded into the user's mobile device and they are logged in.
Postconditions	Photo gallery is updated with new photo

Contract9 - volumeControl	
UC-9-9.1	Change Volume up and down
Primary Actor	The user of the phone application
Precondition	The user must have the iSee Smart Glasses mobile app downloaded into their smartphone device and connected to their personal iSee Smart Glasses device. The user is logged into the application on the device homepage.

Success Guarantee	The user can hold or tap the volume 1 button to control volume level of the glass
Extension	2. The user can use their smartphone to control volume of the glass
Operation	volumeUp() - turns volume of device up volumeDown() - turns volume of device down
Cross References	Use Cases: Control Volume Button 1 and 2
Preconditions	iSee Smart Glasses mobile application must be downloaded into the user's mobile device and they are logged in.
Postconditions	Device volume increase or decreased

Contract10 - loginAndRegistration	
UC- 10 -10.1	Create and Login iSee Smart Glass
Primary Actor	The user of the phone application
Precondition	The user must have the iSee Smart Glasses mobile app downloaded into their smartphone device and connected to their personal iSee Smart Glasses device. The user is logged into the application on the device homepage.
Success Guarantee	1. The user can create an iSee SmartGlass account by registering the device with us.
Extension	1. Additionally the user can use google credentials to sign into the account
Operation	createAccount() - creates an account for the application with the firebase server login() - logs into the application
Cross References	Use Cases: Create an account for iSee Smart Glasses mobile application
Preconditions	iSee Smart Glasses mobile application must be downloaded into the user's mobile device and they are logged in.
Postconditions	

Contract11 - locateGlasses

UC- 11	Locate iSee Smart Glasses
Primary Actor	The user of the phone application
Precondition	The user must have the iSee Smart Glasses mobile app downloaded into their smartphone device and connected to their personal iSee Smart Glasses device. The user is logged into the application on the device homepage.
Success Guarantee	<ol style="list-style-type: none"> 1. The user goes to the mobile application on their phone and taps the find button. 2. The application pings the glass location using bluetooth or GPS.
Extension	
Operation	locateGlasses() - activates the GPS and location system
Cross References	Use Cases: Locate the user's iSee Smart Glasses
Preconditions	iSee Smart Glasses mobile application must be downloaded into the user's mobile device and they are logged in.
Postconditions	

Contract12 - historyLog

UC-12	View user's current pulse count and glucose level in history log
Primary Actor	The user of the phone application
Precondition	The user must have the iSee Smart Glasses mobile app downloaded into their smartphone device and connected to their personal iSee Smart Glasses device. The user is logged into the application on the device homepage
Success Guarantee	<ol style="list-style-type: none"> 1. This user goes into their gallery on their phone to view all the pictures they have taken from the glasses. They are saved to the users phone and the phone storage will manage the pictures. 2. The user clicks Health Log bar to view their pulse count and glucose levels. They are able to view their current pulse and glucose levels at real time.

	<p>3. The user wears the glasses on their head with the blood glucose sensor working and the heart rate monitor sensor working, both in contact with the user's skin.</p>
Extension	<p>1. The user clicks the Health Log button and an error page pops up.</p>
Operation	viewHistoryLog() - views the user glucose levels on the app and fetches data
Cross References	Use Cases: View user's current pulse count and glucose level in history log
Preconditions	iSee Smart Glasses mobile application must be downloaded into the user's mobile device and they are logged in.
Postconditions	

Contract13 - viewPhotos	
UC-13	View photos the user has taken from the iSee Smart Glasses application.
Primary Actor	The user of the phone application
Precondition	The user must have the iSee Smart Glasses mobile app downloaded into their smartphone device and connected to their personal iSee Smart Glasses device. The user is logged into the application on the device homepage
Success Guarantee	<p>1. The user clicks the Photo Gallery button and is redirected to the phone photo gallery on the device. This gives the option, depending on the device, to manage the photos of the gallery.</p> <p>2. The photos are saved onto the phone in a local storage folder.</p>
Extension	<p>1. The user clicks the Photo Gallery button and an error page pops up.</p>
Operation	gallery() - opens the photo gallery of the phone to view photos
Cross References	Use Cases: View photos the user has taken from the iSee Smart Glasses application.
Preconditions	iSee Smart Glasses mobile application must be downloaded into the user's mobile device and they are logged in.
Postconditions	

Contract14 - favorites

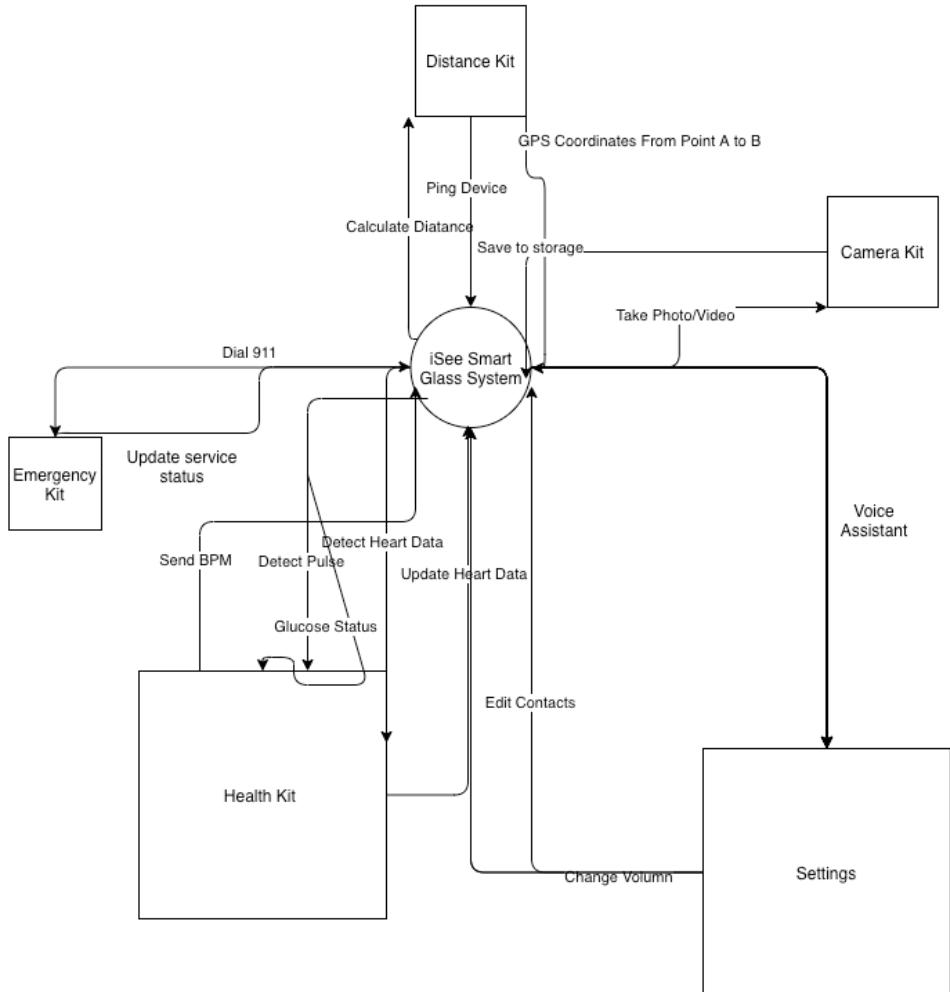
UC-14-14.2	View, add and remove saved favorites
Primary Actor	The user of the phone application
Precondition	The user must have the iSee Smart Glasses mobile app downloaded into their smartphone device and connected to their personal iSee Smart Glasses device. The user is logged into the application on the device homepage
Success Guarantee	<ol style="list-style-type: none"> 1. The user clicks on the Favorites button and a list of favorites page pops up. 2. The favorites page has an option to add, remove or delete favorites to edit them. 3. The favorites page has an option to back out from the favorites page.
Extension	<ol style="list-style-type: none"> 1. The user clicks the Favorites button and an error page pops up.
Operation	savedFavorites() - fetches the list of favorites saved addFavorite() - adds a favorite to the list of favorites, condition max being 5 removeFavorite() - removes a favorite from the list of favorites
Cross References	Use Cases: View my saved favorites, ,add favorite, remove favorite
Preconditions	iSee Smart Glasses mobile application must be downloaded into the user's mobile device and they are logged in.
Postconditions	

Contract15 - savedLocations

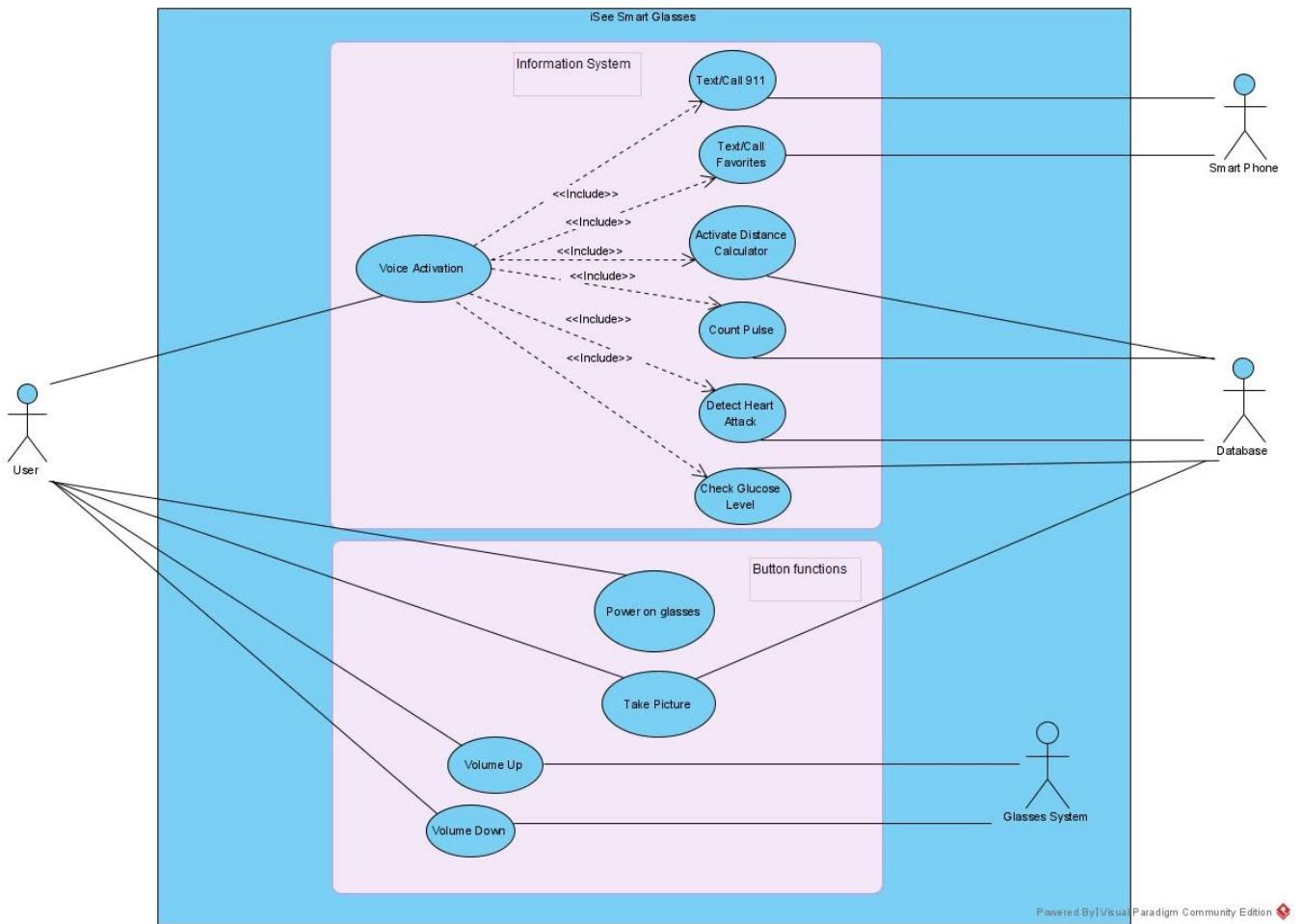
UC-15-15.1	View and edit saved locations the user logged using the distance calculator via voice assistance
Primary Actor	The user of the phone application
Precondition	The user must have the iSee Smart Glasses mobile app downloaded into their smartphone device and connected to their personal iSee Smart Glasses device. The user is logged into the application on the device homepage
Success Guarantee	<ol style="list-style-type: none"> 1. The user clicks on the Saved Locations button and a list of recent saved locations come up, in chronological order. 2. The saved locations, when tapped on, opens a pin drop with the

	apple maps application on that location.
Extension	<ol style="list-style-type: none"> 1. The user clicks the Saved Locations button and an error page pops up. 2. The user clicks on a location that has been saved, and does not launch the apple maps. 3. The user clicks on the saved location and nothing happens or an error message pops up.
Operation	savedLocationsDC() - fetches the list of favorites the user has been to on google maps app addSavedLocation() - saves a location to google maps favorite, drops a pin
Cross References	Use Cases: View and edit saved locations the user logged using the distance calculator via voice assistance, add saved location
Preconditions	iSee Smart Glasses mobile application must be downloaded into the user's mobile device and they are logged in.
Postconditions	

6.2.3. Context Diagram

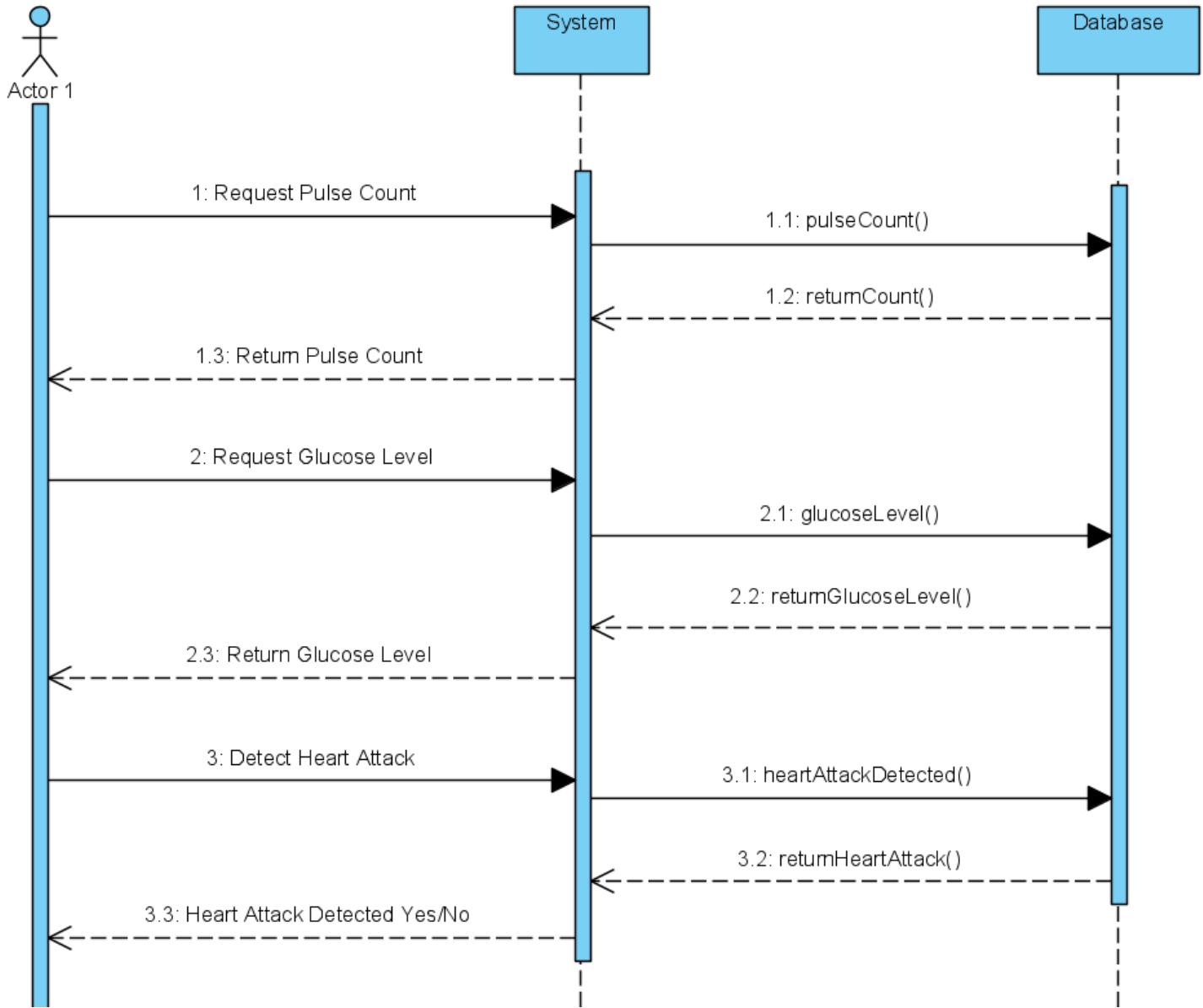


6.2.4. Use Case Diagram of Entire System

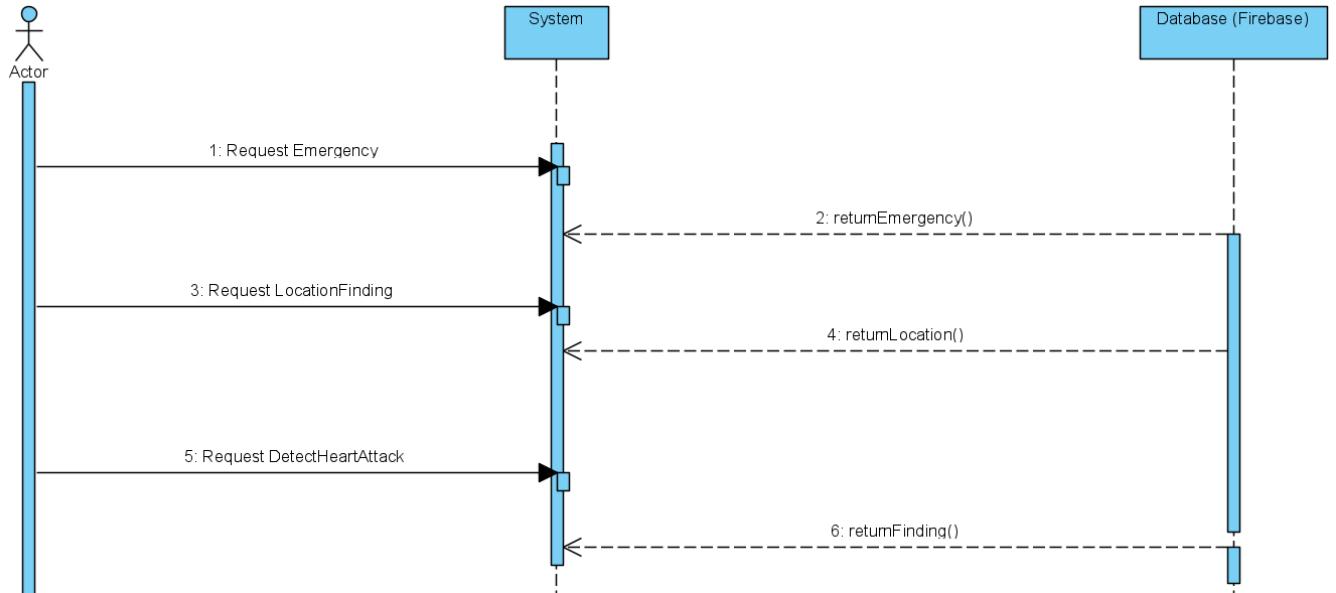


6.2.5. Sequence Diagrams

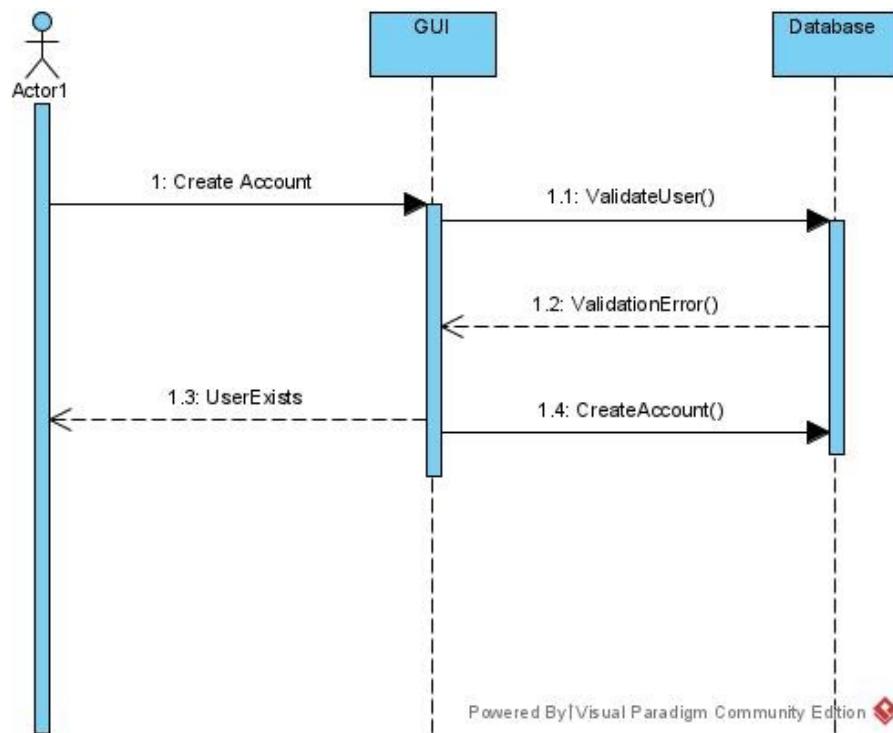
Pulse Sensor, Glucose and Heart Attack Monitor



Emergency Sequence

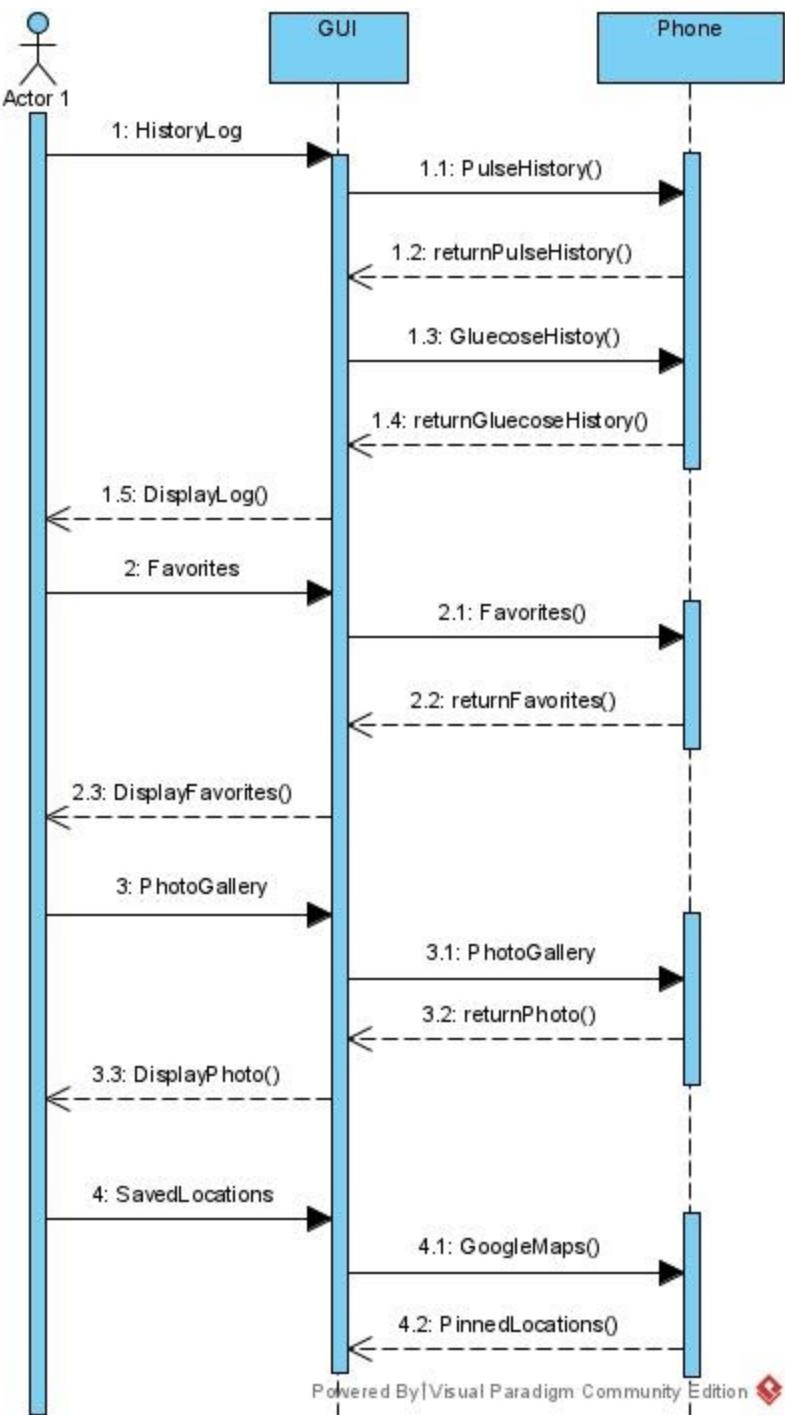


Create Account

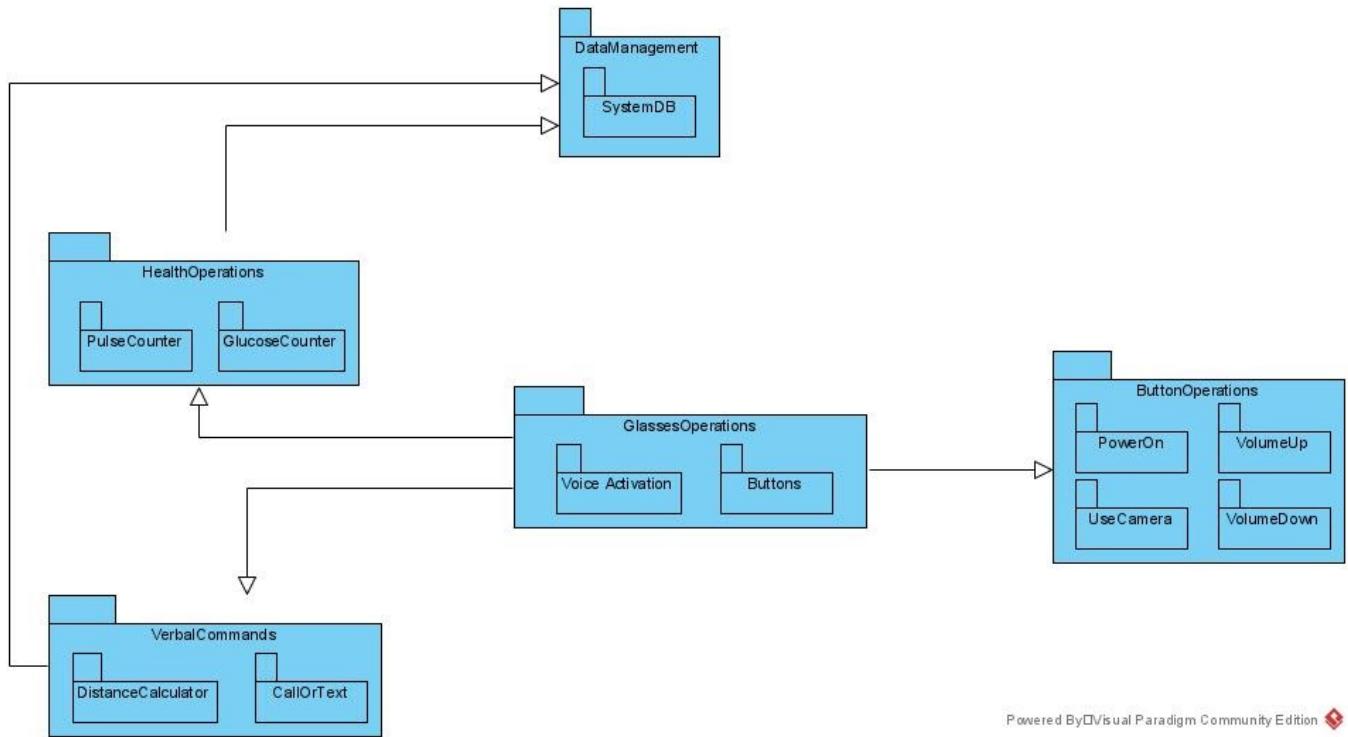


Powered By Visual Paradigm Community Edition

iSeeGlass App

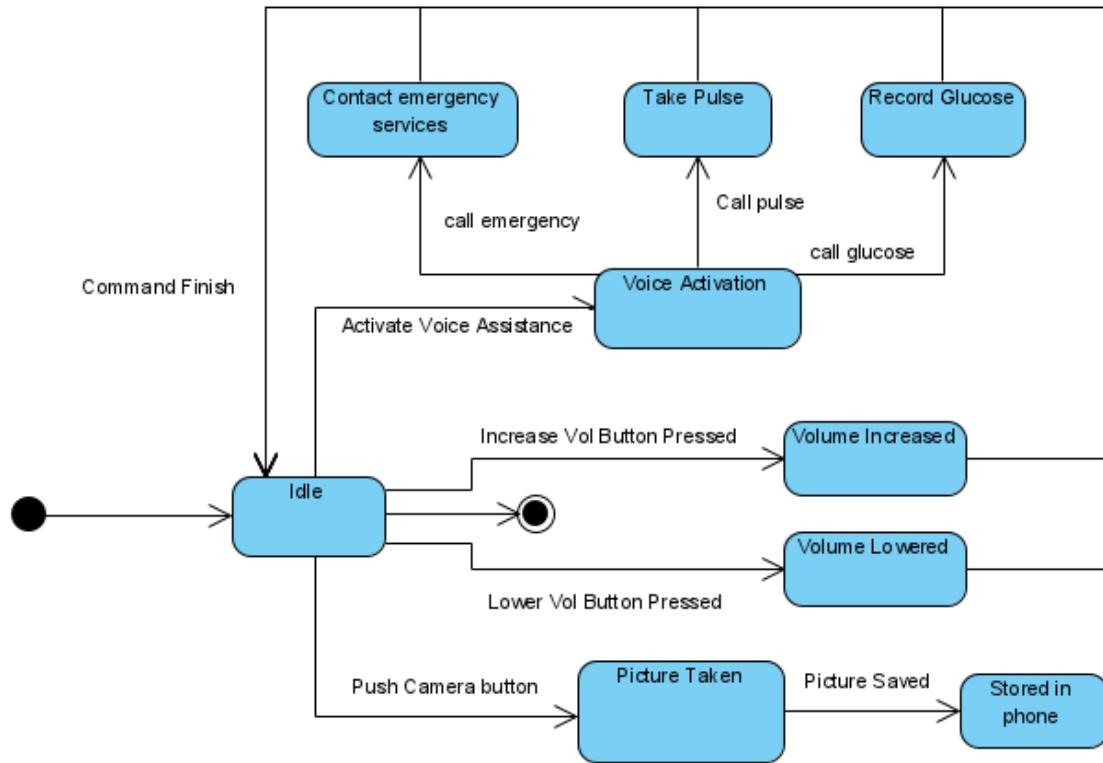


6.2.6 Package Diagram

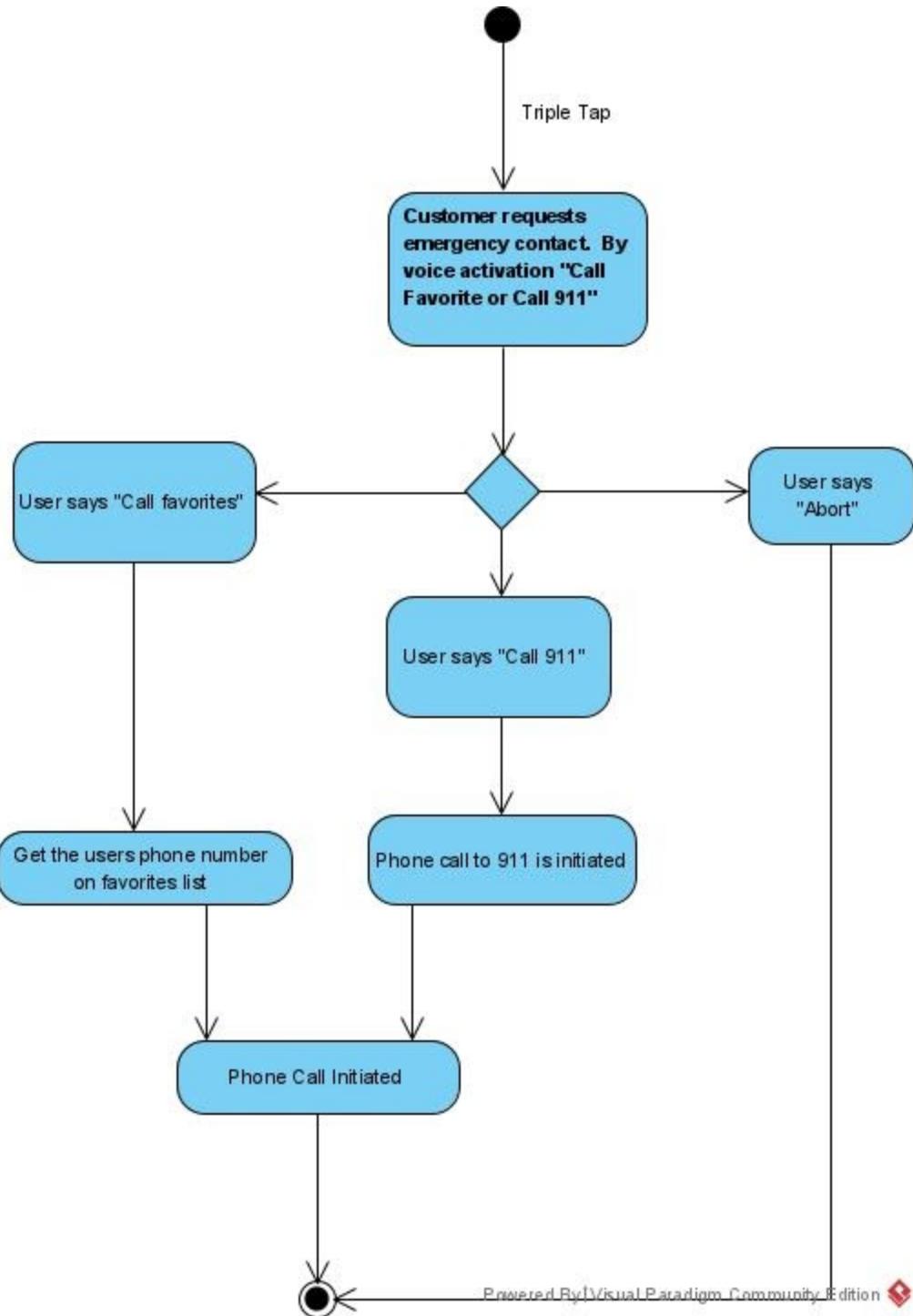


Powered By Visual Paradigm Community Edition

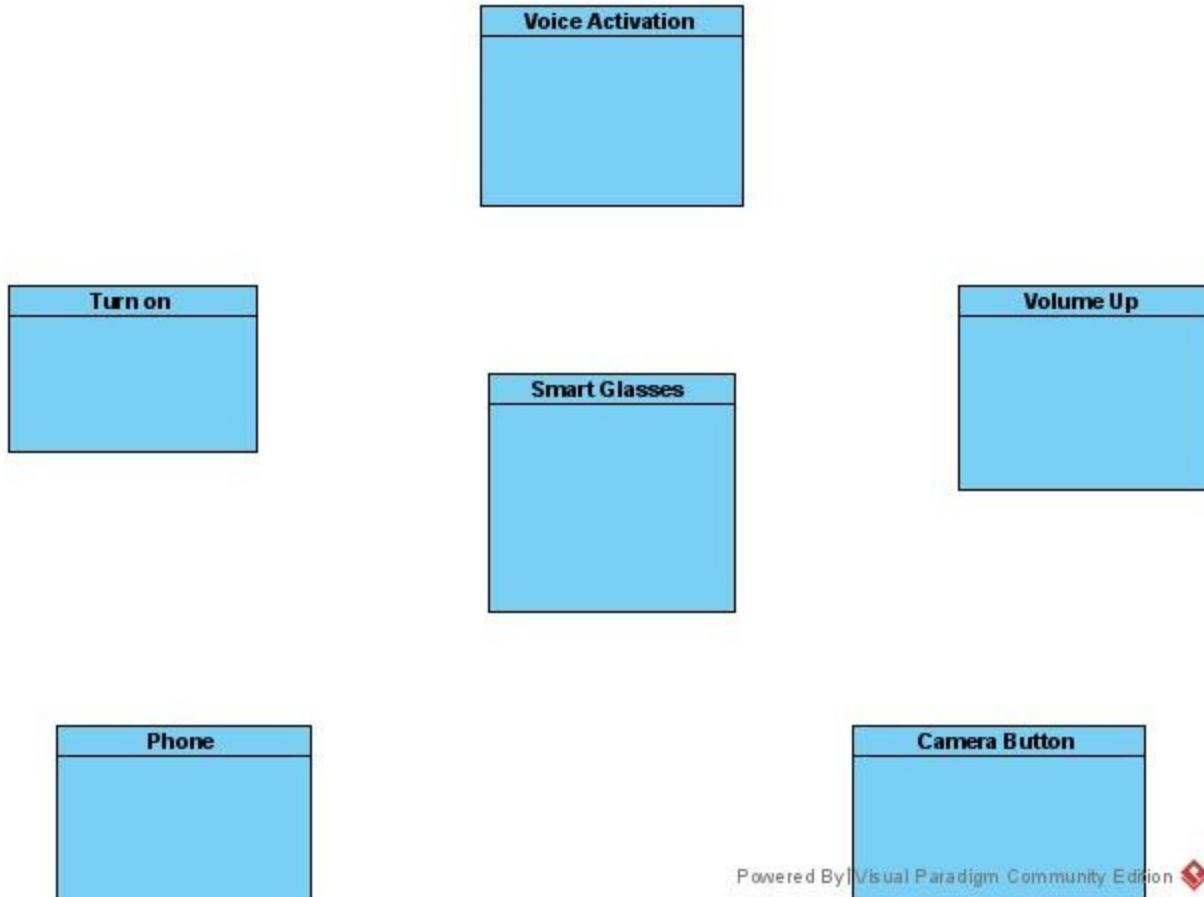
6.2.7. State Chart Diagram



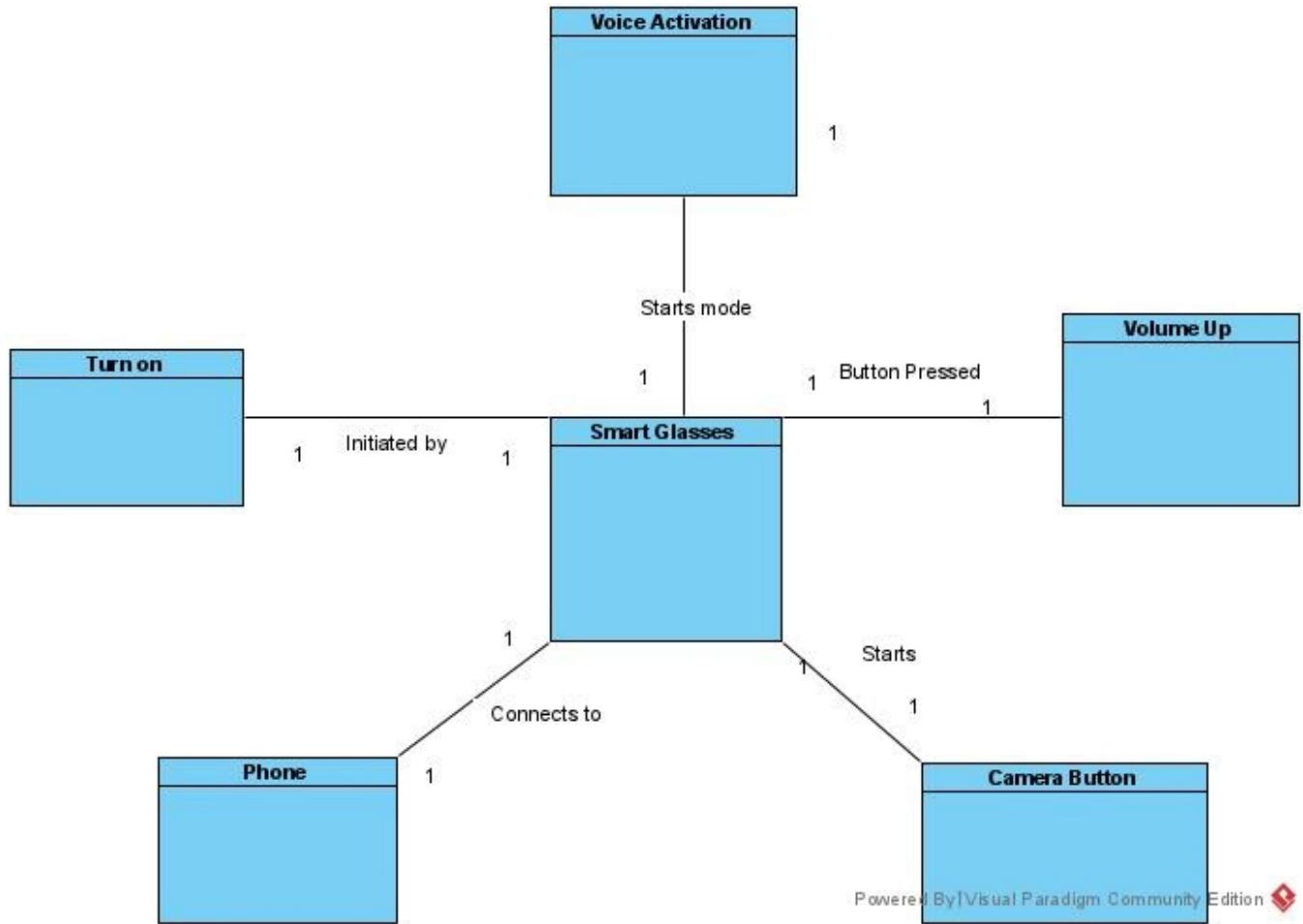
6.2.8. Activity Diagram



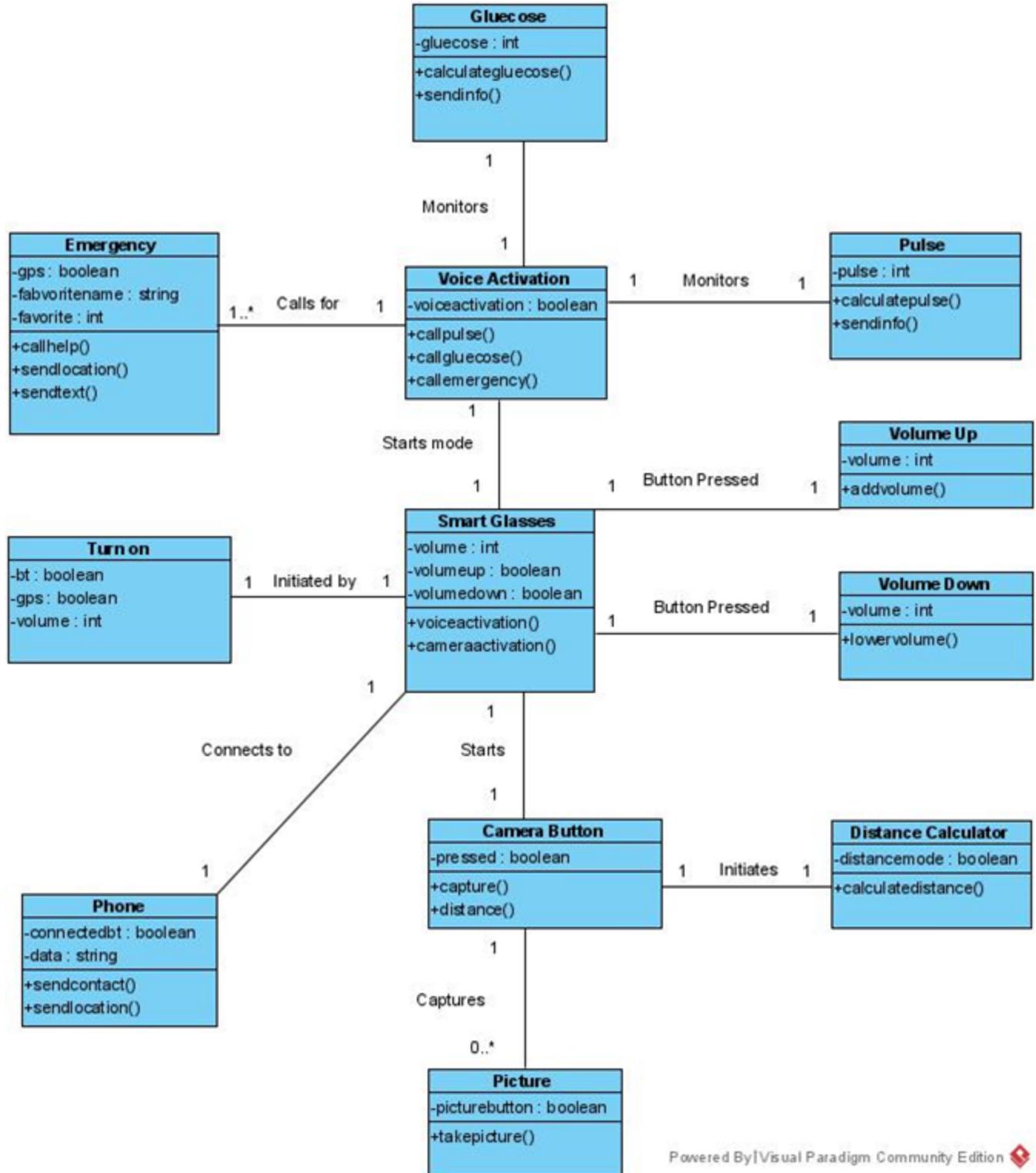
6.2.9. Conceptual Class Diagram



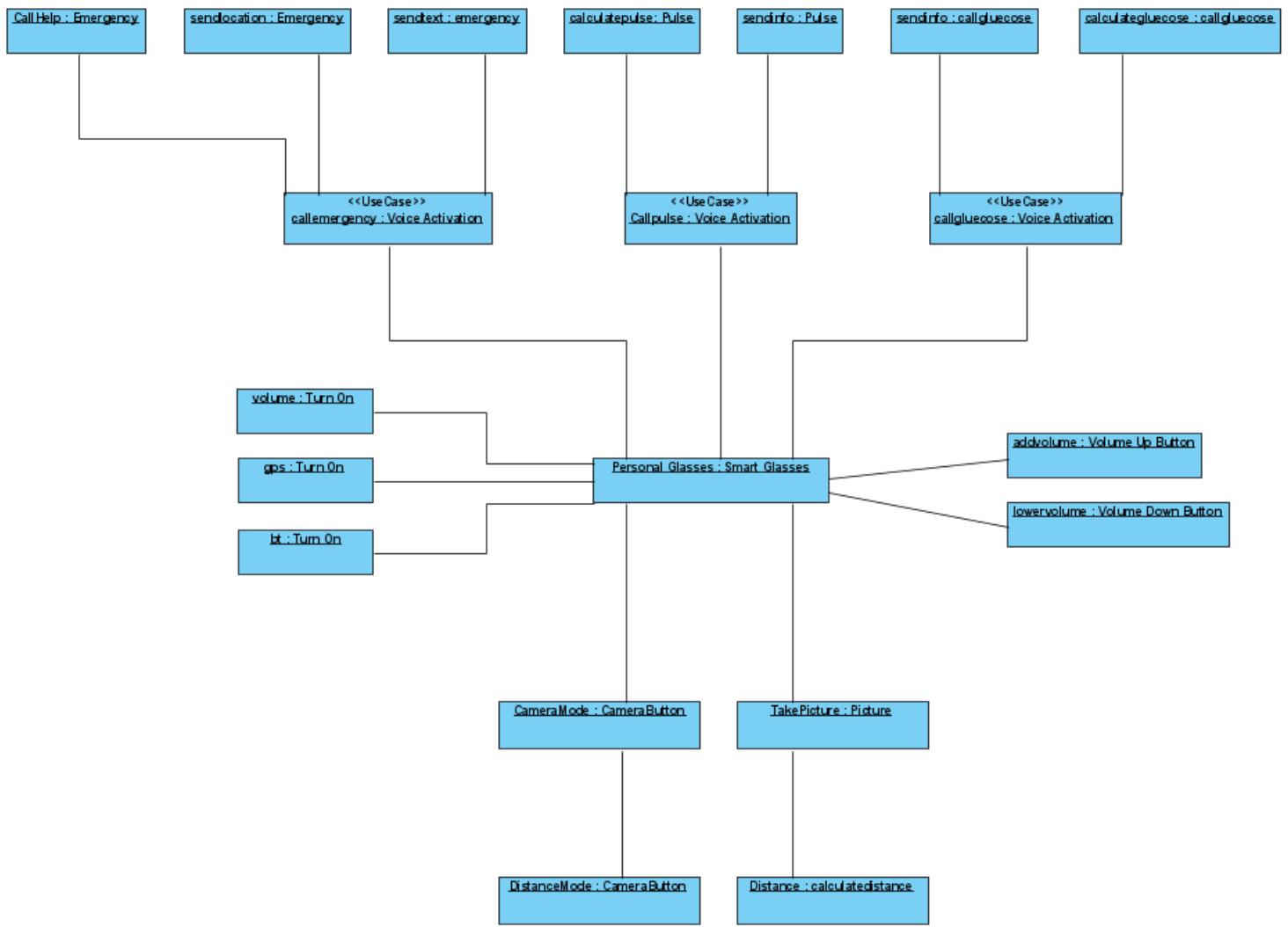
6.2.10. Domain Model



6.2.11. Class Diagram



6.2.12. Object Diagram



7. Iteration 2

7.1 Revision History

Task-Version Number	Team Member	Action Performed	Date Completed
Operation Use Case - V2	All	Updated operations	10/16/2020
Contracts - V2	All	Updated details	10/16/2020
Context Diagram - V2	Kizar Cassiere	Updated Diagram	10/18/2020
Use Case Diagram - V2	All	Updated diagram	10/16/2020
Sequence Diagram - V2	All	Updated diagrams	10/10/2020
Activity Diagram - V2	Kizar Cassiere	Updated diagram	10/10/2020
Conceptual Class Diagram - V2	Samuel Flinkfelt	Updated Diagram	10/10/2020
Object Diagram - V2	Dylan Nguyen	Updated Diagram	10/10/2020
Table of Contents - V3	All	Updated pages	10/17/2020
Revision History - V3	All	Updated information	10/17/2020
Meeting Minutes - V3	Donavie Ordonez	Added meeting details	9/18/2020
Project Plan - V3	All	Added dependencies	10/17/2020
Meeting Minutes - V4	Donavie Ordonez	Added meeting details	9/25/2020
Meeting Minutes - V5	Donavie Ordonez	Added meeting details	10/2/2020
Meeting Minutes - V6	Donavie Ordonez	Added meeting details	10/9/2020
Meeting Minutes - V7	Donavie Ordonez	Added meeting details	10/16/2020
Class Diagram - V2	Samuel Flinkfelt	Remove Diagonal Lines	10/30/2020
Operation Use Case	Samuel Flinkfelt	Added Fully Dressed +	10/30/2020

-V3		Operations	
Vision Statement - V3	Samuel Flinkfelt	Refine	10/30/2020
Meeting Minutes - V8	Donavie Ordonez	Added meeting details	10/30/2020
Table Of Contents - V4	Donavie Ordonez	Add Project 2 headings	10/30/2020
Project Plan - V4	Donavie Ordonez	Add new tasks and assign to team members	10/30/2020
Meeting Minutes - V9	Donavie Ordonez	Added meeting details	11/6/2020
Budget - V2	Donavie Ordonez	Fixed contents for budget	11/6/2020
Architectural Layer Refinement - V1	Samuel Flinkfelt	Created the diagram	11/6/2020
CRC Cards - V1	All	Created CRC Cards for all classes	11/13/2020
Component Diagram - V1	Kizar Cassiere	Created the diagram	11/13/2020
Package Diagram - V2	Donavie Ordonez	Added more layers to the diagram	11/13/2020
Deployment Diagram - V1	Donavie Ordonez	Created the diagram	11/13/2020
Meeting Minutes - V10	Donavie Ordonez	Added meeting details	11/20/2020
Sequence Diagrams - V3	Donavie Ordonez	Updated sequence diagrams and added methods	11/20/2020
State Chart Diagram - V2	Dylan Nguyen	Updated diagram	11/20/2020
Interaction Diagram - V1	Samuel Flinkfelt	Created Diagram	12/4/2020
Class Diagram - V3	Samuel Flinkfelt	Updated Diagram	12/4/2020
Class Diagram (GRASP) - V1	Samuel Flinkfelt	Created Diagram	12/4/2020

Design Class Diagram - V1	Kizar Cassiere	Created Diagram	12/4/2020
Activity Diagram - V3	Donavie Ordonez	Updated diagram, added 6 rakes	12/4/2020
Forward Traceability Matrix - V1	Dylan Nguyen	Updated matrix table from project 1, added diagrams from project 2	12/4/2020
Reverse Traceability Matrix - V1	Dylan Nguyen	Created table	12/4/2020

7.2 Meeting Minutes

Meeting #8

Meeting Objectives:

1. Fix parts of Project 1 Prof. Pati noted in the feedback.

Location: Discord

Date: 10/30/2020

Time: 1 PM

Attendees:

1. Kizar Cassiere
2. Samuel Flinkfelt
3. Dylan Nguyen
4. Donavie Ordonez

Action Items/Owner

1. Vision Statement / Samuel Flinkfelt
2. Budget / Dylan Nguyen
3. Operations Use Case / Samuel Flinkfelt
4. Fix diagonal line in Class Diagram to 90 degree angle line / Samuel Flinkfelt
5. Add Project 2 contents to the project / Donavie Ordonez
6. Add Project 2 tasks to project plan Google Sheet and assign tasks to team members / Donavie

Meeting Notes

- Make sure we focus on revising parts Prof. Pati needs us to revise (Vision statement, budget, operations use case, Class Diagram)
- Everyone fixed their respective tasks (Samuel: Vision statement, Operations Use Case, Class Diagram; Dylan Nguyen: Budget)
- New Project 2 content was added to this project report
- New Project 2 tasks were added to the Project Plan Google Sheet and were assigned to team members evenly

Meeting #9

Meeting Objectives:

1. Make sure all team members know what tasks they're assigned to. Reference the project plan.

Location: Discord

Date: 11/6/2020

Time: 1 PM

Attendees:

1. Kizar Cassiere
2. Samuel Flinkfelt
3. Donavie Ordonez

Action Items/Owner

1. Architecture Layer Refinement / Samuel Flinkfelt
2. Budget / Dylan Nguyen and Donavie Ordonez
3. Interaction Diagram / Samuel Flinkfelt
4. Package Diagram / Donavie Ordonez

Meeting Notes

- Make sure we revise the budget
- Everyone started on their respective tasks. Reference Action Items above.

Meeting #10

Meeting Objectives:

1. Make sure all team members know what tasks they're assigned to. Reference the project plan.

Location: Discord

Date: 11/13/2020

Time: 1 PM

Attendees:

1. Kizar Cassiere
2. Samuel Flinkfelt
3. Donavie Ordonez

Action Items/Owner

1. CRC Cards - All
2. Interaction Diagram / Samuel Flinkfelt
3. Component Diagram / Kizar Cassiere
4. Forward Traceability Matrix / Dylan Nguyen
5. Deployment Diagram / Donavie Ordonez

Meeting Notes

- Team lead instructed everyone on what they should be working on
- Made sure everyone understands what needs to be done for their tasks
- Sam gave us resources on how to fill out the CRC Cards correctly
- Everyone worked on their respective tasks above

Meeting #11

Meeting Objectives:

1. Make sure everyone is continuously working on their tasks for the project.

Location: Discord

Date: 11/20/2020

Time: 1 PM

Attendees:

1. Kizar Cassiere
2. Samuel Flinkfelt
3. Donavie Ordonez

Action Items/Owner

1. Class Diagram / Samuel Flinkfelt
2. Class Diagram (GRASP) / Kizar Cassiere
3. Forward Traceability Matrix and State Chart Diagram / Dylan Nguyen
4. Sequence Diagrams / Donavie Ordonez

Meeting Notes

- Team lead instructed everyone on what they should be working on
- Team lead made sure everyone understands what needs to be done for their tasks. Team lead sent a message on Discord of a reminder to everyone what their responsibilities are.
- Everyone worked on their respective tasks above

Meeting #12

Meeting Objectives:

1. Make sure everyone is continuously working on their tasks for the project.

Location: Discord

Date: 12/4/2020

Time: 1 PM

Attendees:

1. Kizar Cassiere
2. Samuel Flinkfelt
3. Donavie Ordonez

Action Items/Owner

1. Interaction Diagram (Communication) Code/ Samuel Flinkfelt
2. Class Diagram(GRASP) and Design Class Diagram / Kizar Cassiere
3. Forward Traceability Matrix, Reverse Traceability Matrix, Activity Diagram / Dylan Nguyen
4. Activity Diagram, update dependencies on project plan, update project charter / Donavie Ordonez

Meeting Notes

- Team lead instructed everyone on what they should be working on
- Team lead made sure everyone understands what needs to be done for their tasks. Team lead sent a message on Discord of a reminder to everyone what their responsibilities are.
- Everyone worked on their respective tasks above

7.3. Project Plan

Serial #	Dependencies	Task Name	Sub Task	Output/Deliverable	Assigned To	Start Date	End Date	Completion
1		Public Charter		Project Charter	Donavie	9/5/2020	10/18/2020	100%
2		Table of Contents		Table of Contents	All	9/5/2020	10/18/2020	100%
3		Revision History		Revision History	All	9/5/2020	10/18/2020	100%
4		Meeting Minutes		Meeting Minutes	All	9/5/2020	10/18/2020	100%
5		Project Plan		Project Plan	All	9/16/2020	10/18/2020	100%
6		UP Phase		UP Phase Diagram and Description	Donavie	9/16/2020	10/18/2020	100%
7		Evolutionary Requirements in Iterative Methods		Evolutionary Requirements in Iterative Methods	Samuel	9/16/2020	10/18/2020	100%
8		UP Artifact Influence		UP Artifact Influence	Kizar	9/16/2020	10/18/2020	100%
9	33, 34, 35, 36, 37, 38, 39, 40, 41, 42	Matrix Table		Matrix Table	Dylan	9/16/2020	10/18/2020	100%
10		Vision Statement		Vision Statement	Samuel	9/21/2020	10/18/2020	100%
11		Business Model		Business Model	Samuel	9/21/2020	10/18/2020	100%
12		Business Rules		Business Rules	Samuel	9/21/2020	10/18/2020	100%
13		Problem Statement		Problem Statement	Kizar	9/16/2020	10/18/2020	100%
14		Risk and Prevention Plan		Risk and Prevention Plan	Kizar	9/16/2020	10/18/2020	100%
15		Initial Requirements		Initial Requirements	Kizar	9/16/2020	10/18/2020	100%
16		Budget		Budget	Dylan	9/16/2020	10/18/2020	100%
17		Cost and Pricing		Cost and Pricing	Dylan	9/16/2020	10/18/2020	100%
18		Licence and Installation		Licence and Installation	Dylan	9/16/2020	10/18/2020	100%
19		Functional Requirements		Function Requirements	All	9/5/2020	10/18/2020	100%
20		Non Functional Requirements		Non Functional Requirements	All	9/5/2020	10/18/2020	100%
21	19	Prototyping Responsibilities		Prototyping Responsibilities	Donavie	9/16/2020	10/18/2020	100%
22		Inception Phase Goals		Inception Phase Goals	Donavie	9/16/2020	10/18/2020	100%
23		Elaboration Phase Goals		Elaboration Phase Goals	Donavie	9/16/2020	10/18/2020	100%
24		Constraints		Constraints	Samuel	9/16/2020	10/18/2020	100%
25	19	Architecture Diagram		Architecture Diagram	Samuel	9/16/2020	10/18/2020	100%
26	19	Black Box		Black Box for all Functional Requirements	All	9/16/2020	10/18/2020	100%
27	26, 19	Brief Use Case		Brief Use Case	All	9/16/2020	10/18/2020	100%
28	27, 26, 19	Causal Use Case		Causal Use Case	All	9/16/2020	10/18/2020	100%
29	28, 27, 26, 19	Fully Dressed Use Case		Fully Dressed Use Case	All	9/16/2020	10/18/2020	100%
30	29, 28, 27, 26, 19	Operations Use Case		Operations Use Case	All	9/30/2020	10/18/2020	100%
31	30, 29, 28, 27, 26, 19	Contracts		Contracts	All	9/16/2020	10/18/2020	100%
32	31, 30, 29, 28, 27, 26, 19	Context Diagram		Context Diagram	Kizar	9/2/2020	10/18/2020	100%
33	31, 30, 29, 28, 27, 26, 19	Use Case Diagram of Entire System		Use Case Diagram of Entire System	All	9/2/2020	10/18/2020	100%
34	25, 33, 31, 30, 29, 28, 27, 26, 19	Sequence Diagrams		Sequence Diagrams	All	9/5/2020	10/18/2020	100%
35	38, 37, 33, 25, 33, 31, 30, 29, 28, 27, 26, 19	Package Diagram		Package Diagram	Donavie	9/30/2020	10/18/2020	100%
36	33, 25, 33, 31, 30, 29, 28, 27, 26, 19	State Chart Diagram		State Chart Diagram	Dylan	9/11/2020	10/18/2020	100%
37	33, 25, 33, 31, 30, 29, 28, 27, 26, 19	Activity Diagram		Activity Diagram	Kizar	9/11/2020	10/18/2020	100%
38	33, 25, 33, 31, 30, 29, 28, 27, 26, 19	Component Diagram		Component Diagram	Samuel	9/30/2020	10/18/2020	100%
39	33, 25, 33, 31, 30, 29, 28, 27, 26, 19	Conceptual Class Diagram		Conceptual Class Diagram	Samuel	9/30/2020	10/18/2020	100%
40	37, 33, 25, 33, 31, 30, 29, 28, 27, 26, 19	Domain Model		Domain Model	Kizar	9/30/2020	10/18/2020	100%
41	38, 37, 33, 25, 33, 31, 30, 29, 28, 27, 26, 19	Class Diagram		Class Diagram	Samuel	9/5/2020	10/18/2020	100%
42	34, 38, 37, 33, 25, 33, 31, 30, 29, 28, 27, 26, 19	Object Diagram		Object Diagram	Dylan	9/11/2020	10/18/2020	100%
43		Supplementary Specification		Supplementary Specification	Donavie	9/16/2020	10/18/2020	100%
44		Glossary		Glossary	Donavie	9/16/2020	10/18/2020	100%
ITERATION 2								
45	10	Fix Vision Statement		Fixed Vision Statement	Samuel	10/30/2020	12/07/2020	100%
46	16	Fix Budget		Fixed Budget	Dylan	10/30/2020	12/07/2020	100%
47	30	Fix Operations Use Case		Fixed Operation Use Cases	Samuel	10/30/2020	12/07/2020	100%
48	41	Fix Class Diagram - Remove Diagonal Lines		Fixed Class Diagram	Samuel	10/30/2020	12/07/2020	100%
49	31, 30, 29, 28, 27, 26, 19	CRC Cards		16 CRC Cards	All	10/30/2020	12/07/2020	100%
50	35	Architecture Layer Refinement		Architecture Layer Refinement	Samuel	10/30/2020	12/07/2020	100%
51	25, 33, 31, 30, 29, 28, 27, 26, 19	Sequence Diagrams		Updated Sequence Diagrams	Donavie	10/30/2020	12/07/2020	100%
52	60, 61, 54, 53, 51, 50, 49, 38, 37, 33, 25, 33, 31, 30, 29, 28, 27, 26, 19	Forward Traceability Matrix		Forward Traceability Matrix	Dylan	10/30/2020	12/07/2020	50%
53	25, 33, 31, 30, 29, 28, 27, 26, 19	Interaction Diagram (communication)		Interaction Diagram (communication)	Samuel	10/30/2020	12/07/2020	100%
54	53, 51, 25, 33, 31, 30, 29, 28, 27, 26, 19	Component Diagram		Component Diagram	Kizar	10/30/2020	12/07/2020	100%
55	50, 49, 53, 51, 25, 33, 31, 30, 29, 28, 27, 26, 19	Package Diagram		Updated Package Diagram with Layers	Donavie	10/30/2020	12/07/2020	100%
56	53, 51, 50, 33, 25, 33, 31, 30, 29, 28, 27, 26, 19	Activity Diagram		Activity diagram with 6 rakes	Donavie	10/30/2020	12/07/2020	100%
57	53, 51, 50, 33, 25, 33, 31, 30, 29, 28, 27, 26, 19	State Chart Diagram		State Chart Diagram	Dylan	10/30/2020	12/07/2020	100%
58	54, 53, 51, 50, 49, 38, 37, 33, 25, 33, 31, 30, 29, 28, 27, 26, 19	Class Diagram		Class Diagram	Samuel	10/30/2020	12/07/2020	100%
59	60, 61, 54, 53, 51, 50, 49, 38, 37, 33, 25, 33, 31, 30, 29, 28, 27, 26, 19	Class Diagram (GRASP)		Class Diagram (GRASP)	Kizar	10/30/2020	12/07/2020	100%
59	54, 53, 51, 50, 49, 38, 37, 33, 25, 33, 31, 30, 29, 28, 27, 26, 19	Design Class Diagram		Design Class Diagram	Kizar	10/30/2020	12/07/2020	100%
60	58, 55, 53, 51, 50, 49, 34, 38, 37, 33, 25, 33, 31, 30, 29, 28, 27, 26, 19	Object Diagram		Object Diagram	Dylan	10/30/2020	12/07/2020	100%
61	58, 55, 53, 51, 50, 49, 34, 38, 37, 33, 25, 33, 31, 30, 29, 28, 27, 26, 19	Deployment Diagram		Deployment Diagram	Donavie	10/30/2020	12/07/2020	100%
62	60, 61, 54, 53, 51, 50, 49, 38, 37, 33, 25, 33, 31, 30, 29, 28, 27, 26, 19	Reverse Traceability Matrix		Reverse Traceability Matrix	Dylan	10/30/2020	12/07/2020	100%
63	43	Update Supplementary Specification		Updated Supplementary Specification	Donavie	10/30/2020	12/07/2020	100%
64	44	Update Glossary		Updated Glossary terms	Donavie	10/30/2020	12/07/2020	100%
65	4	Update Meeting Minutes		Updated Meeting Minutes	Donavie	10/30/2020	12/07/2020	100%
66	5	Update Project Plan		Updated Project Plan	Donavie	10/30/2020	12/07/2020	100%
67	2	Update Table of Contents		Updated Table of Contents	Donavie	10/30/2020	12/07/2020	100%
68	3	Update Revision History		Updated Revision History	Donavie	10/30/2020	12/07/2020	100%

7.4 Inception 2

7.4.1 Vision and Business Case

7.4.1.1 Vision Statement

Fullerton Wear is looking for a product that is a type of glasses that should aid the user in daily life, more than usual. Unlike high-end glass frames that do not do anything, Fullerton Wear has technology incorporated with the glass frame accessory to go beyond ordinary glassware.

7.4.1.2 Budget

Traveling & Seminars	\$100,000
Legal Fees	\$12,000
Software	\$10,000

7.5. Elaboration 2

7.5.1 Use Cases

7.5.1.1 Operation Use Case

UC-1	Text and call 911 and contact favorites
Primary Actor	The user of the phone application
Precondition	The user must have the iSee Smart Glasses mobile app downloaded into their smartphone device and connected to their personal iSee Smart Glasses device. The user is logged into the application on the device homepage.
Success Guarantee	<ol style="list-style-type: none">1. User says, “Can iSee call/text 911/contact name”2. iSee Smart Glasses sends the request to the mobile application3. Mobile application checks to see if the contact name is saved in their Favorite Contacts4. iSee Smart Glasses dials up the number successfully and user can communicate through the glasses via speakers

Extension	<ol style="list-style-type: none"> 1. The contact name the user requested is not in their favorites list <ol style="list-style-type: none"> a. The user must enter the contact information on the iSee Smart Glasses mobile application
Operations	<p>sendText() – calls the operation to send a text message sendLocation() – calls and sends the gps location callHelp() – function calls the phone function to call a pre dialed emergency number</p>

UC-2	Location finding via GPS
Primary Actor	The user of the phone application
Precondition	The user must have the iSee Smart Glasses mobile app downloaded into their smartphone device and connected to their personal iSee Smart Glasses device. The user is logged into the application on the device homepage.
Success Guarantee	<ol style="list-style-type: none"> 1. User logs into their account on the iSee Smart Glasses mobile application 2. User selects the “Find My Glasses” button 3. User is redirected to the locating page titled “Find My Glasses” with a changing description that says “Closer!” 4. The iSee Smart Glasses will automatically make the volume of their speakers to the highest level so he user can hear the ringing of the device 6. Once the user locates their iSee Smart Glasses device the mobile application will say “Hooray!”
Extension	
Operations	locateGlasses() - activates the GPS and location system

UC-3	Using voice assistance
Primary Actor	The user of the phone application
Precondition	The user must have the iSee Smart Glasses mobile app downloaded into their smartphone device and connected to their personal iSee Smart Glasses device. The user is logged into the application on the device homepage.
Success Guarantee	<ol style="list-style-type: none"> 3. User commences a command by saying “Can iSee _____” 4. Valid commands are: “Can iSee

	<ul style="list-style-type: none"> a. Text 911 / contact name b. Call 911 / contact name c. The distance calculator d. My pulse e. My glucose level
Extension	<p>2. User says an invalid command</p> <ul style="list-style-type: none"> a. iSee Smart Glasses will reply, “Sorry, that is an invalid command, please repeat a valid command.”
Operations	voiceActivation() - activates the voice assistance mode

UC-4	Calculating distance between user and a destination the user sees
Primary Actor	The user of the phone application
Precondition	The user must have the iSee Smart Glasses mobile app downloaded into their smartphone device and connected to their personal iSee Smart Glasses device. The user is logged into the application on the device homepage.
Success Guarantee	<p>5. User says, “Can iSee the distance calculator”</p> <p>6. iSee Smart Glasses follows up with a response asking, “Where do you need to calculate distance to?”</p> <p>7. User would respond, for example, “the distance to the building in front of me.”</p> <p>8. iSee Smart Glasses receives the location name and transfers the info to their iSee Smart Glasses mobile application</p>
Extension	<p>2. User asks for a distance to a building iSee Smart Glasses cannot locate</p> <ul style="list-style-type: none"> a. iSee Smart Glasses will reply, “Sorry, cannot locate the destination, please request another location.”
Operations	distanceCalculator() - opens up camera for distance calculation

UC-5	Detecting if the user is having a heart attack
Primary Actor	The user of the phone application
Precondition	The user must have the iSee Smart Glasses mobile app downloaded into their smartphone device and connected to their personal iSee Smart Glasses device. The user is logged into the application on the device homepage.

Success Guarantee	<ul style="list-style-type: none"> 5. iSee Smart Glasses uses the FBG sensor to detect the user's pulse wave length and glucose level 6. If the user's heart rate is 120 - 150 bpm iSee Smart Glasses will say, "Detecting a heart attack, would you like to call 911?" 7. If the user replies yes, iSee Smart Glasses will automatically call 911. 8. If the user replies no, iSee Smart Glasses will end the heart attack protocol.
Extension	
Operations	detectHeartAttack() - calls heart attack detection function

UC-6	Check User Pulse
Primary Actor	The user of the phone application
Precondition	The user must have the iSee Smart Glasses mobile app downloaded into their smartphone device and connected to their personal iSee Smart Glasses device. The user must be wearing the device on their head.
Success Guarantee	<ul style="list-style-type: none"> 5. User says, "Can iSee the my pulse" 6. iSee Smart Glasses follows up with a response stating the user's heart rate and asks if the user would like to log the results 7. User would respond with a yes or no, confirming the action 8. iSee Smart Glasses will then take the appropriate action based on the answer, recording the log if desired
Extension	
Operations	callPulse() - fetches the pulse data from the glasses

UC-7	Check User Glucose Levels
Primary Actor	The user of the phone application
Precondition	The user must have the iSee Smart Glasses mobile app downloaded into their smartphone device and connected to their personal iSee Smart Glasses device. The user must be wearing the device on their head.
Success Guarantee	<ul style="list-style-type: none"> 5. User says, "Can iSee the my pulse" 6. iSee Smart Glasses follows up with a response stating the user's heart rate and asks if the user would like to log the results

	<p>7. User would respond with a yes or no, confirming the action</p> <p>8. iSee Smart Glasses will then take the appropriate action based on the answer, recording the log if desired</p>
Extension	
Operations	callGlucose() - fetches the glucose data from the glasses

UC-8	Taking Photos
Primary Actor	The user of the phone application
Precondition	The user must have the iSee Smart Glasses mobile app downloaded into their smartphone device and connected to their personal iSee Smart Glasses device. The user is logged into the application on the device homepage.
Success Guarantee	<p>2. iSee Smart Glasses uses the Sony Sensor to capture light at a focal length of 2.8mm or 16mm</p>
Extension	
Operations	capture()- takes a picture with the glasses

UC-9-9.1	Change Volume up and down
Primary Actor	The user of the phone application
Precondition	The user must have the iSee Smart Glasses mobile app downloaded into their smartphone device and connected to their personal iSee Smart Glasses device. The user is logged into the application on the device homepage.
Success Guarantee	The user can hold or tap the volume 1 button to control volume level of the glass
Extension	<p>3. The user can use their smartphone to control volume of the glass</p>
Operations	volumeUp() - turns volume of device up volumeDown() - turns volume of device down

UC- 10 -10.1	Create and Login iSee Smart Glass
Primary Actor	The user of the phone application
Precondition	The user must have the iSee Smart Glasses mobile app downloaded into their smartphone device and connected to their personal iSee Smart Glasses device. The user is logged into the application on the device homepage.
Success Guarantee	2. The user can create an iSee SmartGlass account by registering the device with us.
Extension	2. Additionally the user can use google credentials to sign into the account
Operations	createAccount() - creates an account for the application with the firebase server login() - logs into the application

UC- 11	Locate iSee Smart Glasses
Primary Actor	The user of the phone application
Precondition	The user must have the iSee Smart Glasses mobile app downloaded into their smartphone device and connected to their personal iSee Smart Glasses device. The user is logged into the application on the device homepage.
Success Guarantee	3. The user goes to the mobile application on their phone and taps the find button. 4. The application pings the glass location using bluetooth or GPS.
Extension	
Operations	locateGlasses() - activates the GPS and location system

UC-12	View user's current pulse count and glucose level in history log
Primary Actor	The user of the phone application
Precondition	The user must have the iSee Smart Glasses mobile app downloaded into their smartphone device and connected to their personal iSee Smart Glasses device. The user is logged into the application on the device homepage
Success Guarantee	4. This user goes into their gallery on their phone to view all the pictures they have taken from the glasses. They are saved to the users phone and the phone storage will manage the pictures.

	<p>5. The user clicks Health Log bar to view their pulse count and glucose levels. They are able to view their current pulse and glucose levels at real time.</p> <p>6. The user wears the glasses on their head with the blood glucose sensor working and the heart rate monitor sensor working, both in contact with the user's skin.</p>
Extension	2. The user clicks the Health Log button and an error page pops up.
Operations	viewHistoryLog() - views the user glucose levels on the app and fetches data

UC-13	View photos the user has taken from the iSee Smart Glasses application.
Primary Actor	The user of the phone application
Precondition	The user must have the iSee Smart Glasses mobile app downloaded into their smartphone device and connected to their personal iSee Smart Glasses device. The user is logged into the application on the device homepage
Success Guarantee	<p>3. The user clicks the Photo Gallery button and is redirected to the phone photo gallery on the device. This gives the option, depending on the device, to manage the photos of the gallery.</p> <p>4. The photos are saved onto the phone in a local storage folder.</p>
Extension	2. The user clicks the Photo Gallery button and an error page pops up.
Operations	gallery() - opens the photo gallery of the phone to view photos

UC-14-14.2	View, add and remove saved favorites
Primary Actor	The user of the phone application
Precondition	The user must have the iSee Smart Glasses mobile app downloaded into their smartphone device and connected to their personal iSee Smart Glasses device. The user is logged into the application on the device homepage
Success Guarantee	<p>4. The user clicks on the Favorites button and a list of favorites page pops up.</p> <p>5. The favorites page has an option to add, remove or delete favorites to edit them.</p> <p>6. The favorites page has an option to back out from the favorites page.</p>

Extension	2. The user clicks the Favorites button and an error page pops up.
Operations	savedFavorites() - fetches the list of favorites saved addFavorite() - adds a favorite to the list of favorites, condition max being 5 removeFavorite() - removes a favorite from the list of favorites

UC-15-15.1	View and edit saved locations the user logged using the distance calculator via voice assistance
Primary Actor	The user of the phone application
Precondition	The user must have the iSee Smart Glasses mobile app downloaded into their smartphone device and connected to their personal iSee Smart Glasses device. The user is logged into the application on the device homepage
Success Guarantee	<ul style="list-style-type: none"> 3. The user clicks on the Saved Locations button and a list of recent saved locations come up, in chronological order. 4. The saved locations, when tapped on, opens a pin drop with the apple maps application on that location.
Extension	<ul style="list-style-type: none"> 4. The user clicks the Saved Locations button and an error page pops up. 5. The user clicks on a location that has been saved, and does not launch the apple maps. 6. The user clicks on the saved location and nothing happens or an error message pops up.
Operations	savedLocationsDC() - fetches the list of favorites the user has been to on google maps app addSavedLocation() - saves a location to google maps favorite, drops a pin

UC-16	View the battery life of their iSee Smart Glasses
Primary Actor	The user of the phone application
Precondition	The user must have the iSee Smart Glasses mobile app downloaded into their smartphone device and connected to their personal iSee Smart Glasses device. The user is logged into the application on the device homepage
Success Guarantee	<ul style="list-style-type: none"> 2. The user is logged in at the homepage and the top left displays the battery power of the glasses.
Extension	<ul style="list-style-type: none"> 2. The user is logged in and there is no connection to the device, no battery

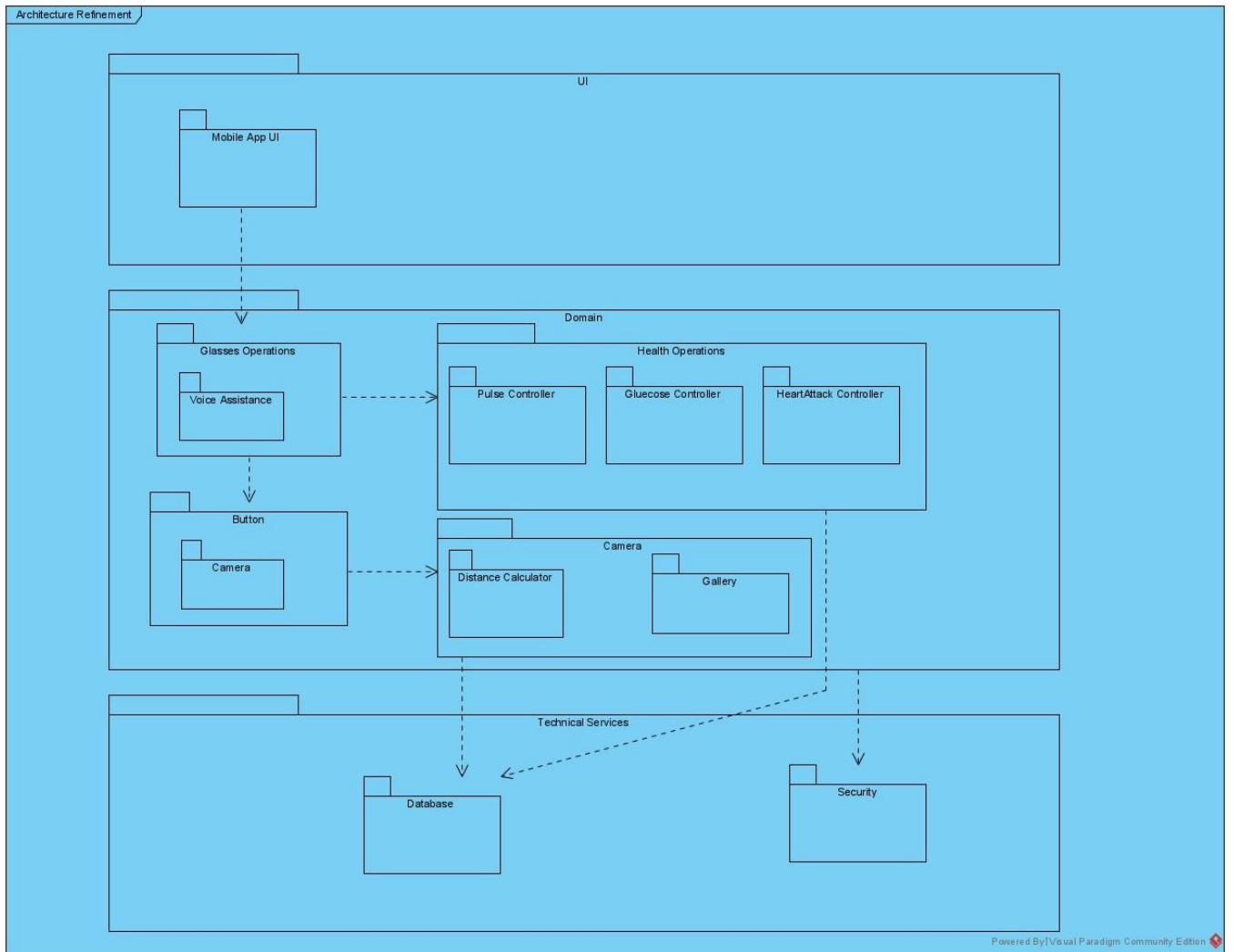
	power is displayed on the app.
Operations	viewBattery() - fetches the battery life of the smart glasses

7.5.2. Forward Traceability Matrix

Use Case	UC Diag	Seq. Diag.	Packag e Diag.	State Chart Diag.	Activity Diag.	Concept. Class Diag.	Domain Model	Class Diag.	Object Diag.	Interact. Diag.	Comp. Diag.	Design Class Diag.	Class Diag. (GRASP)	Deploy. Diag.
UC-1	X	X		X	X			X	X	X		X	X	
UC-2		X									X	X	X	
UC-3		X	X	X	X	X	X					X	X	X
UC-4			X											
UC-5		X										X	X	
UC-6.0		X	X	X								X	X	
UC-6.1		X	X	X								X	X	
UC-7.0		X	X	X							X	X	X	
UC-7.1		X	X	X							X	X	X	
UC-8			X	X		X	X				X	X	X	
UC-9.0			X	X		X	X					X	X	
UC-9.1			X	X										
UC-10. 0		X												
UC-10. 1		X				X	X							
UC-11														
UC-12		X												
UC-13		X		X										X
UC-14. 0		X			X									X

UC-14. 1		X												X
UC-14. 2		X												X
UC-15		X												
UC-15. 1		X												
UC-16														

7.5.3. Architectural Layer Refinement



7.5.4. CRC Cards

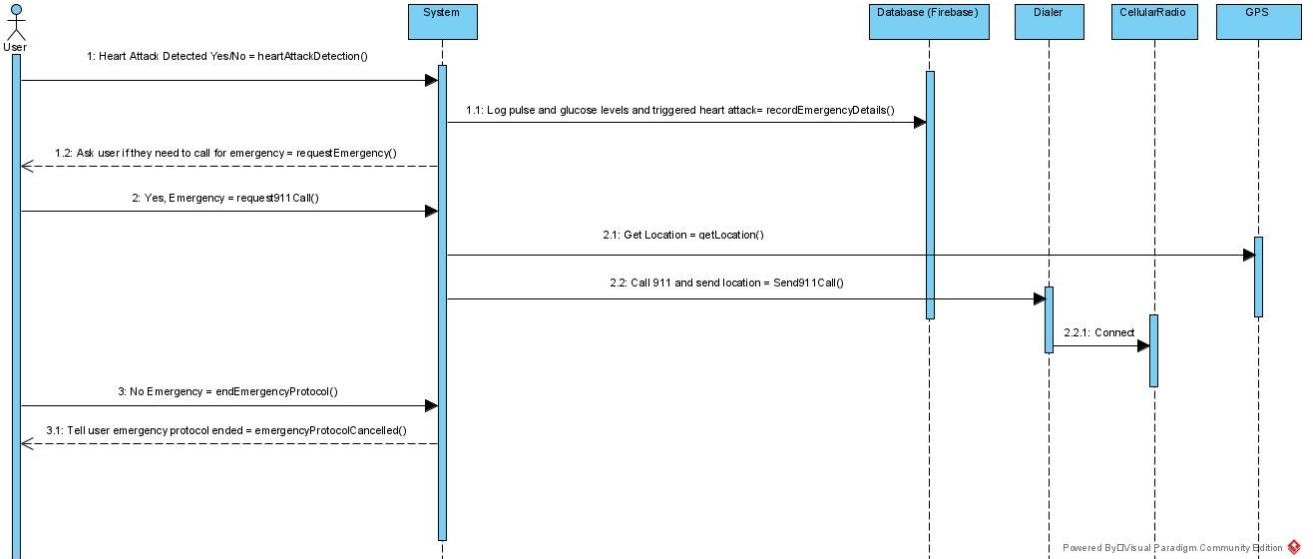
FRONT			BACK		
Class Name: CallOrText ID: 1 Type:			Attributes: sendText() sendLocation() callHelp()		
Description: The user can text and call 911 and their contact favorites by using voice activation.		Associated Use Cases:	Relationships: Generalization (a-kind-of): Text and call Aggregation (has-parts): Event Other Associations:		
Responsibilities Calling 911 or a contact favorite Texting 911 or a contact favorite		Collaborators Favorites			
Class Name: FindLocation ID: 2 Type: Concrete			Attributes: email (text)		
Description: The location of the iSee Smart Glasses is monitored via GPS so that the user can locate their glasses on the iSee Smart Glasses app if they are lost.		Associated Use Cases:	Relationships: Generalization (a-kind-of): Location Finding Aggregation (has-parts): Event Other Associations:		
Responsibilities Locate the user's iSee Smart Glasses via the iSee Smart Glasses app		Collaborators			
Class Name: VoiceAssistance ID: 3 Type: Concrete			Attributes: email (text) password (text)		
Description: The user can use voice assistance, triggering it by saying "Can I see (insert request here)" to access certain commands.		Associated Use Cases:	Relationships: Generalization (a-kind-of): Virtual Assistant Aggregation (has-parts): Event Other Associations:		
Responsibilities Following user's voice commands		Collaborators Application			
Class Name: DistanceCalculator ID: 4 Type: Concrete			Attributes: link (text)		
Description: The user can pin a location by using the iSee Smart Glass's distance calculator, saying, "Can iSee the distance between me and the building in front of me"		Associated Use Cases:	Relationships: Generalization (a-kind-of): Application Aggregation (has-parts): Google Maps Other Associations:		
Responsibilities Return to the user the distance between them and a location they can see.		Collaborators			
Class Name: HeartAttack ID: 5 Type: Concrete			Attributes: email (text)		
Description: iSee Smart glasses will detect if the user is having a heart attack and will dial 911 for immediate emergency.		Associated Use Cases:	Relationships: Generalization (a-kind-of): Emergency Protocol Aggregation (has-parts): Event Other Associations:		
Responsibilities Call 911 if a heart attack is detected.		Collaborators Checking the user's pulse			
Class Name: PulseCounter ID: 6 Type: Concrete			Attributes: name (text) subject (text)		
Description: The user can check and log their pulse by activating using the voice command "Can iSee my pulse," and verify if they want to record it in the log via app.		Associated Use Cases:	Relationships: Generalization (a-kind-of): Application Aggregation (has-parts): Event Other Associations:		
Responsibilities Logging the users pulse Checking the user's glucose level		Collaborators			
Class Name: GlucoseCounter ID: 7 Type: Concrete			Attributes: tasks (task)		
Description: The user can check and log their sugar and glucose levels by activating using the voice command "Can iSee my pulse," and verify if they want to record it in the log via app.		Associated Use Cases:	Relationships: Generalization (a-kind-of): Application Aggregation (has-parts): Event Other Associations:		
Responsibilities Logging the users glucose levels Checking the user's glucose level		Collaborators			

<p>Class Name: Camera ID: 8 Type: Concrete</p> <p>Description:</p> <p>Users will have the option to take photos and record videos by clicking the button 1 or voice activation.</p> <p>Associated Use Cases:</p> <p>Responsibilities:</p> <p>Take a photo or record a video</p> <p>Collaborators</p>	<p>Attributes:</p> <p>Relationships:</p> <p>Generalization (a -kind-of):</p> <p>Aggregation (has-parts): Event</p> <p>Other Associations:</p>
<p>Class Name: Volume ID: 9 Type: Concrete</p> <p>Description:</p> <p>Change the volume up</p> <p>Change the volume down</p> <p>Associated Use Cases:</p> <p>Responsibilities:</p> <p>Change the volume</p> <p>Collaborators</p>	<p>Attributes:</p> <p>Relationships:</p> <p>Generalization (a -kind-of):</p> <p>Aggregation (has-parts): Event</p> <p>Other Associations:</p>
<p>Class Name: Create Account ID: 10 Type: Concrete</p> <p>Description:</p> <p>Users can create an iSee account and register their smart glasses</p> <p>Associated Use Cases:</p> <p>Responsibilities:</p> <p>Login to user account for mobile application</p> <p>Collaborators</p>	<p>Attributes:</p> <p>Relationships:</p> <p>Generalization (a -kind-of):</p> <p>Aggregation (has-parts): Event</p> <p>Other Associations:</p>
<p>Class Name: Locator ID: 11 Type: Concrete</p> <p>Description:</p> <p>Users can use a laptop or smartphone to find their glasses using GPS. The glasses will be pinged when they are found.</p> <p>Associated Use Cases:</p> <p>Responsibilities:</p> <p>Find glasses when you lost them</p> <p>Collaborators</p>	<p>Attributes:</p> <p>Relationships:</p> <p>Generalization (a -kind-of):</p> <p>Aggregation (has-parts): Event</p> <p>Other Associations:</p>
<p>Class Name: ViewHealthHistory ID: 12 Type: Concrete</p> <p>Description: This user can view a full overview of the health log in two sections, one will be displaying the current pulse, the second part will have the current glucose level</p> <p>Associated Use Cases:</p> <p>Responsibilities:</p> <p>View history of glucose logs</p> <p>View history of heartrate logs</p> <p>Collaborators</p> <p>Glucose Logs</p> <p>Heartrate Logs</p> <p>Application</p>	<p>Attributes:</p> <p>glucoselog(text)</p> <p>heartratelog(text)</p> <p>Relationships:</p> <p>Generalization (a-kind-of): History Log</p> <p>Aggregation (has-parts): Application</p> <p>Other Associations: Cloud/Local Storage</p>

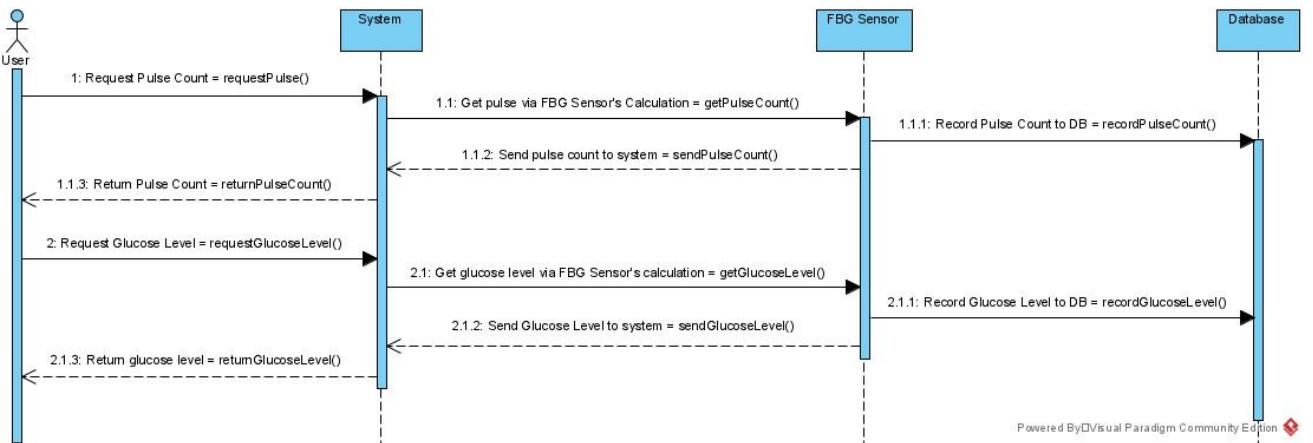
Class Name: ViewGallery ID: 13 Type: Concrete Description: This user goes into their gallery on their phone to view all the pictures they have taken from the glasses. They are saved to the users phone and the phone storage will manage the pictures. <table border="1"> <tr> <td>Responsibilities</td><td>Collaborators</td></tr> <tr> <td>View Photos taken by the device</td><td>Application Gallery</td></tr> </table>	Responsibilities	Collaborators	View Photos taken by the device	Application Gallery	Associated Use Cases: Attributes: Photo(image.jpg)
Responsibilities	Collaborators				
View Photos taken by the device	Application Gallery				
Class Name: ContactFavorites ID: 14 Type: Concrete Description: This user will have an interface of viewing which contacts they can add and delete to their list of user contacts in the application. This will be a list of people the user would like to call. <table border="1"> <tr> <td>Responsibilities</td> <td>Collaborators</td> </tr> <tr> <td>Add favorite Remove Favorite</td> <td>Application Favorites</td> </tr> </table>	Responsibilities	Collaborators	Add favorite Remove Favorite	Application Favorites	Associated Use Cases: Attributes: addFavorite(favorite) removeFavorite(favorite)
Responsibilities	Collaborators				
Add favorite Remove Favorite	Application Favorites				
Class Name: SavedLocations ID: 15 Type: Concrete Description: The user opens their application and will have a view to look at the saved locations that they have recently visited in a list. <table border="1"> <tr> <td>Responsibilities</td> <td>Collaborators</td> </tr> <tr> <td>Add saved location</td> <td>Application View Saved Locations</td> </tr> </table>	Responsibilities	Collaborators	Add saved location	Application View Saved Locations	Associated Use Cases: Attributes: savedLocationsDC(location)
Responsibilities	Collaborators				
Add saved location	Application View Saved Locations				
Class Name: BatteryLife ID: 16 Type: Concrete Description: The user wants to view the battery life of their glasses and know if they need to charge their device. They open the application on their phone to look at the status of the device. <table border="1"> <tr> <td>Responsibilities</td> <td>Collaborators</td> </tr> <tr> <td>Provides battery information of the glasses device</td> <td>Application Homescreen</td> </tr> </table>	Responsibilities	Collaborators	Provides battery information of the glasses device	Application Homescreen	Associated Use Cases: Attributes: displayBattery(batterylife)
Responsibilities	Collaborators				
Provides battery information of the glasses device	Application Homescreen				

7.5.5. Sequence Diagrams

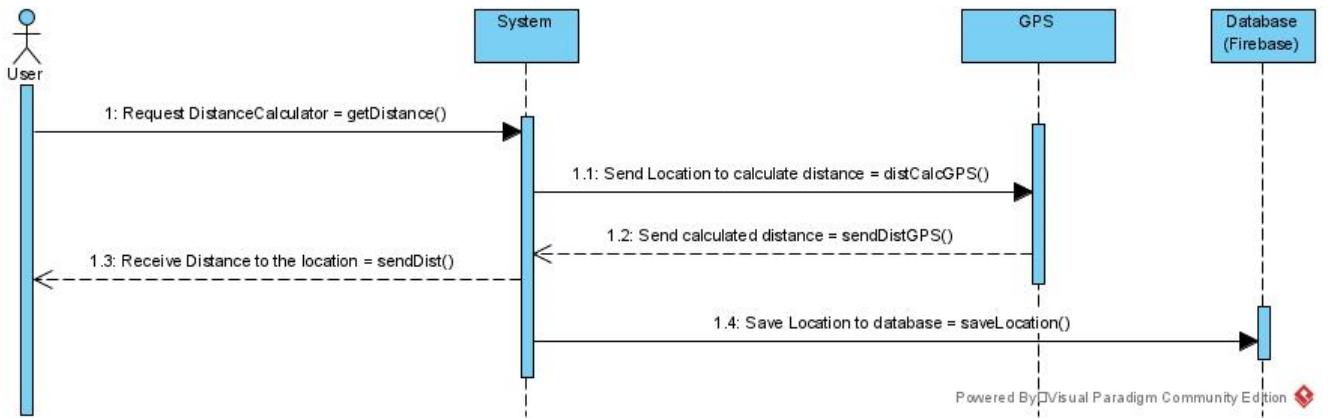
Emergency Sequence



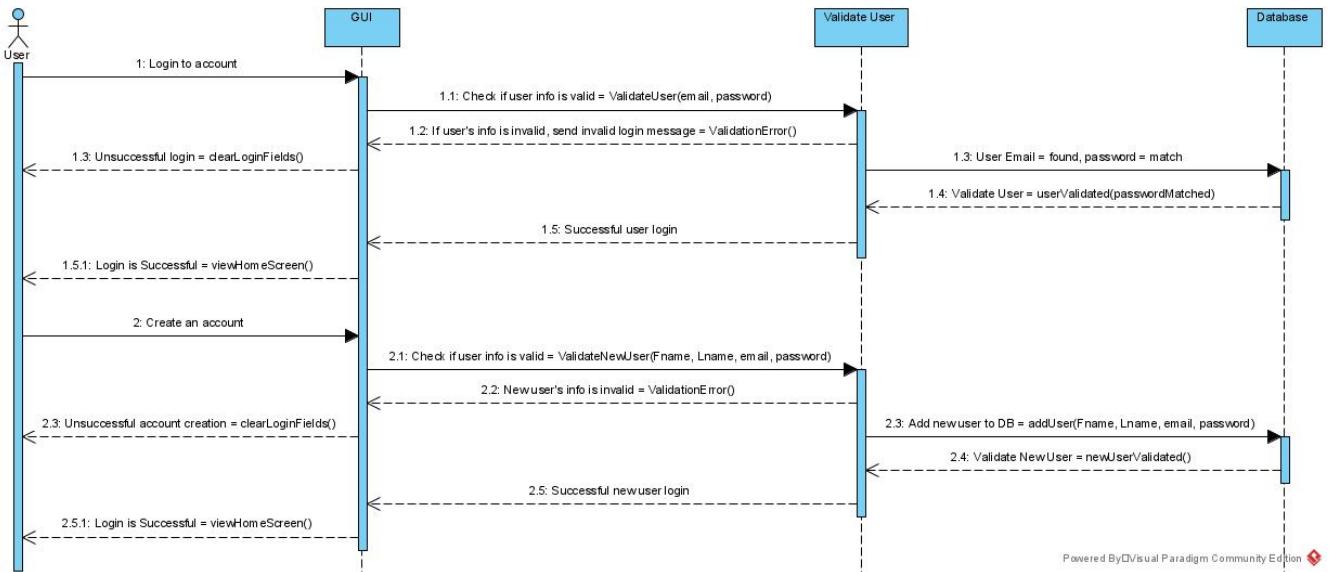
Pulse count and Glucose Levels



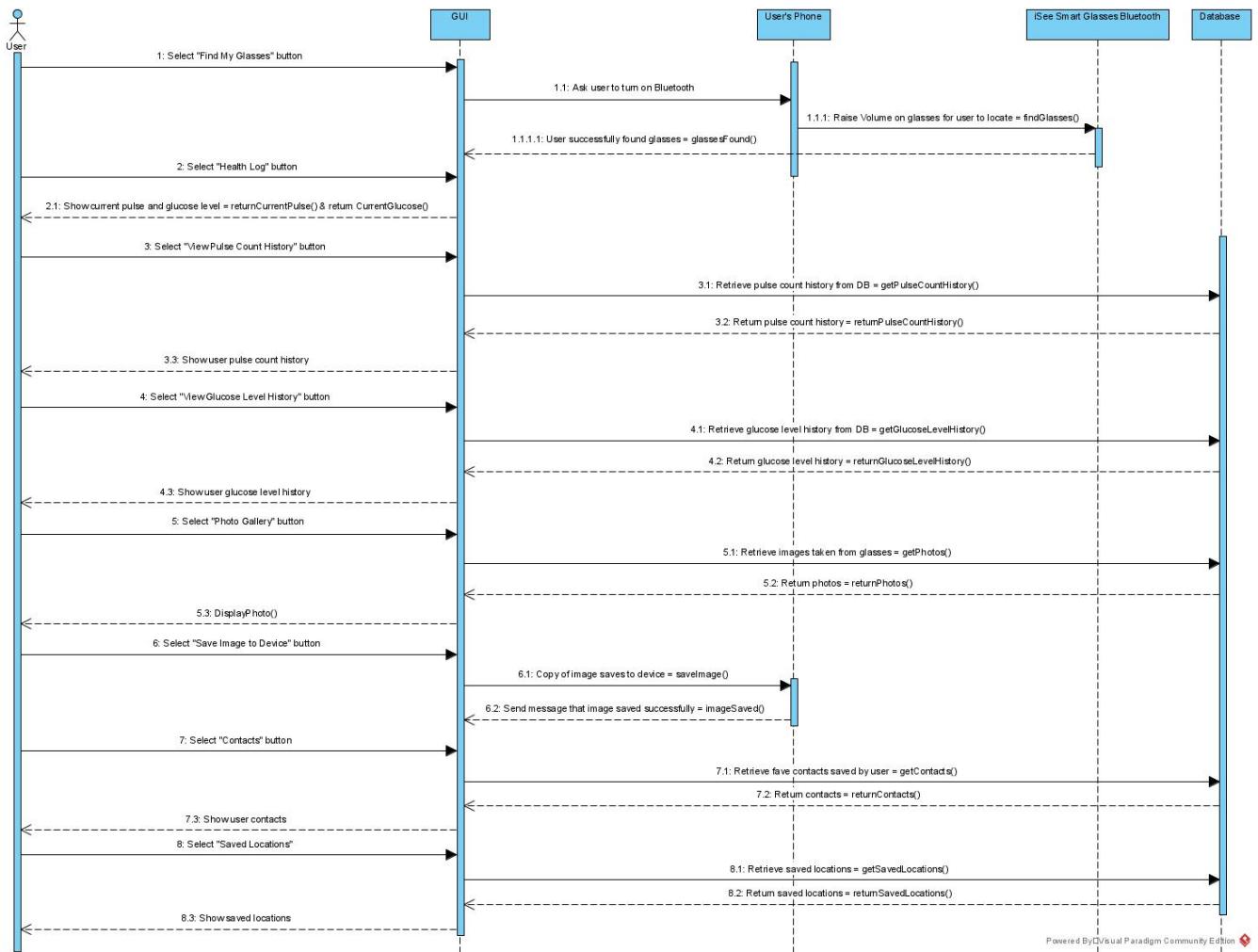
Distance Calculator



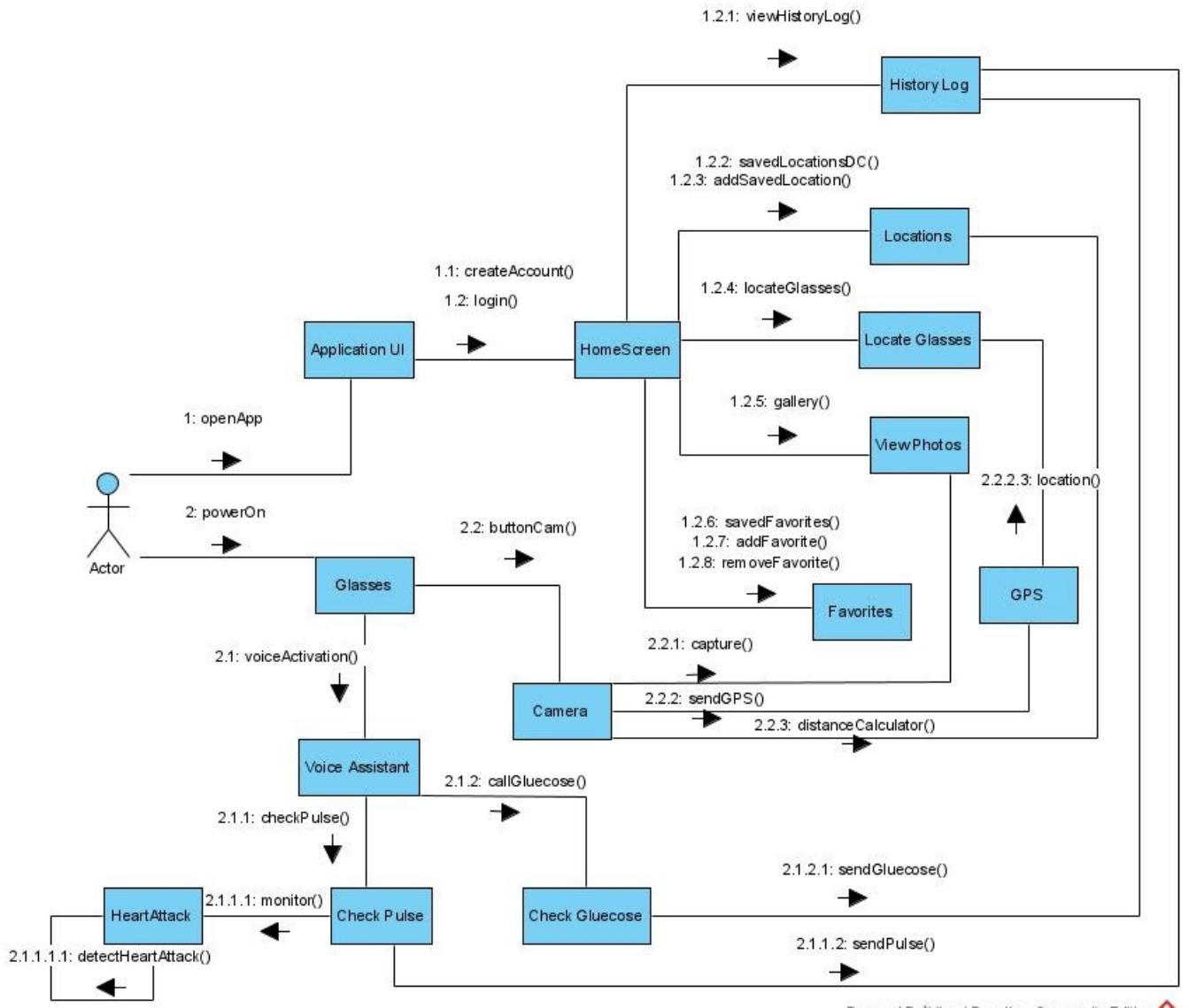
Create account on iSee Smart Glasses Mobile Application



iSee Smart Glasses Mobile Application

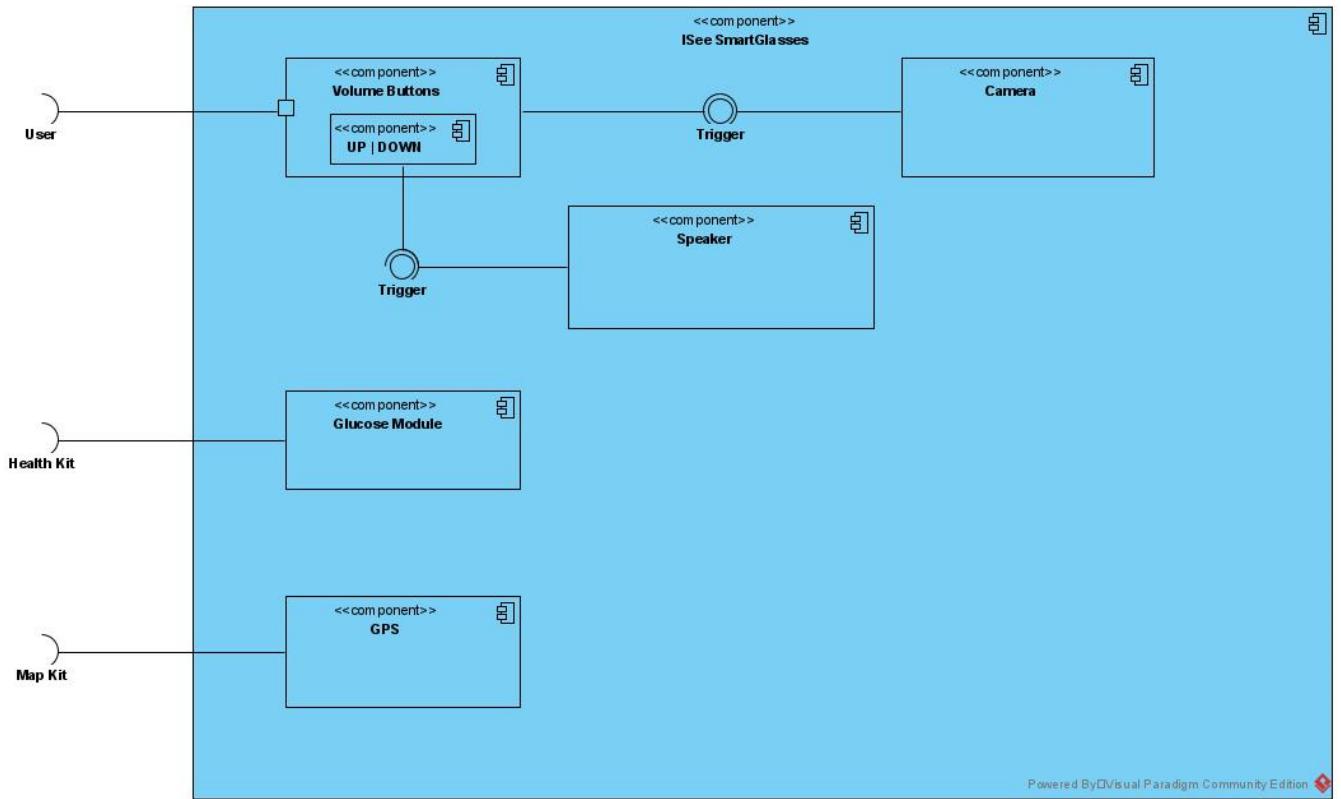


7.5.6. Interaction Diagram

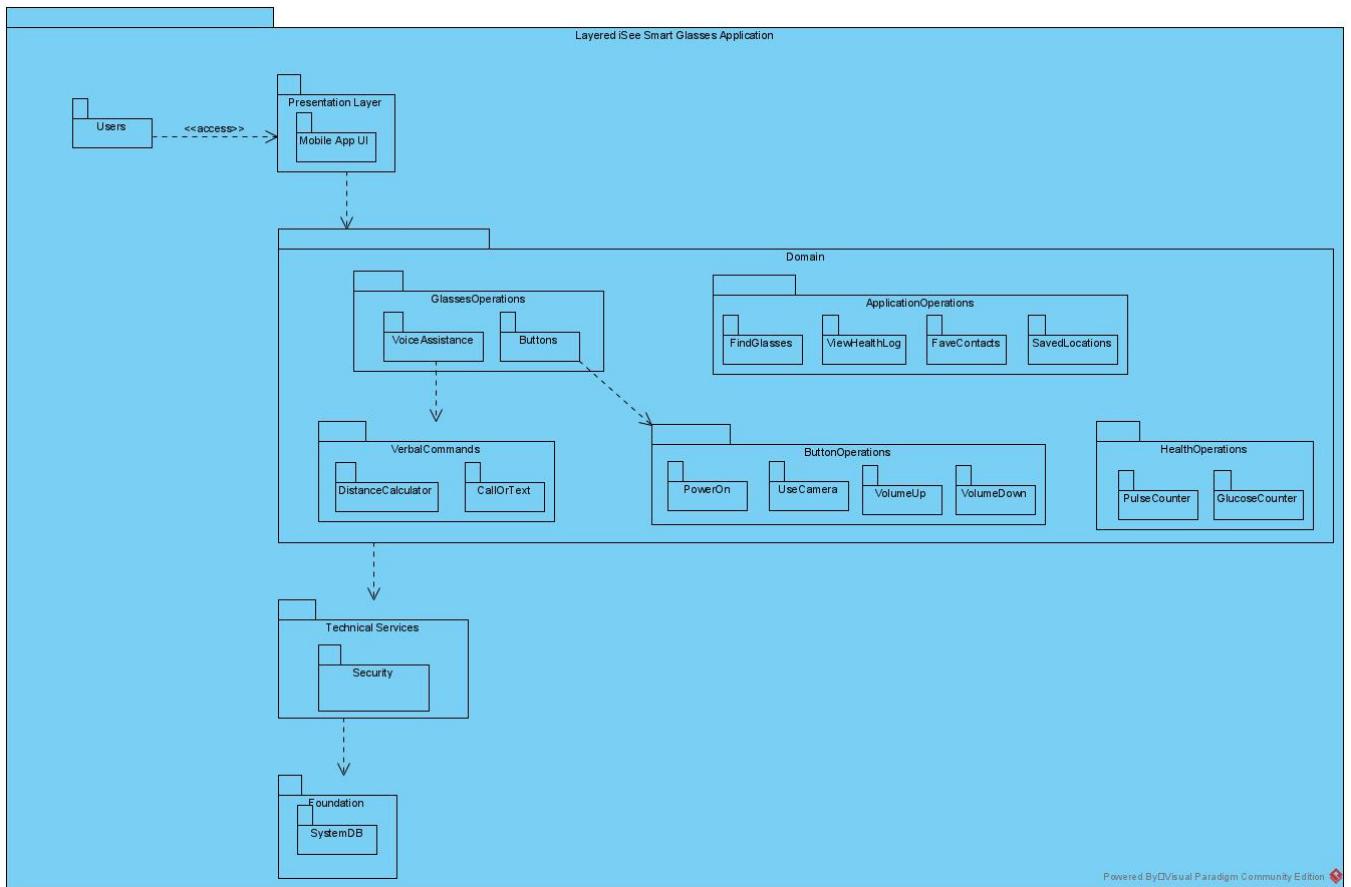


Powered By Visual Paradigm Community Edition

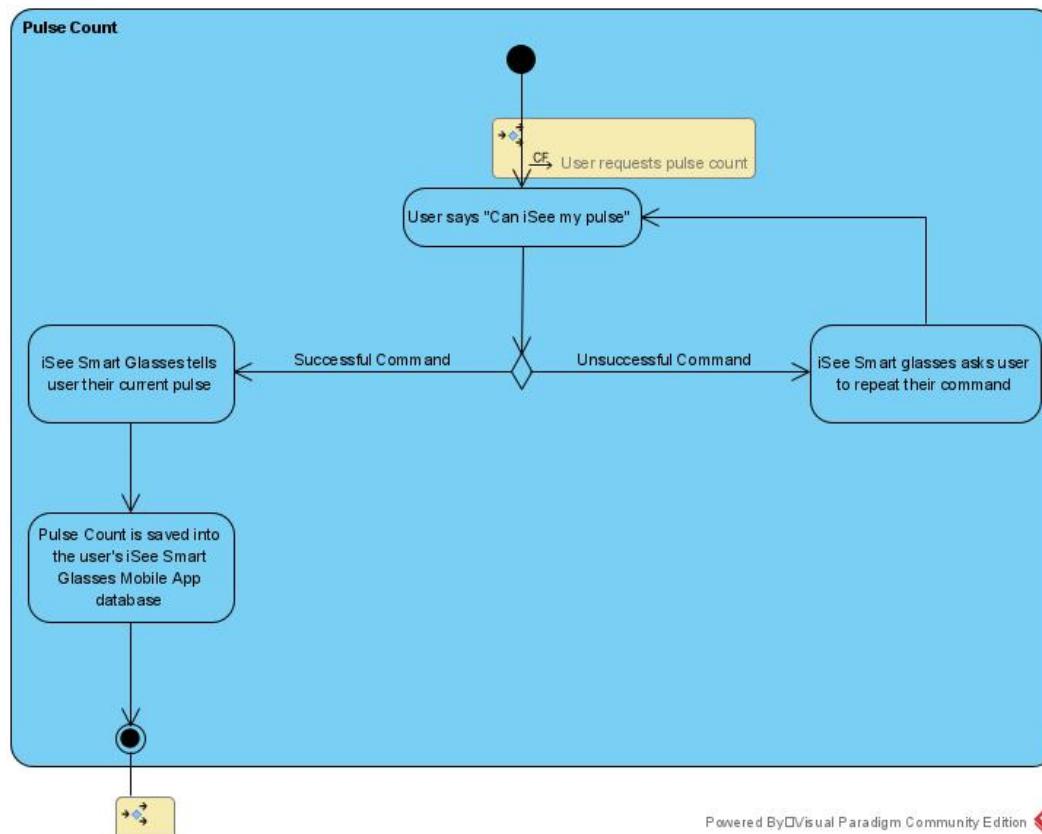
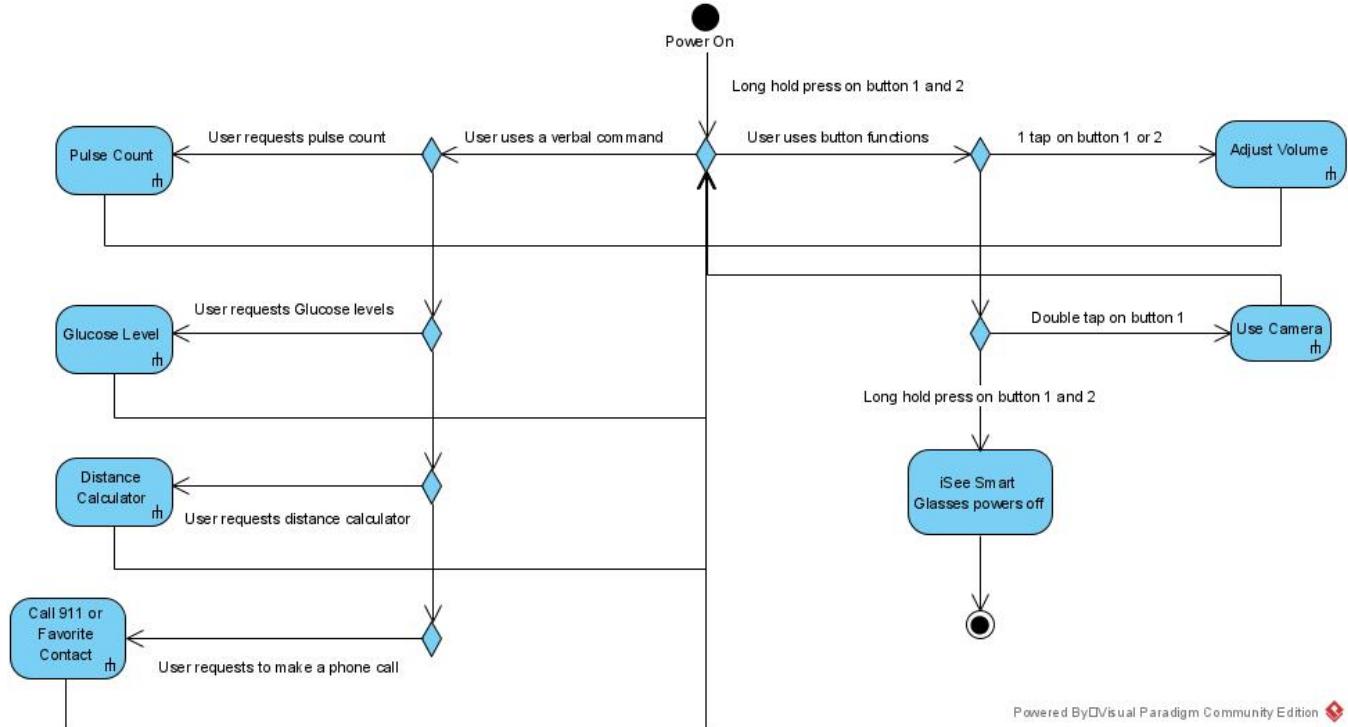
7.5.7. Component Diagram

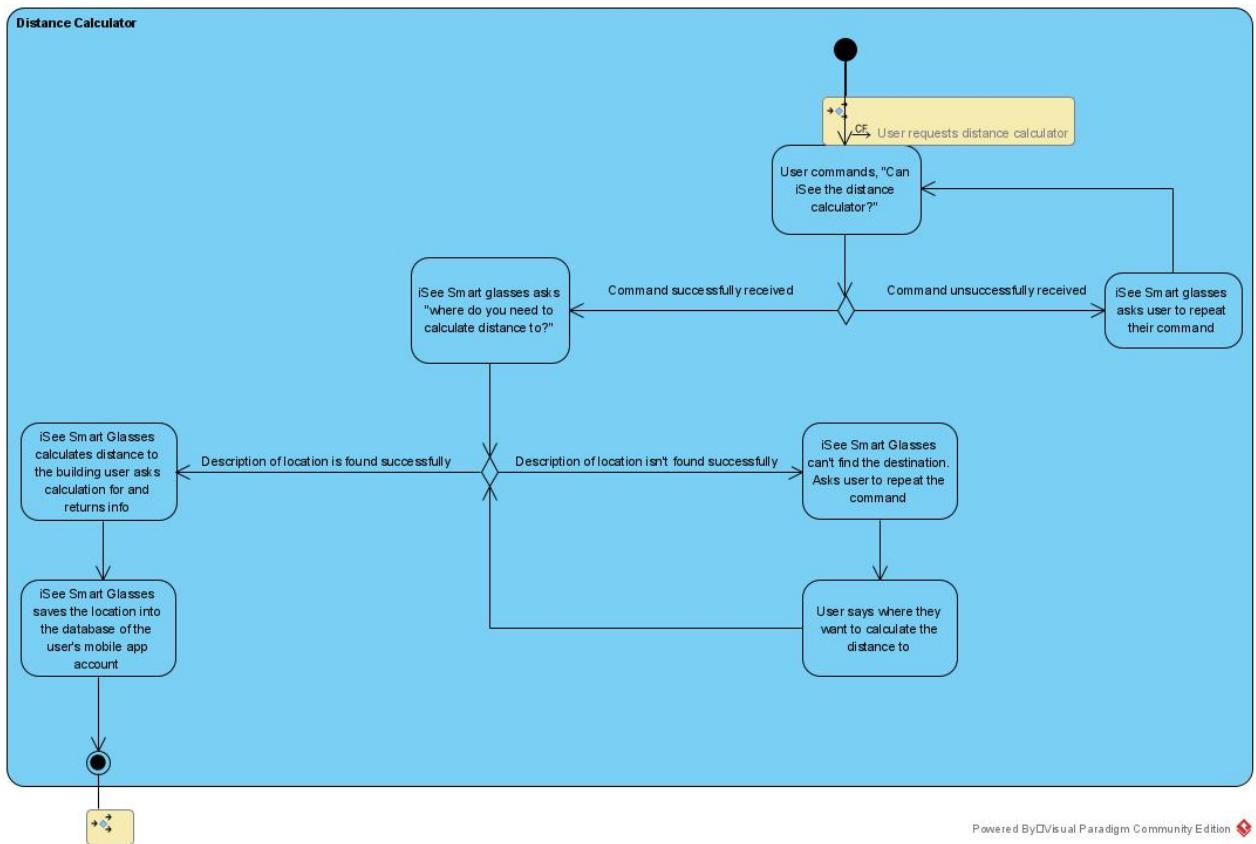
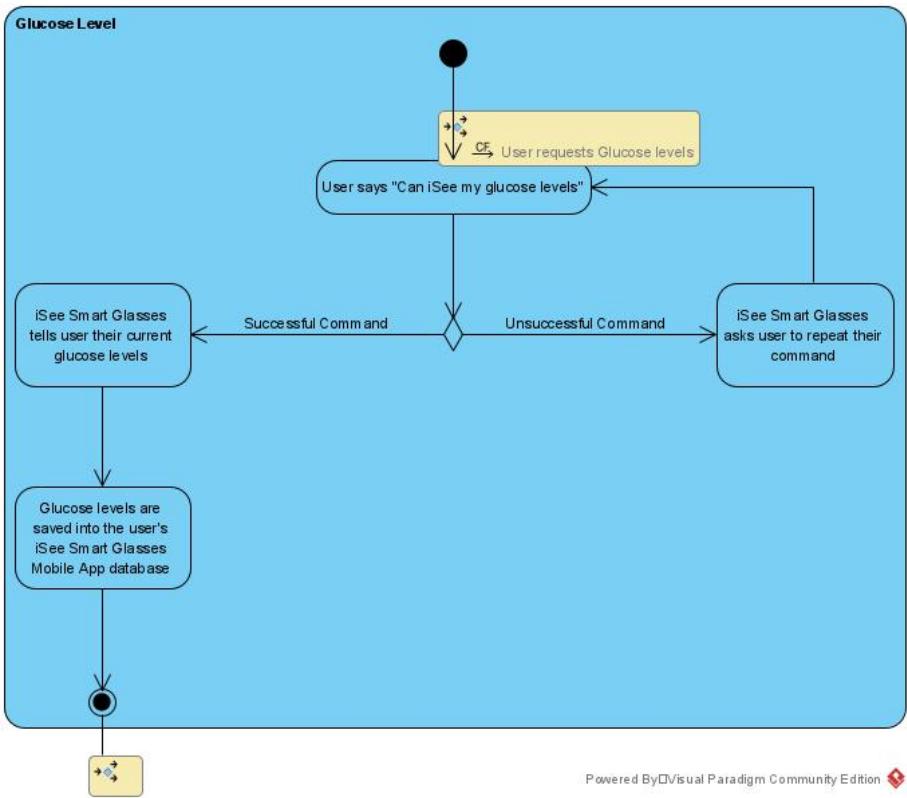


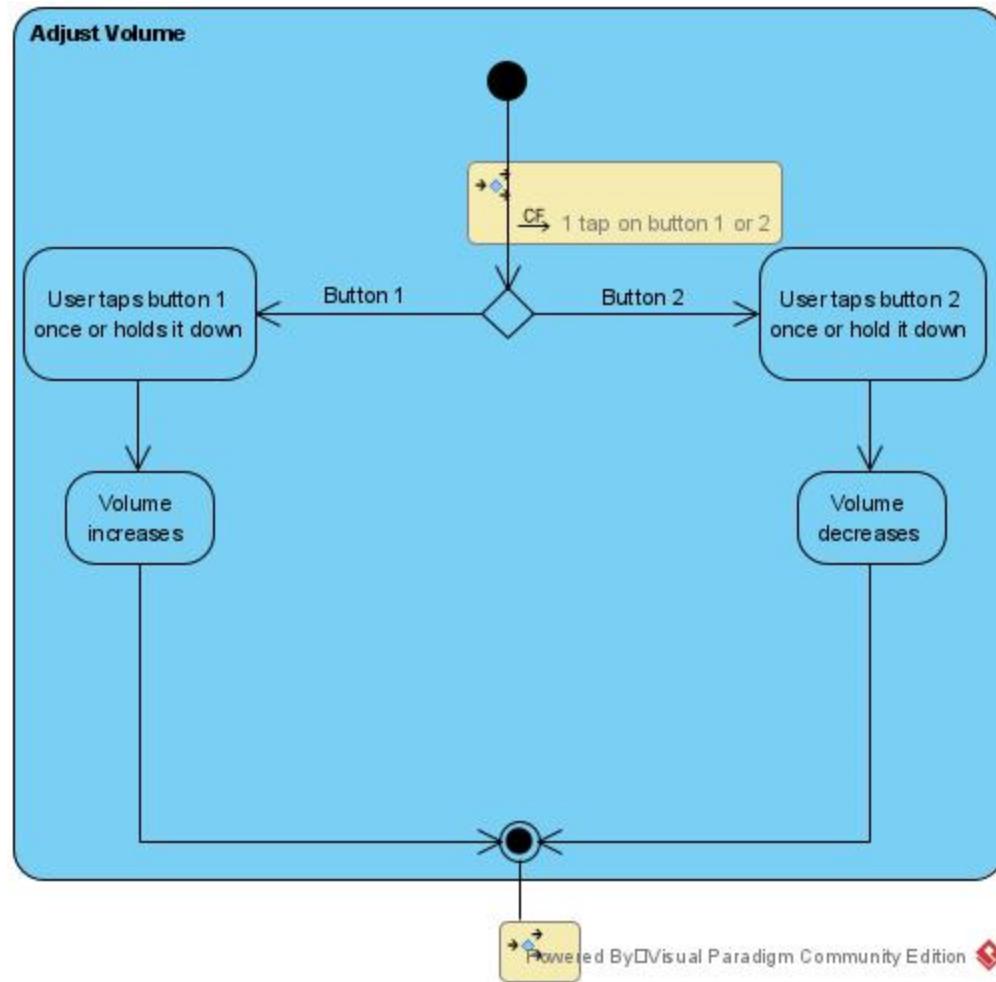
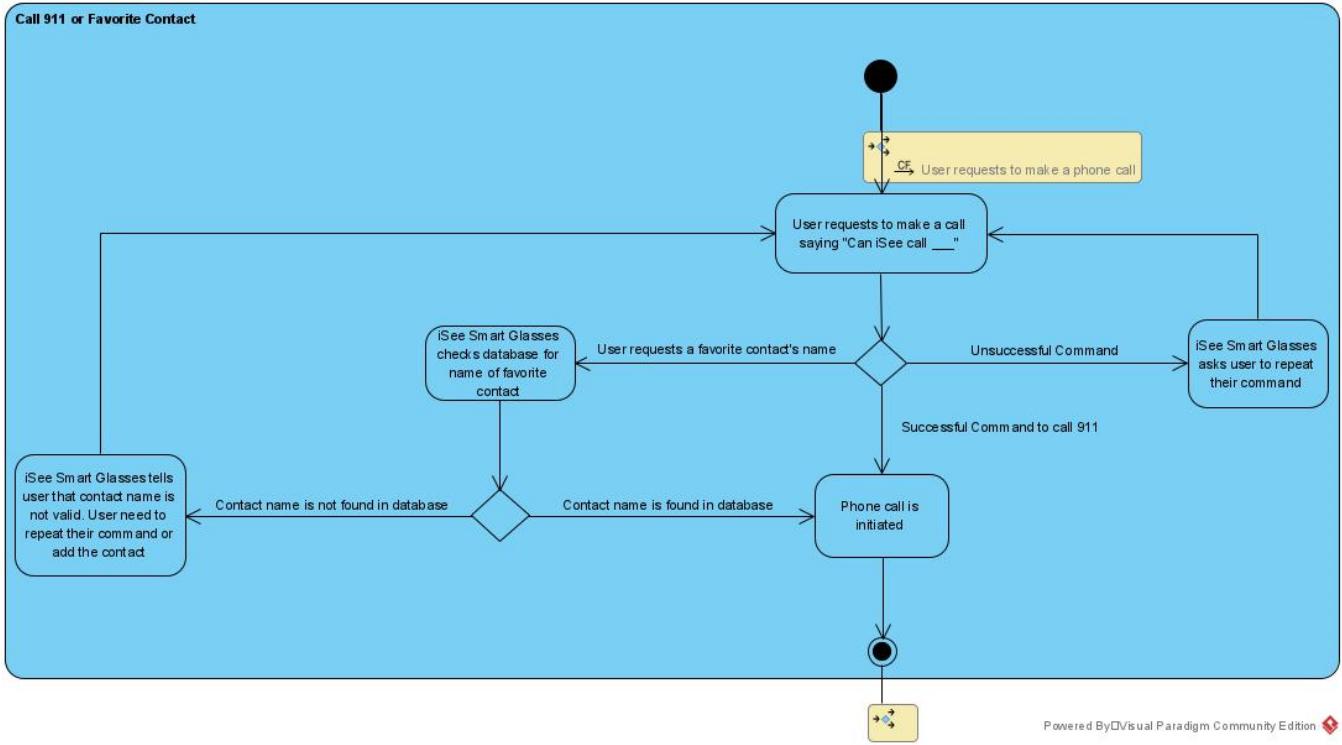
7.5.8. Package Diagram



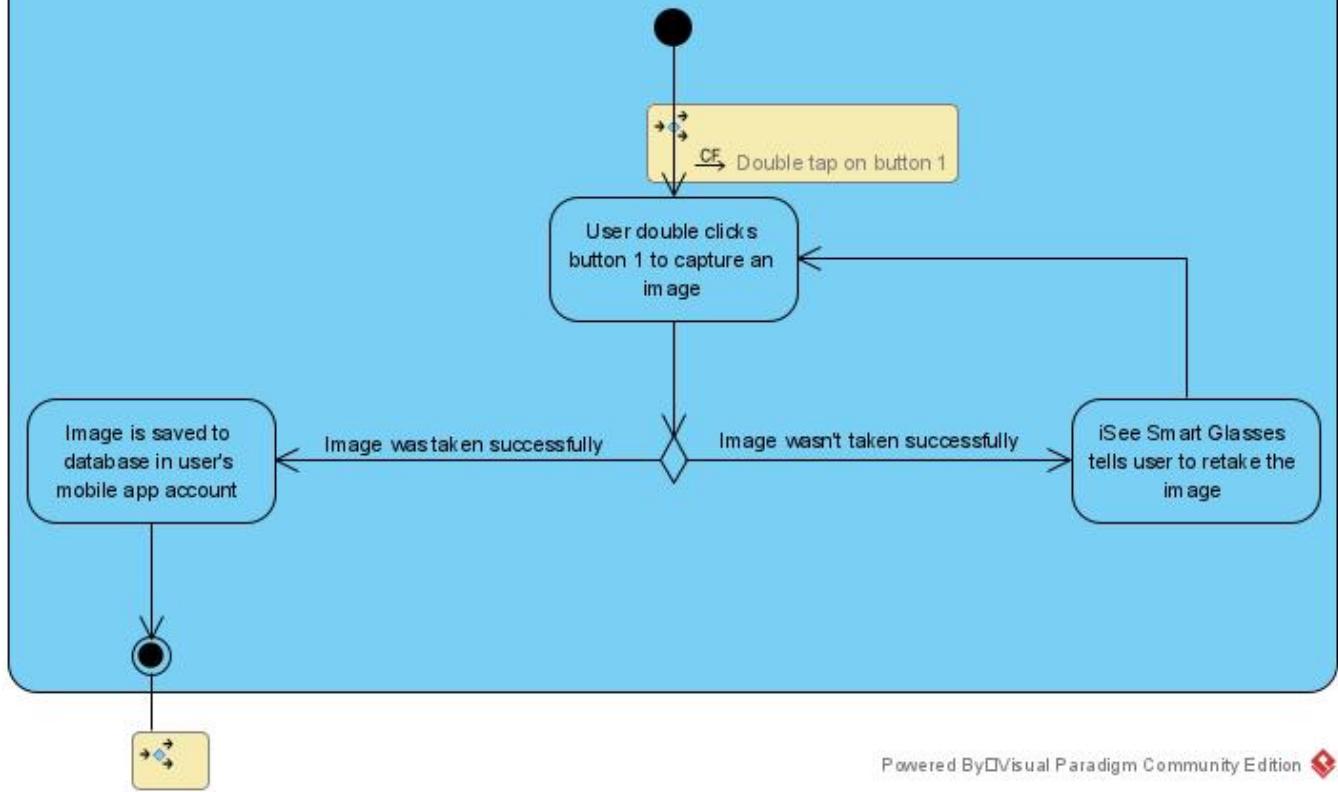
7.5.9. Activity Diagram





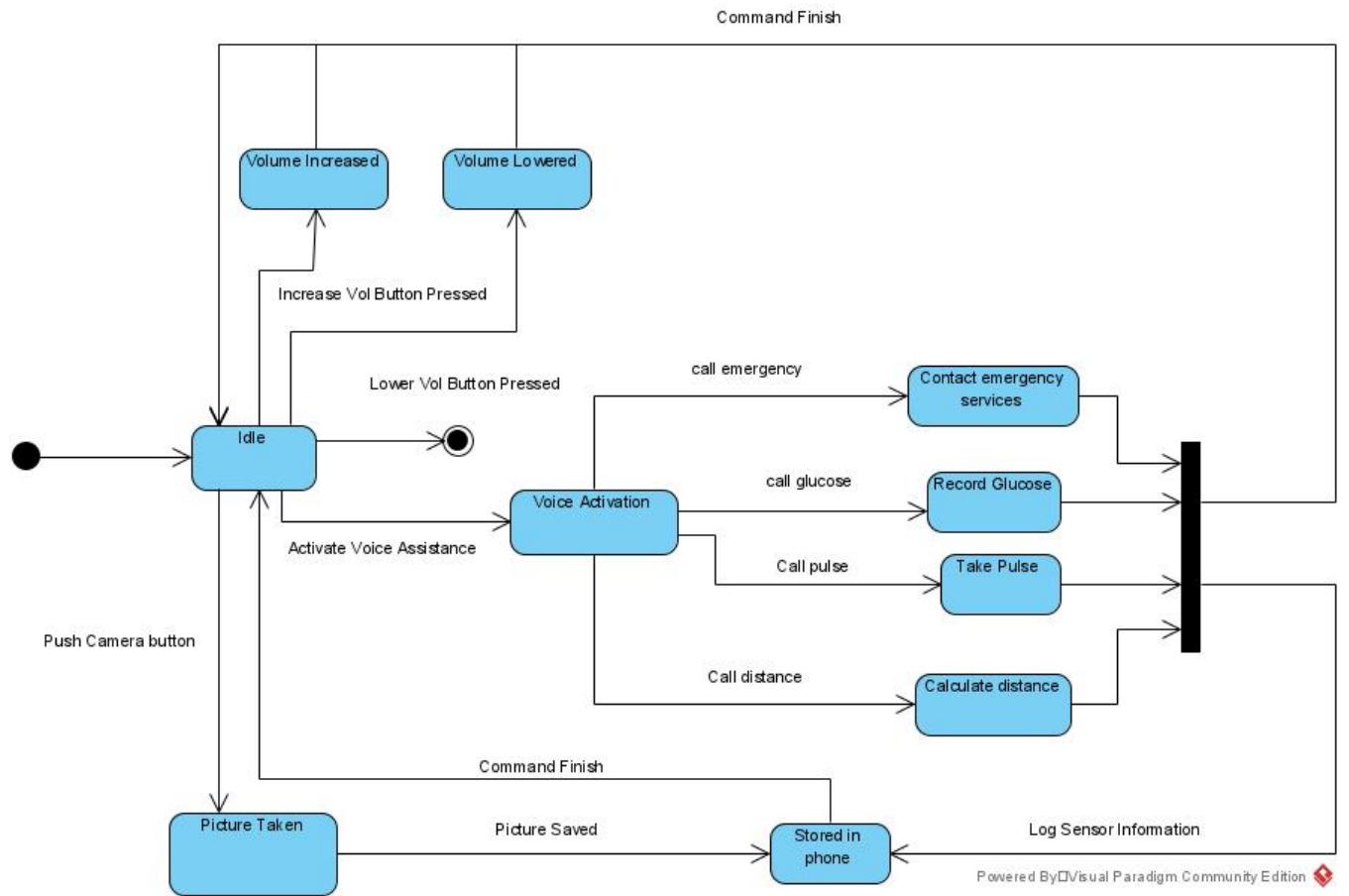


Use Camera

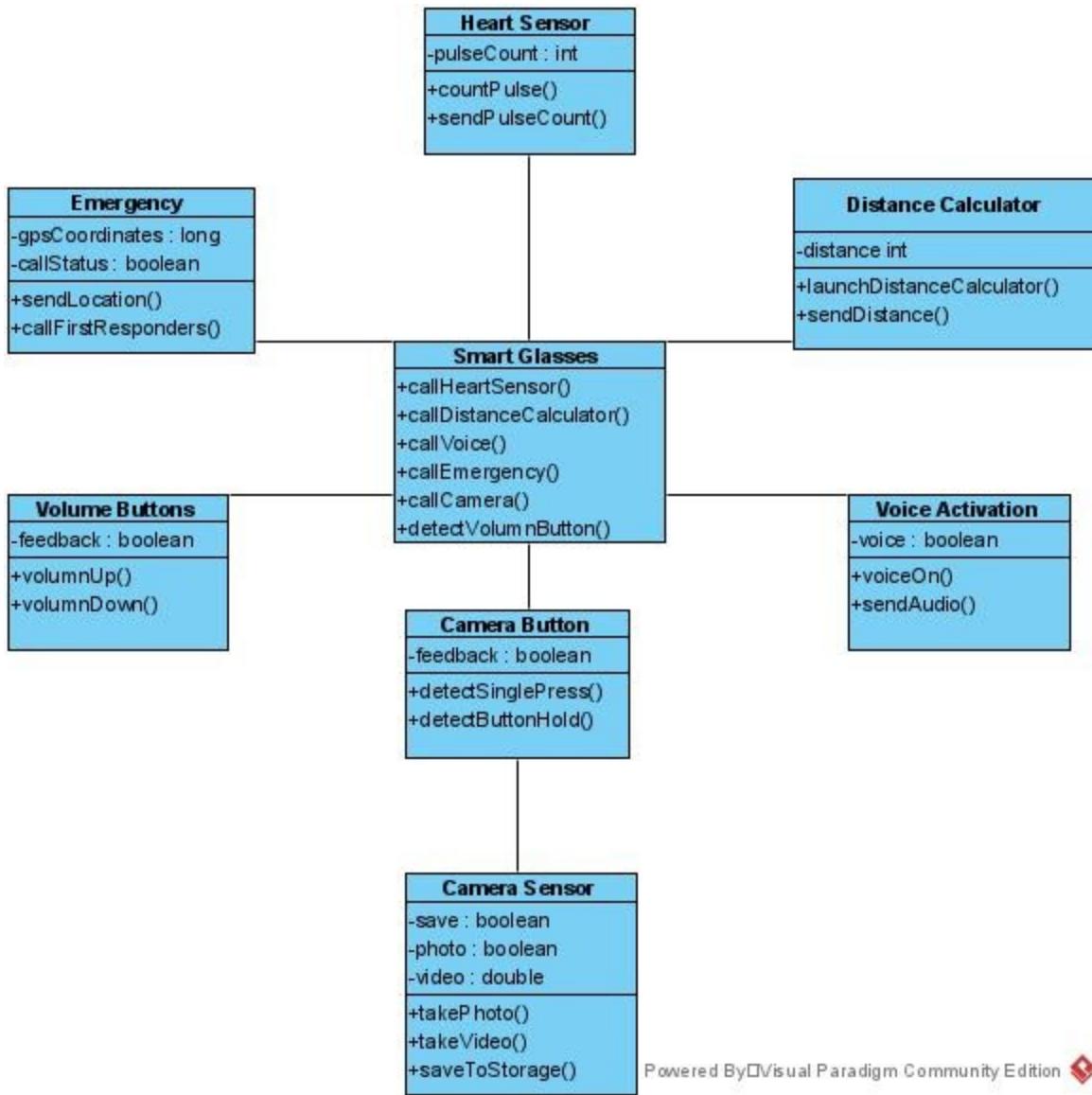


Powered By Visual Paradigm Community Edition

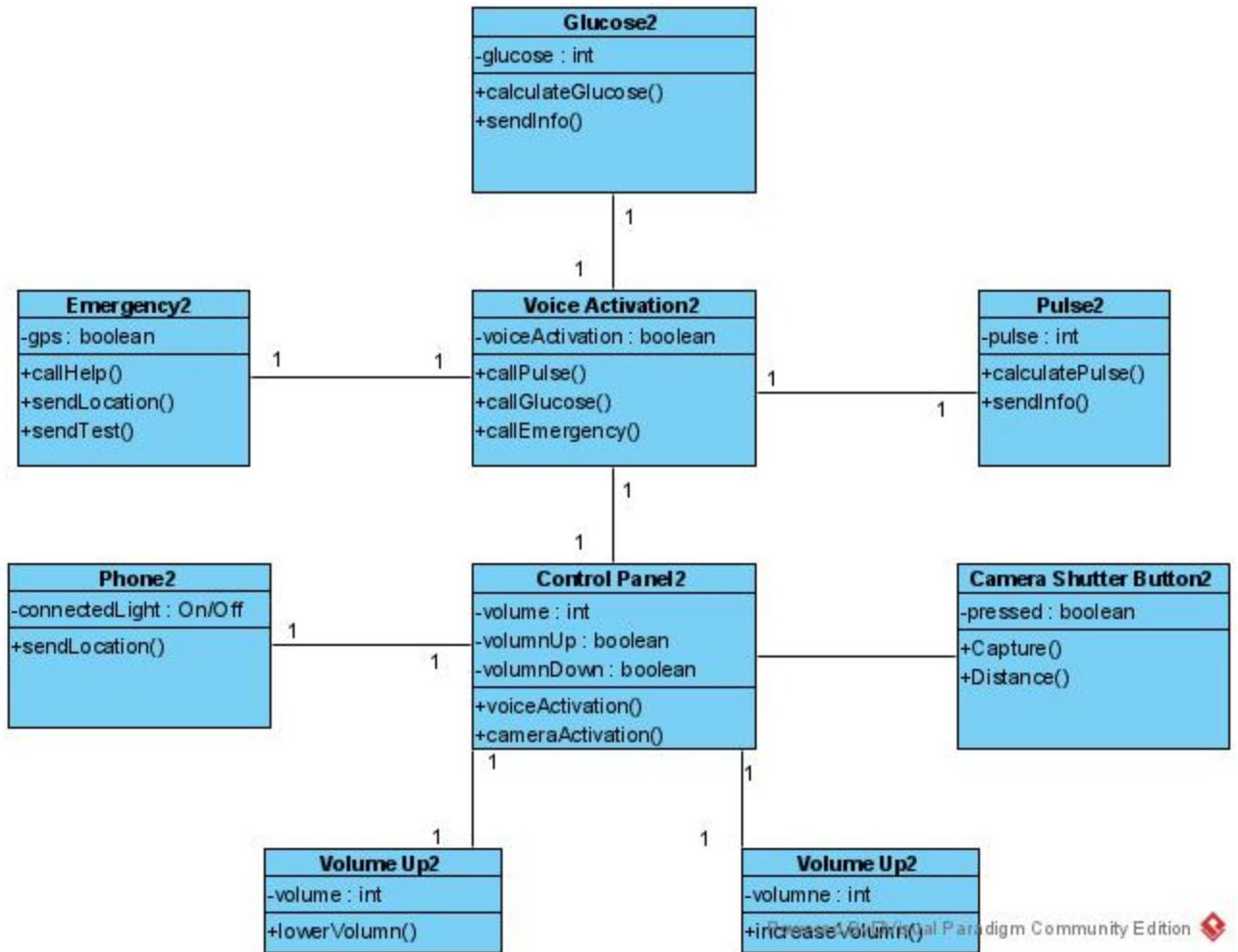
7.5.10. State Chart Diagram



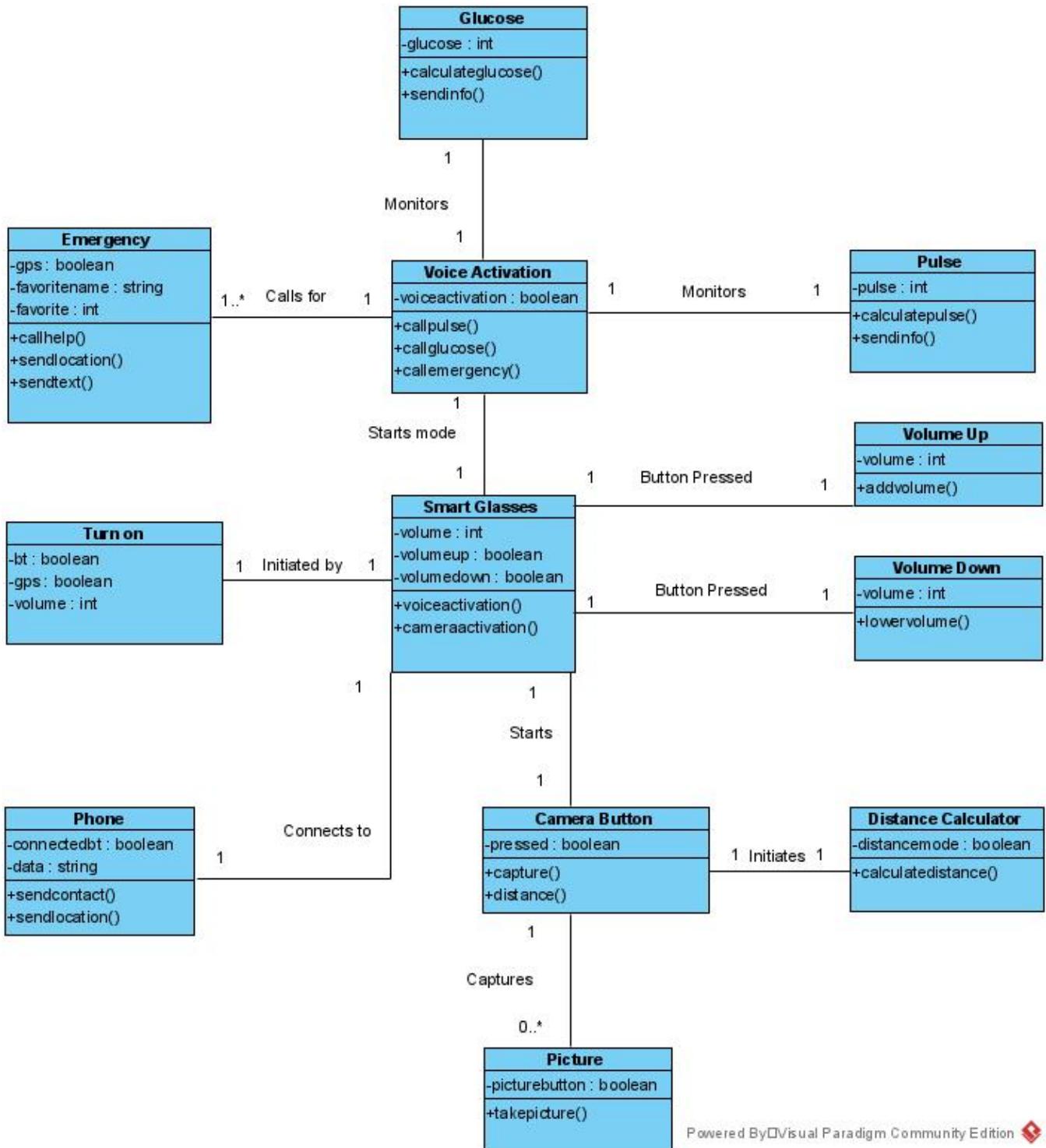
7.5.11. Class Diagram



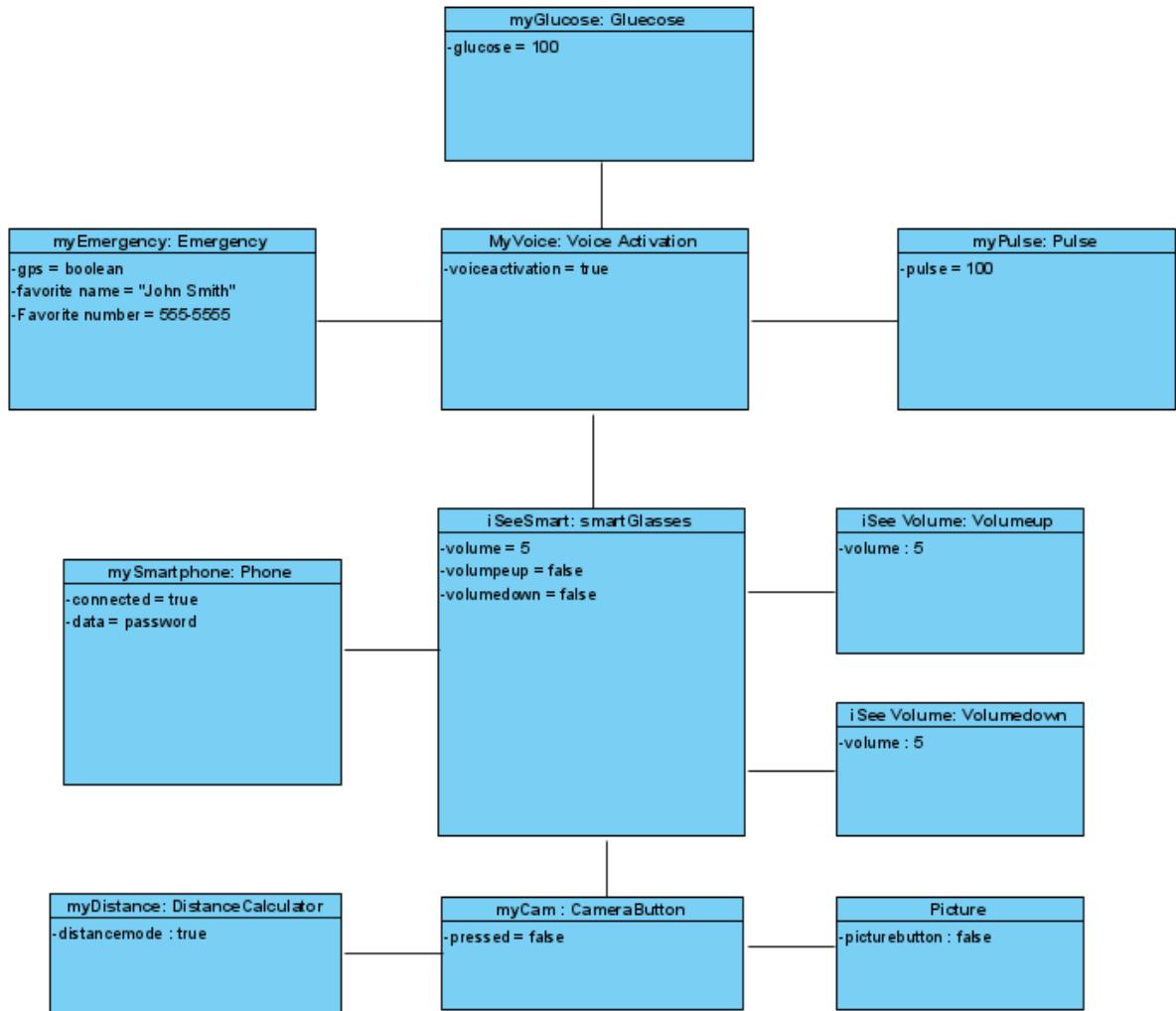
7.5.12. Design Class Diagram



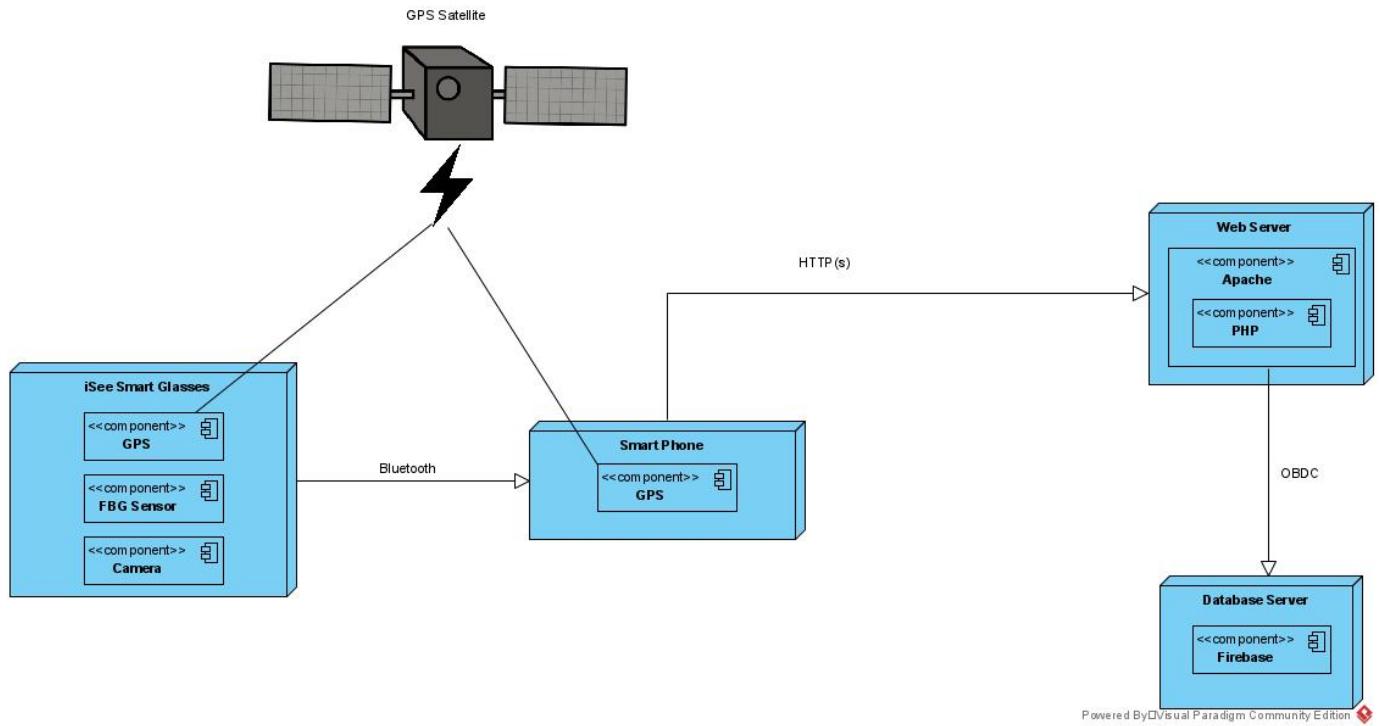
7.5.13. Class Diagram (GRASP)



7.5.14. Object Diagram



7.5.15. Deployment Diagram



7.5.16. Reverse Traceability Matrix

Diag.	UC -1	UC -2	UC -3	UC -4	UC -5	UC -6.0	UC -6.1	UC -7.0	UC -7.1	UC -8	UC -9.0	UC -9.1	UC -10.0	UC -10.1	UC -11	UC -12	UC -13	UC -14.0	UC -14.1	UC -14.2	UC -15.0	UC -15.1	UC -16	
UC Diag	X																							
Seq. Diag	X	X	X		X	X	X	X	X					X	X		X	X	X	X	X	X	X	
Pack. Diag.			X	X		X	X	X	X	X	X	X												
State Chart Diag.	X		X			X	X	X	X	X	X	X					X							
Activity Diag.	X		X																		X			
Concept. Class Diag.			X							X	X			X										
Domain Model			X							X	X			X										
Class Diag.	X																							
Object Diag.	X																							
Interact. Diag.	X																							
Comp. Diag.		X						X		X	X	X												
Design Class Diag.	X	X	X		X	X	X	X	X	X	X													
Class Diag. (GRASP)	X	X	X		X	X	X	X	X	X	X													
Deploy. Diag.			X														X	X	X	X				

8. Other Requirements

8.1 Supplementary Specification

Introduction

This document is the repository of all iSee Smart Glasses requirements not captured in the user cases.

Functionality

Logging and Error Handling

Log all errors to persistent storage.

Pluggable Rules

At various scenarios, points of several use cases support the ability to customize the functionality of the system with a set of arbitrary rules that execute at that point or event.

Security

User authentication is required on the iSee Smart Glasses mobile application.

Usability

Human Factors

The customer will wear the glasses realistically between four to eight hours depending on the type of glasses they purchase. (prescription, non-prescription, tinted sunglasses) Therefore:

- The glasses should fit snug onto the customer's face
- The nose pads and temple of the glasses should apply enough pressure to stay on the customer's face without it falling off easily.

Reliability

Recoverability

If there is a failure to use the iSee Smart Glasses device, please contact this email, help@iseesmartglasses.com, with a description of the assistance you need. Failures include the following:

- Buttons not properly working
- Speakers not properly working

- Voice Activation commands not being received by iSee Smart Glasses.
- iSee Smart Glasses unable to respond successfully to user's commands
- User login is not working correctly, even if you already made an account.
- Unable to find glasses via "Find My Glasses" in the mobile app

Performance

Users want to connect their iSee Smart Glasses to their mobile devices seamlessly. This involves the Bluetooth pairing and the user login into the iSee Smart Glasses mobile application. Therefore, our goal is to make sure Bluetooth pairing takes less than 30 seconds, and authorization takes less than a minute 95% of the time.

Supportability

Adaptability

Users of the iSee Smart Glasses have unique business rules and processing needs while processing specific voice-activated commands. Therefore, at several defined points in the scenario (for example, when a voice-activated order is given), a pluggable business rule will be enabled.

Configurability

Since iSee Smart Glasses is set to use a thin client and two-tier physical layer, users do not hold concerns for varying network configurations for their device. Users will not have the authorization to modify these configurations.

Implementation Constraints

iSee Smart Glasses leadership insists on a Dart technologies solution and Firebase cloud storage for supportability, reliability, and data retention. Predicting this will enhance long-term porting and supportability, in addition to the efficiency of development.

Purchased Components

Outside of purchasing their iSee Smart Glasses, the user must have purchased a smartphone device. iSee Smart Glasses will support most smartphone devices produced across the globe.

Free Open Source Components

We recommend maximizing the use of free Dart technology open source components on this project. Additionally, Firebase is an open source database that will be utilized to store all of the user's information gathered from the iSee Smart Glasses device and mobile application.

Interfaces

Noteeworthy Hardware and Interfaces

iSee Smart Glasses is composed of cellulose acetate frames with a glossy finish and flexible nylon legs.

The following are where certain hardware parts of the glasses are located:

- Bone Conduction Speakers: Set in the temple tip part of the glasses for easy listening.
- GPS microchip: Inserted inside the left temple of the glasses.
- Microphone: Below the GPS microchip.
- Two buttons are used to turn on and off the glasses, customize volume, and use the camera:
Located on the outside of the right temple.
- Camera Lens: Located on the top right of the glasses frame.

Software Interfaces

For smartphone devices, we need to be able to plug in varying mobile user interfaces. We are considering building the software compatible with Apple iOS and Android OS.

Application-Specification Domain (Business) Rules

ID	Rule	Changeability	Source
RULE1	Purchaser discount rules. Examples: <ul style="list-style-type: none">- Employee: 50% off- Preferred Customer: 15% off- Senior: 15% off	High	Retailer policy
RULE2	Sale discount rules. Examples: <ul style="list-style-type: none">- 15% off a total sale greater than \$500 USD- 10% off every Friday	High	Retailer Policy
RULE3	Product discount rules. Examples: <ul style="list-style-type: none">- 15% off glasses with prescription lens this weekend- Buy one pair of glasses get another 50% off	High	Retailer Policy

Legal Issues

We suggest some open source components if their licensing restrictions can be intended to provide resale products that include open-source software. All tax rules must, by law, be implemented during sales.

Information in Domains

Pricing

Additionally, to the pricing rules specified in the domain rules section, products have an original price, and optionally a permanent markdown price. A product's price (before further discounts) is the permanent markdown price. Organizations keep the actual price even if there is a permanent markdown price for accounting and tax purposes.

Credit and Debit Payment Handling

When a payment authorization service permits an electronic credit or debit payment, they are accountable for paying the seller, not the buyer. Consequently, for each payment, the seller must record payments due to the authorization service's accounts receivable. Regularly, the authorization service will complete an electronic funds transfer to the seller's account for the daily total owing.

Sales Tax

Sales tax calculations can be very intricate and continually change in response to legislation at all government levels. Hence, assigning tax calculations to third-party calculator software is desirable. Tax may be owing to the city, region, state, and national bodies.

Item Identifiers: UPCs, EANs, SKUs, Bar Codes, and Bar Code Readers

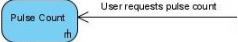
The iSee Smart Glasses need to support various item identifier schemes.

UPCs (Universal Product Codes), EANs (European Article Numbering) and SKUs (Stock Keeping Units) are three general identifier systems for cold products. SKUs are random identifiers specified by the retailer, while UPCs and EANs have standards and regulatory elements.

8.2 Glossary

Definitions

Term	Definition and Information	Format	Validation Rules	Aliases
Command	What the user gives the iSee Smart Glasses to access certain functions (Calling/texting, using the camera, receiving the pulse count, receiving the glucose level, accessing the distance calculator)	The user simply says, “can iSee ____.” When iSee recognizes the command, it follows through the certain protocol for the command.		
Contact	A person the user can call or text from their iSee Smart Glasses via voice activation.	On the iSee Smart Glasses mobile application, a contact includes the first and last name and the 10 digit phone number of the contact.		
Distance calculator	A function on the iSee Smart Glasses system the user may use to locate the distance between themselves and a building in their vision field.			
EAN	Numeric code that is an extension of the UPC codes, and you will find them as barcodes on most everyday commodities.	13-digit code of several subparts	Digit 13 is a check digit.	International Article Number (originally European Article Number)
GRASP	Defines five patterns in object oriented design/basic building	GRASP is applied to diagrams such as class diagrams and	Diagrams with GRASP include more	

	blocks in software design. The patterns are: Expert, Creator, High Cohesion Low Coupling and Controller.	object diagrams.	associations and are more descriptive.	
Rake	A symbol that shows an activity is expanded into another activity diagram	Example visual from the main activity diagram. The rake symbol looks like a fork: 	The rake explains the flow of the activity diagram coherently.	
SKU	A scannable barcode, frequently seen printed on product labels in a retail store. The label allows vendors to track the movement of inventory automatically.	Can be all numbers or a mixture of numbers and letters. Should be short, not more than 16 characters.	Product SKU Validation Rule: All order items info under the SKU is checked SKU Quantity Validation Rule: SKU quantity matches amount of items sold.	Stock Keeping Unit
UPC	Numeric code identifying a product. Usually symbolized with a barcode placed on products.	12-digit code of several subparts.	Digit 12 is a check digit.	Universal Product Code