

# **PERSONALIZED HEALTH AND WELLNESS ASSISTANT**



## **GANTT CHART**

**Course Title** – Software Engineering

**Slot** – G2 + TG2

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**Registration No.** – 22BAI1386

## ***Introduction –***

The ‘Personalized Health and Wellness Assistant’ will serve as a new generation mobile application that will include artificial intelligence and machine learning components to suggest a recommended health and wellness plan based on data inputted by the user. This is a new concept which will include a chatbot and will assist the users with medication and prescription guidance; therefore, the usage of the app will be enhanced while appropriate health support will be provided. The most important one is to educate and give specific recommendations concerning the state of one’s health and help to make the right decision.

To accomplish the mentioned above proposed objective of a well-structured and efficient manner of development, Software Development Life Cycle, namely the Incremental Model has been chosen. This way the application is develop in phases including this feedback of users and can be improved gradually by incorporating more features. Thus, when realizing the project in stages, it is also possible to ensure that each of the elements is functional and the final outcome is a usable application that will meet the needs of end-users. It also shows the concrete description of Incremental Model in the framework of the ‘Personalized Health and Wellness Assistant’, as well as naming all the activities of each phase and their outcomes.

## ***Steps to Construct the Gantt Chart –***

### ***Step 1: Define Project Tasks and Milestones***

- Project Initialization
- Requirement Analysis
- System Design
- Backend Development
- Frontend Development
- ML Model Development
- Chatbot Development
- Integration of ML Model
- Integration of Chatbot
- Testing
- Deployment
- Maintenance

### ***Step 2: Set Start and End Dates for Each Task***

- Project Initialization: Start Date: August 1, 2024; End Date: August 5, 2024
- Requirement Analysis: Start Date: August 6, 2024; End Date: August 21, 2024
- System Design: Start Date: August 22, 2024; End Date: September 9, 2024

- Develop Core Features: Start Date: September 10, 2024; End Date: September 30, 2024
- Backend Development: Start Date: October 1, 2024; End Date: October 8, 2024
- Frontend Development: Start Date: October 9, 2024; End Date: October 11, 2024
- ML Model Development: Start Date: October 14, 2024; End Date: October 27, 2024
- Chatbot Development: Start Date: September 27, 2024; End Date: October 8, 2024
- Integration of ML Model: Start Date: October 7, 2024; End Date: October 8, 2024
- Integration of Chatbot: Start Date: September 23, 2024; End Date: September 24, 2024
- Testing: Start Date: October 14, 2024; End Date: October 28, 2024
- Deployment: Start Date: October 29, 2024; End Date: November 1, 2024
- Maintenance: Start Date: November 4, 2024; End Date: November 5, 2024

### Step 3: Establish Dependencies Between Tasks

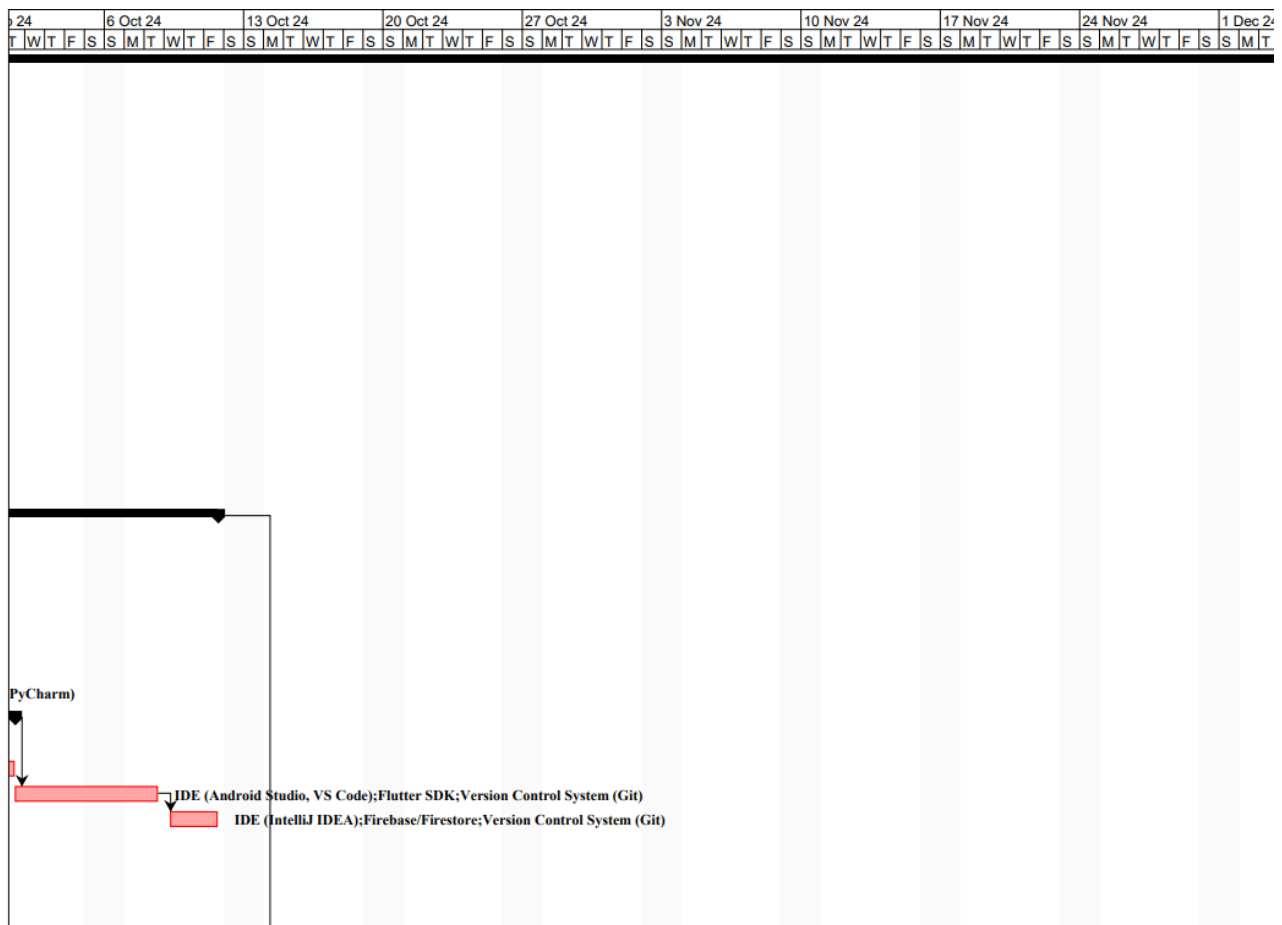
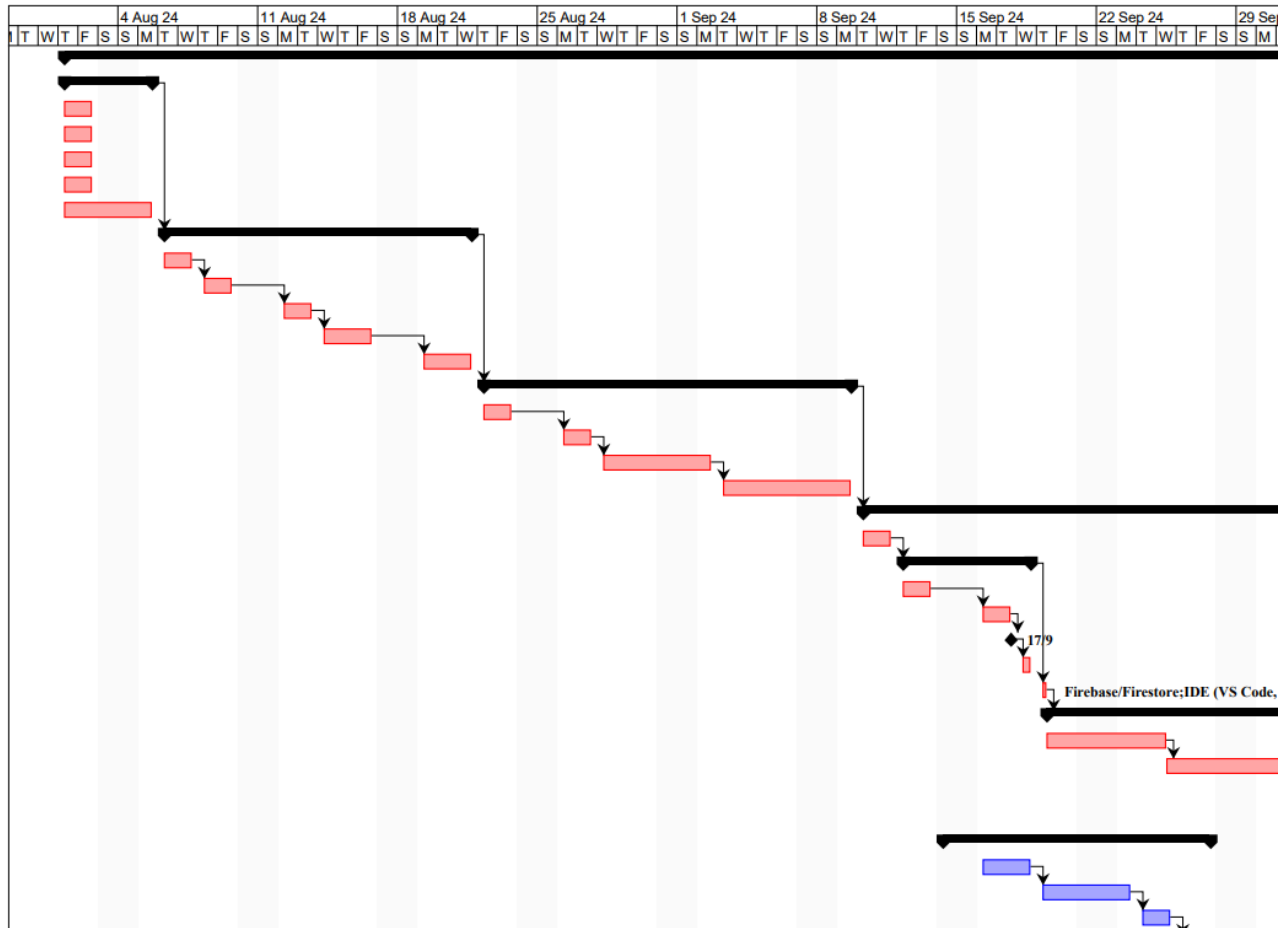
- Requirement Analysis must follow Project Initialization.
- System Design depends on the completion of Requirement Analysis.
- Backend Development and Frontend Development start after System Design.
- ML Model Development and Chatbot Development start concurrently after Backend Development begins.
- Integration of ML Model and Integration of Chatbot follow the completion of both ML Model Development and Chatbot Development.
- Testing starts after Integration of ML Model and Integration of Chatbot.
- Deployment follows Testing.
- Maintenance is the final phase, starting after Deployment.

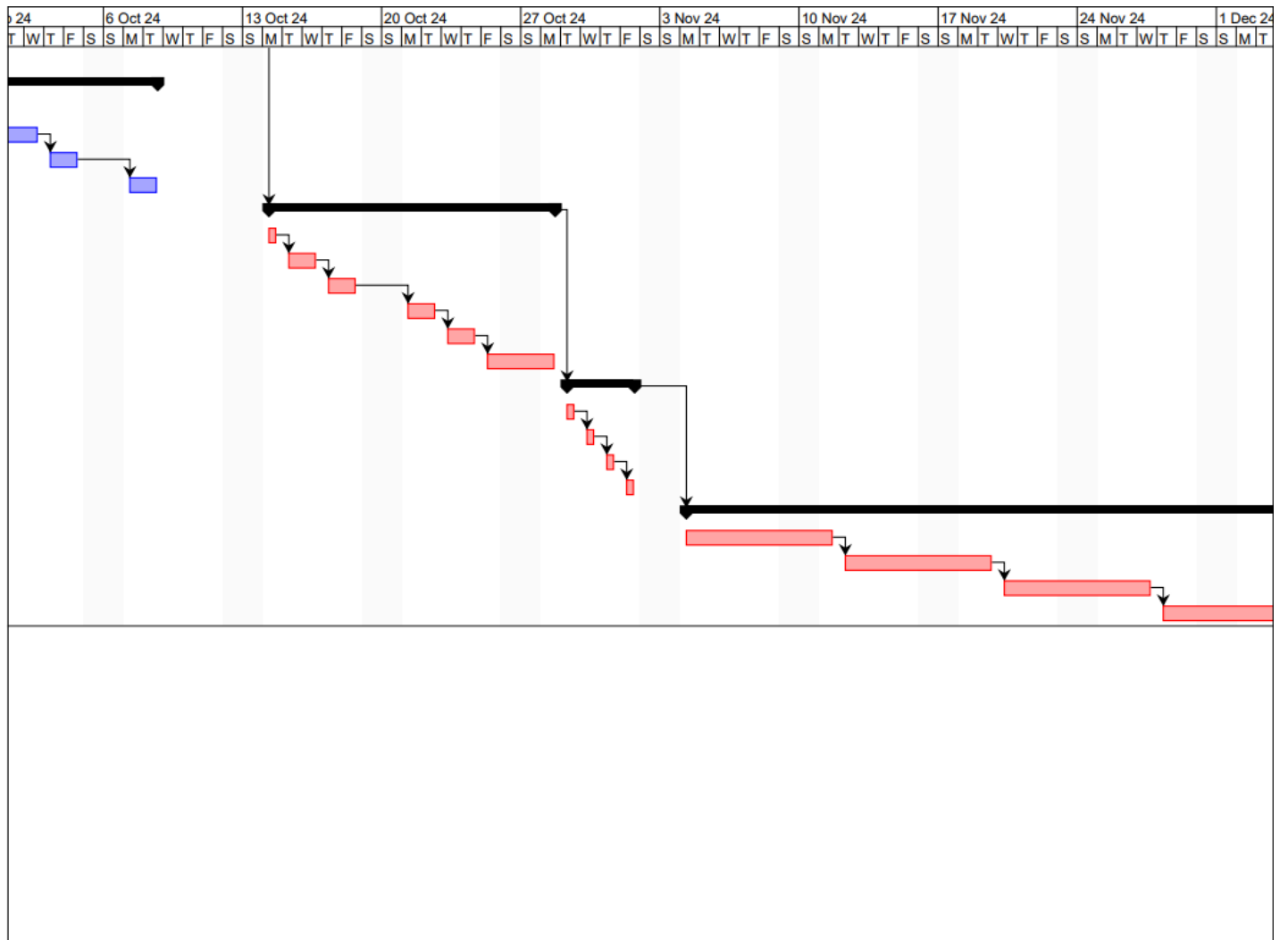
#### Step 4: Assign Resources to Tasks

- High-performance Computers for ML Model Development and Chatbot Development
- Servers for Backend Development and Deployment
- IDE for all development tasks
- Flutter SDK for Frontend Development
- Firebase/Firestore for Backend Development and Deployment
- TensorFlow/PyTorch for ML Model Development
- Dialogflow/Rasa for Chatbot Development
- Version Control System (Git) for all coding tasks
- ProjectLibre for project management
- Cloud Services (GCP/AWS) for Deployment
- CI/CD Tools (Jenkins, etc.) for Testing and Deployment
- Automated Testing Tools for Testing
- Unit Testing Frameworks for Testing
- UML Design Tools for System Design
- Adobe XD/Sketch/Figma for UI/UX Design
- Monitoring Tools for Maintenance

## Gantt Chart –

		Name	Duration	Start	Finish	Predecessors	Resource Names
1		<b>Health Care App</b>	91 days?	1/8/24 8:00 AM	5/12/24 5:00 PM		
2		<b>Project Initialization</b>	3 days?	1/8/24 8:00 AM	5/8/24 5:00 PM		ProjectLibre;Version Con...
3		Project Scope	2 days	1/8/24 8:00 AM	2/8/24 5:00 PM		
4		Stakeholders	2 days?	1/8/24 8:00 AM	2/8/24 5:00 PM		
5		Set Goals and Objectives	2 days?	1/8/24 8:00 AM	2/8/24 5:00 PM		
6		Develop Project Plan	2 days?	1/8/24 8:00 AM	2/8/24 5:00 PM		
7		Assemble Project team	3 days?	1/8/24 8:00 AM	5/8/24 5:00 PM		
8		<b>Requirement Analysis</b>	12 days?	6/8/24 8:00 AM	21/8/24 5:00 PM	2	ProjectLibre
9		Gather Requirements	2 days?	6/8/24 8:00 AM	7/8/24 5:00 PM		
10		Define Functional Require	2 days?	8/8/24 8:00 AM	9/8/24 5:00 PM	9	
11		Define Functional Require	2 days?	12/8/24 8:00 AM	13/8/24 5:00 PM	10	
12		Requirement Documenta	3 days?	14/8/24 8:00 AM	16/8/24 5:00 PM	11	
13		Review and Approve Rec	3 days?	19/8/24 8:00 AM	21/8/24 5:00 PM	12	
14		<b>System Design</b>	13 days?	22/8/24 8:00 AM	9/9/24 5:00 PM	8	ProjectLibre;UML design...
15		System Architecture	2 days?	22/8/24 8:00 AM	23/8/24 5:00 PM		
16		Database Schema	2 days?	26/8/24 8:00 AM	27/8/24 5:00 PM	15	
17		Detailed Design Documen	4 days?	28/8/24 8:00 AM	2/9/24 5:00 PM	16	
18		Review Approve System	5 days?	3/9/24 8:00 AM	9/9/24 5:00 PM	17	
19		<b>Implementation</b>	24 days?	10/9/24 8:00 AM	11/10/24 5:00 PM	14	
20		Setup Developement Env	2 days?	10/9/24 8:00 AM	11/9/24 5:00 PM		
21		<b>Develop user registra</b>	5 days?	12/9/24 8:00 AM	18/9/24 5:00 PM	20	IDE (Android Studio, VS ...
22		Create user interface f	2 days?	12/9/24 8:00 AM	13/9/24 5:00 PM		
23		Implement registration	2 days?	16/9/24 8:00 AM	17/9/24 5:00 PM	22	
24		Create user interface f	0 days?	17/9/24 5:00 PM	17/9/24 5:00 PM	23	
25		Implement login logic	1 day?	18/9/24 8:00 AM	18/9/24 5:00 PM	24	
26		Integrate Firebase Auth	0.5 days?	19/9/24 8:00 AM	19/9/24 1:00 PM	21	Firebase/Firestore;IDE (VS ...
27		<b>Develop core feature</b>	8 days?	19/9/24 1:00 PM	1/10/24 1:00 PM	26	
28		Develop health tracking	4 days?	19/9/24 1:00 PM	25/9/24 1:00 PM		
29		Develop appointment s	4 days?	25/9/24 1:00 PM	1/10/24 1:00 PM	28	
30		Develop frontend using F	5.5 days?	1/10/24 1:00 PM	8/10/24 5:00 PM	27	IDE (Android Studio, VS Cod...
31		Implement backend servi	3 days?	9/10/24 8:00 AM	11/10/24 5:00 PM	30	IDE (IntelliJ IDEA);Firebase/...
32		<b>ML Model Developme</b>	10 days?	14/9/24 8:00 AM	27/9/24 5:00 PM		IDE (VS Code, PyCharm);...
33		Collect and preprocess	3 days?	14/9/24 8:00 AM	18/9/24 5:00 PM		
34		Train ML model	3 days?	19/9/24 8:00 AM	23/9/24 5:00 PM	33	
35		Evaluate ML model	2 days?	24/9/24 8:00 AM	25/9/24 5:00 PM	34	
36		Integrate ML model wit	2 days?	26/9/24 8:00 AM	27/9/24 5:00 PM	35	
37		<b>Chatbot Developmen</b>	8 days?	27/9/24 8:00 AM	8/10/24 5:00 PM		IDE (VS Code, PyCharm);...
38		Design chatbot convers	1 day?	27/9/24 8:00 AM	27/9/24 5:00 PM		
39		Develop chatbot	3 days?	30/9/24 8:00 AM	2/10/24 5:00 PM	38	
40		Test chatbot functional	2 days?	3/10/24 8:00 AM	4/10/24 5:00 PM	39	
41		Integrate chatbot with	2 days?	7/10/24 8:00 AM	8/10/24 5:00 PM	40	
42		<b>Testing</b>	11 days?	14/10/24 8:00 AM	28/10/24 5:00 PM	19	Automated Testing Tool...
43		Develop test plan	1 day?	14/10/24 8:00 AM	14/10/24 5:00 PM		
44		Unit testing	2 days?	15/10/24 8:00 AM	16/10/24 5:00 PM	43	
45		Integration testing	2 days?	17/10/24 8:00 AM	18/10/24 5:00 PM	44	
46		System testing	2 days?	21/10/24 8:00 AM	22/10/24 5:00 PM	45	
47		User acceptance testing	2 days?	23/10/24 8:00 AM	24/10/24 5:00 PM	46	
48		Fix bugs and issues	2 days?	25/10/24 8:00 AM	28/10/24 5:00 PM	47	
49		<b>Deployment</b>	4 days?	29/10/24 8:00 AM	1/11/24 5:00 PM	42	Cloud Services (GCP, AW...
50		Prepare deployment envi	1 day?	29/10/24 8:00 AM	29/10/24 5:00 PM		
51		Deploy application to app	1 day?	30/10/24 8:00 AM	30/10/24 5:00 PM	50	
52		Conduct final system che	1 day?	31/10/24 8:00 AM	31/10/24 5:00 PM	51	
53		Go-live	1 day?	1/11/24 8:00 AM	1/11/24 5:00 PM	52	
54		<b>Maintenance</b>	24 days?	4/11/24 8:00 AM	5/12/24 5:00 PM	49	IDE (VS Code, PyCharm);...
55		Monitor Appliaction Perfo	6 days?	4/11/24 8:00 AM	11/11/24 5:00 PM		
56		Fix post-deployment issu	6 days?	12/11/24 8:00 AM	19/11/24 5:00 PM	55	
57		Update and enhance app	6 days?	20/11/24 8:00 AM	27/11/24 5:00 PM	56	
58		Provide user support	6 days?	28/11/24 8:00 AM	5/12/24 5:00 PM	57	





## Resource Page –

	🌸	Name	RBS	Type	E-mail Address	Material Label	Initials
1	🌸	ProjectLibre		Material			P
2	🌸	Version Control System (Git)		Material			V
3	🌸	UML design tools ( Lucidchart)		Material			U
4	🌸	IDE (IntelliJ IDEA)		Material			I
5	🌸	Firestore/Firebase		Material			F
6	🌸	IDE (Android Studio, VS Code)		Material			I
7	🌸	Flutter SDK		Material			F
8	🌸	IDE (VS Code, PyCharm)		Material			I
9	🌸	TensorFlow/PyTorch		Material			T
10	🌸	Dialogflow/Rasa		Material			D
11	🌸	Automated Testing Tools (Selenium)		Material			A
12	🌸	Unit Testing Frameworks (JUnit, Jest)		Material			U
13	🌸	Cloud Services (GCP, AWS)		Material			C
14	🌸	CI/CD Tools (Jenkins, Travis CI)		Material			C
15	🌸	Monitoring Tools (New Relic, Prometheus)		Material			M

[illegible]



## Resource Usage –

	Name	Work	Work Contour	Assignmen...	Leveling D...	Cost Rate Table
1	ProjectLibre	0 hours				
	Requirement Analysis	115,200,000 Flat		0 days	0 days	Rate A
	System Design	4,800,000 Flat		0 days	0 days	Rate A
	Project Initialization	0 Flat		0 days	0 days	Rate A
2	Version Control System (Git)	0 hours				
	ML Model Development and	46,167,000 Flat		0 days	0 days	Rate A
	Project Initialization	86,400,000 Flat		0 days	0 days	Rate A
	Implement backend service	9,600,000 Flat		0 days	0 days	Rate A
	Chatbot Development and	25,600,000 Flat		0 days	0 days	Rate A
	Develop frontend using Flu	28,800,000 Flat		0 days	0 days	Rate A
3	UML design tools (Lucidchart)	0 hours				
	System Design	24,000,000 Flat		0 days	0 days	Rate A
4	IDE (IntelliJ IDEA)	0 hours				
	Implement backend service	9,600,000 Flat		0 days	0 days	Rate A
5	Firebase/Firestore	0 hours				
	Integrate Firebase Authen	14,400,000 Flat		0 days	0 days	Rate A
	Implement backend service	9,600,000 Flat		0 days	0 days	Rate A
6	IDE (Android Studio, VS Code)	0 hours				
	Develop frontend using Flu	28,800,000 Flat		0 days	0 days	Rate A
	Develop user registration a	0 Flat		0 days	0 days	Rate A
7	Flutter SDK	0 hours				
	Develop user registration a	0 Flat		0 days	0 days	Rate A
	Develop frontend using Flu	28,800,000 Flat		0 days	0 days	Rate A
8	IDE (VS Code, PyCharm)	0 hours				
	Maintenance	1,600,000 Flat		0 days	0 days	Rate A
	Chatbot Development and	355,000 Flat		0 days	0 days	Rate A
	ML Model Development and	28,800,000 Flat		0 days	0 days	Rate A
	Integrate Firebase Authen	14,400,000 Flat		0 days	0 days	Rate A
9	TensorFlow/PyTorch	0 hours				
	ML Model Development and	4,196,000 Flat		0 days	0 days	Rate A
10	Dialogflow/Rasa	0 hours				
	Chatbot Development and	2,844,000 Flat		0 days	0 days	Rate A
11	Automated Testing Tools (Se	0 hours				
	Testing	2,400,000 Flat		0 days	0 days	Rate A
12	Unit Testing Frameworks (JU	0 hours				
	Testing	26,400,000 Flat		0 days	0 days	Rate A
13	Cloud Services (GCP, AWS)	0 hours				
	Deployment	7,200,000 Flat		0 days	0 days	Rate A
14	CI/CD Tools (Jenkins, Travis	0 hours				
	Deployment	21,600,000 Flat		0 days	0 days	Rate A
15	Monitoring Tools (New Relic,	0 hours				
	Maintenance	27,200,000 Flat		0 days	0 days	Rate A

## Task Usage –

	Name	Work	Duration	Start	Finish	Work Contour	Assignmen...	Leveling D...	Cost Rate Table
1	☐ Health Care App	1,021.989 ...	88 days?	1/8/24 8:00 AM	2/12/24 5:00 PM			0 days	
2	☐ Project Initialization	112 hours	3 days?	1/8/24 8:00 AM	5/8/24 5:00 PM			0 days	
3	Project Scope	16 hours	2 days?	1/8/24 8:00 AM	2/8/24 5:00 PM			0 days	
4	Stakeholders	16 hours	2 days?	1/8/24 8:00 AM	2/8/24 5:00 PM			0 days	
5	Set Goals and Objectives	16 hours	2 days?	1/8/24 8:00 AM	2/8/24 5:00 PM			0 days	
6	Develop Project Plan	16 hours	2 days?	1/8/24 8:00 AM	2/8/24 5:00 PM			0 days	
7	Assemble Project team	24 hours	3 days?	1/8/24 8:00 AM	5/8/24 5:00 PM			0 days	
	Version Control System (Git)	86,400,000	3 days?	6/8/24 8:00 AM	8/8/24 5:00 PM	Flat	0 days	0 days Rate A	
	ProjectLibre	0	0 days?	6/8/24 8:00 AM	6/8/24 8:00 AM	Flat	0 days	0 days Rate A	
8	☐ Requirement Analysis	128 hours	12 days?	6/8/24 8:00 AM	21/8/24 5:00 PM			0 days	
9	Gather Requirements	16 hours	2 days?	6/8/24 8:00 AM	7/8/24 5:00 PM			0 days	
10	Define Functional Requirements	16 hours	2 days?	8/8/24 8:00 AM	9/8/24 5:00 PM			0 days	
11	Define Functional Requirements	16 hours	2 days?	12/8/24 8:00 AM	13/8/24 5:00 PM			0 days	
12	Requirement Documentation	24 hours	3 days?	14/8/24 8:00 AM	16/8/24 5:00 PM			0 days	
13	Review and Approve Requirements	24 hours	3 days?	19/8/24 8:00 AM	21/8/24 5:00 PM			0 days	
	ProjectLibre	115,200,000	4 days?	6/8/24 8:00 AM	9/8/24 5:00 PM	Flat	0 days	0 days Rate A	
14	☐ System Design	112 hours	13 days?	22/8/24 8:00 AM	9/9/24 5:00 PM			0 days	
15	System Architecture	16 hours	2 days?	22/8/24 8:00 AM	23/8/24 5:00 PM			0 days	
16	Database Schema	16 hours	2 days?	26/8/24 8:00 AM	27/8/24 5:00 PM			0 days	
17	Detailed Design Documentation	32 hours	4 days?	28/8/24 8:00 AM	2/9/24 5:00 PM			0 days	
18	Review Approve System Design	40 hours	5 days?	3/9/24 8:00 AM	9/9/24 5:00 PM			0 days	
	ProjectLibre	4,800,000	0.167 days?	22/8/24 8:00 AM	22/8/24 9:20 AM	Flat	0 days	0 days Rate A	
	UML design tools (Lucidchart)	24,000,000	0.833 days?	22/8/24 8:00 AM	22/8/24 3:40 PM	Flat	0 days	0 days Rate A	
19	☐ Implementation	333.989 hours	21 days?	10/9/24 8:00 AM	8/10/24 5:00 PM			0 days	
20	Setup Development Environment	16 hours	2 days?	10/9/24 8:00 AM	11/9/24 5:00 PM			0 days	
21	☐ Develop user registration	40 hours	5 days?	12/9/24 8:00 AM	18/9/24 5:00 PM			0 days	
22	Create user interface for registration	16 hours	2 days?	12/9/24 8:00 AM	13/9/24 5:00 PM			0 days	
23	Implement registration logic	16 hours	2 days?	16/9/24 8:00 AM	17/9/24 5:00 PM			0 days	
24	Create user interface for login	0 hours	0 days?	17/9/24 5:00 PM	17/9/24 5:00 PM			0 days	
25	Implement login logic	8 hours	1 day?	18/9/24 8:00 AM	18/9/24 5:00 PM			0 days	
	IDE (Android Studio, VS Code)	0	0 days?	12/9/24 8:00 AM	12/9/24 8:00 AM	Flat	0 days	0 days Rate A	
	Flutter SDK	0	0 days?	12/9/24 8:00 AM	12/9/24 8:00 AM	Flat	0 days	0 days Rate A	
26	Integrate Firebase Authentication	0 hours	0.5 days?	19/9/24 8:00 AM	19/9/24 1:00 PM			0 days	
	Firebase/Firestore	14,400,000	0.5 days?	19/9/24 8:00 AM	19/9/24 1:00 PM	Flat	0 days	0 days Rate A	

	Name	Work	Duration	Start	Finish	Work Contour	Assignmen...	Leveling D...	Cost Rate Table
	IDE (VS Code, PyCharm)	14,400,000	0.5 days?	19/9/24 8:00 AM	19/9/24 1:00 PM	Flat	0 days	0 days Rate A	
27	☐ Develop core features	64 hours	8 days?	19/9/24 1:00 PM	1/10/24 1:00 PM			0 days	
28	Develop health tracking functionality	32 hours	4 days?	19/9/24 1:00 PM	25/9/24 1:00 PM			0 days	
29	Develop appointment scheduling	32 hours	4 days?	25/9/24 1:00 PM	1/10/24 1:00 PM			0 days	
30	Develop frontend using Flutter	0 hours	1 day?	1/10/24 1:00 PM	2/10/24 1:00 PM			0 days	
	Version Control System (Git)	28,800,000	1 day?	1/10/24 1:00 PM	2/10/24 1:00 PM	Flat	0 days	0 days Rate A	
	Flutter SDK	28,800,000	1 day?	1/10/24 1:00 PM	2/10/24 1:00 PM	Flat	0 days	0 days Rate A	
	IDE (Android Studio, VS Code)	28,800,000	1 day?	1/10/24 1:00 PM	2/10/24 1:00 PM	Flat	0 days	0 days Rate A	
31	Implement backend services	0 hours	0.333 days?	2/10/24 1:00 PM	2/10/24 3:40 PM			0 days	
	Firebase/Firestore	9,600,000	0.333 days?	2/10/24 1:00 PM	2/10/24 3:40 PM	Flat	0 days	0 days Rate A	
	Version Control System (Git)	9,600,000	0.333 days?	2/10/24 1:00 PM	2/10/24 3:40 PM	Flat	0 days	0 days Rate A	
	IDE (IntelliJ IDEA)	9,600,000	0.333 days?	2/10/24 1:00 PM	2/10/24 3:40 PM	Flat	0 days	0 days Rate A	
32	☐ ML Model Development	101.99 hours	10 days?	14/9/24 8:00 AM	27/9/24 5:00 PM			0 days	
33	Collect and preprocess data	24 hours	3 days?	14/9/24 8:00 AM	18/9/24 5:00 PM			0 days	
34	Train ML model	24 hours	3 days?	19/9/24 8:00 AM	23/9/24 5:00 PM			0 days	
35	Evaluate ML model	16 hours	2 days?	24/9/24 8:00 AM	25/9/24 5:00 PM			0 days	
36	Integrate ML model with app	16 hours	2 days?	26/9/24 8:00 AM	27/9/24 5:00 PM			0 days	
	TensorFlow/PyTorch	4,196,000	0.146 days?	14/9/24 8:00 AM	16/9/24 9:09 AM	Flat	0 days	0 days Rate A	
	IDE (VS Code, PyCharm)	28,800,000	0 days?	14/9/24 8:00 AM	16/9/24 5:00 PM	Flat	0 days	0 days Rate A	
	Version Control System (Git)	46,167,000	1.603 days?	14/9/24 8:00 AM	17/9/24 1:49 PM	Flat	0 days	0 days Rate A	
37	☐ Chatbot Development	72 hours	8 days?	27/9/24 8:00 AM	8/10/24 5:00 PM			0 days	
38	Design chatbot conversation flow	8 hours	1 day?	27/9/24 8:00 AM	27/9/24 5:00 PM			0 days	
39	Develop chatbot logic	24 hours	3 days?	30/9/24 8:00 AM	2/10/24 5:00 PM			0 days	
40	Test chatbot functionality	16 hours	2 days?	3/10/24 8:00 AM	4/10/24 5:00 PM			0 days	
41	Integrate chatbot with app	16 hours	2 days?	7/10/24 8:00 AM	8/10/24 5:00 PM			0 days	
	Dialogflow/Rasa	2,844,000	0.099 days?	27/9/24 8:00 AM	27/9/24 8:47 AM	Flat	0 days	0 days Rate A	
	IDE (VS Code, PyCharm)	355,000	0.012 days?	27/9/24 8:00 AM	27/9/24 8:05 AM	Flat	0 days	0 days Rate A	
	Version Control System (Git)	25,600,000	0.889 days?	27/9/24 8:00 AM	27/9/24 4:06 PM	Flat	0 days	0 days Rate A	
42	☐ Testing	96 hours	11 days?	9/10/24 8:00 AM	23/10/24 5:00 PM			0 days	
43	Develop test plan	8 hours	1 day?	9/10/24 8:00 AM	9/10/24 5:00 PM			0 days	
44	Unit testing	16 hours	2 days?	10/10/24 8:00 AM	11/10/24 5:00 PM			0 days	
45	Integration testing	16 hours	2 days?	14/10/24 8:00 AM	15/10/24 5:00 PM			0 days	
46	System testing	16 hours	2 days?	16/10/24 8:00 AM	17/10/24 5:00 PM			0 days	
47	User acceptance testing	16 hours	2 days?	18/10/24 8:00 AM	21/10/24 5:00 PM			0 days	