

## ***PDE3112-Formal Proposal Form***

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Study Status	BEng Computer Systems Engineering, Year 3
Campus	Dubai
Date of Submission	6/2/2024

Type of Research Proposal	Qualitative and Applied
Name of Supervisor	Mr. Santhosh Menon
Title	Healthcare Monitoring System for Diabetic Patients

Key Words	Artificial Intelligence, Chatbot, Natural Language Processing
Problem Definition	<p>Poor lifestyle and nutrition deficiency have led to a wide range of health-related diseases, out of which Diabetes is a topic of major concern. With the rise in diabetic patients, a solution is necessary for patients to manage this disease efficiently. One of which is Mobile Healthcare applications. Features such as monitoring blood sugar levels, and managing diet, can assist the patient thus promoting self-care and improving outcomes of the patient's levels.</p> <p>This application can provide support and knowledge to new diabetic patients through remote monitoring and can act as a bridge between the doctor and their diagnosis.</p>
Research Question(s)	How integration of artificial intelligence can improve health management?
Aims	<p>The Aims of this project are:</p> <ol style="list-style-type: none"><li>1. To create a mobile application focusing on diabetic patients.</li><li>2. Create a database to store patient information.</li><li>3. Provide a monitoring system for patients to maintain their blood sugar levels.</li><li>4. Incorporate Artificial intelligence into the application.</li><li>5. Implement a chatbot into the application.</li></ol>
Objectives	<p>The Objectives of this project are</p> <ol style="list-style-type: none"><li>1. To provide a solution to manage diabetes efficiently.</li><li>2. Create a user-friendly interface for patients to remotely monitor their disease.</li><li>3. Create an interface that can provide knowledge about disabilities.</li><li>4. Measure improvements in their health metrics</li></ol>

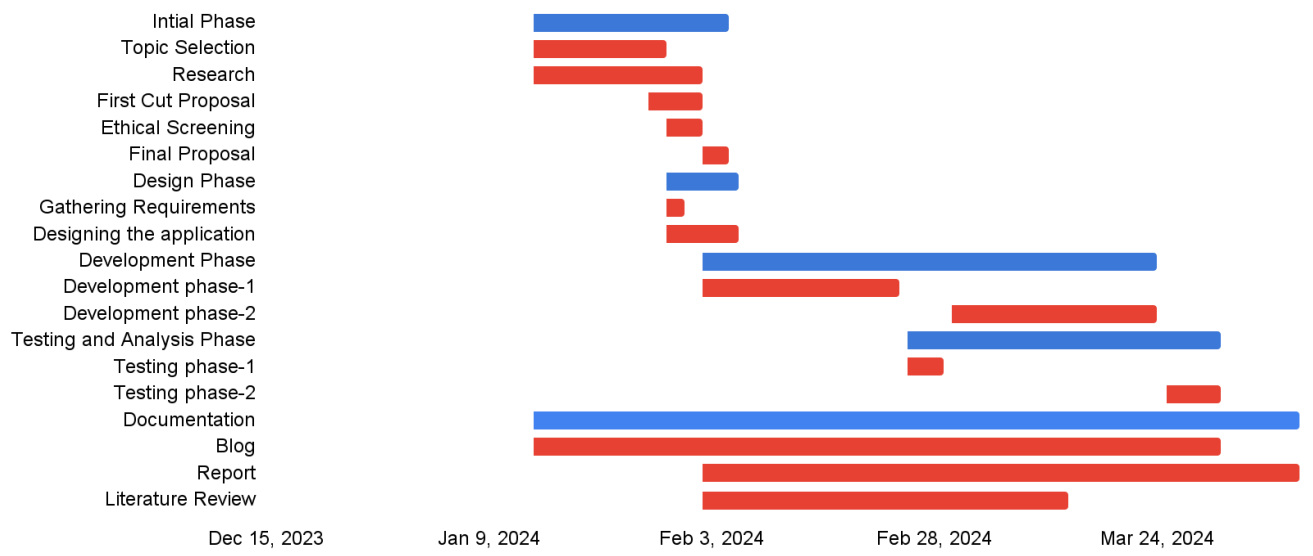
Evidence of Requirements	<p>The requirements of this project are:</p> <ol style="list-style-type: none"> <li>1. Knowledge of Mobile Application development using Flutter.</li> <li>2. The knowledge of Artificial Intelligence concepts, such as Natural Language processing.</li> </ol>
Context Description	<p>This application is designed to empower diabetic patients to manage their condition efficiently. With the integration of AI capabilities, the application can provide personalized insights by tracking progress in blood sugar levels and recommendations tailored based on each user's health profile. This application aims to streamline the management process through remote monitoring and improve the health outcomes of diabetic patients.</p> <p>The research process would be affected:</p> <ul style="list-style-type: none"> <li>● Based on the requirement for more resources to build the chatbot</li> <li>● Based on the availability and quality of data</li> </ul>
Research Methodology	<p>The Research Methodologies involved in this project would be Applied and Qualitative research methodologies.</p> <p>Through Qualitative Research, interacting with doctors and diabetic patients would provide basic knowledge about the disease.</p> <p>Through Applied Research, research would be done on how utilizing Artificial intelligence can improve the health monitoring and management of diabetes.</p>
Brief Product Description	<p>The application would have the following features:</p> <ol style="list-style-type: none"> <li>1. An authentication process for the user. Each patient using the application will have a separate account and database to store their records.</li> <li>2. <i>Account page</i>: to display patient details.</li> <li>3. <i>Sugar level feature</i>: helps the patient monitor their sugar levels daily and analyze their levels on a 3-month basis.</li> <li>4. <i>Nutrients</i>: provides nutritional information and carbohydrate calculation to the user</li> <li>5. <i>Chatbot</i>: provides knowledge to the patients about the disease</li> <li>6. <i>Exercise</i>: provides various exercises that can help patients maintain their sugar levels.</li> </ol>
Deliverables	<p>The deliverables of this project include:</p> <ul style="list-style-type: none"> <li>● An individual project proposal with a description of the project</li> <li>● A Blog describing the progress in the development of the project</li> <li>● Literature Review of the project</li> <li>● A mobile application developed using Flutter.</li> <li>● A detailed report about the project.</li> </ul>
Resources	<p>Software Resources: IntelliJ IDEA, Flutter SDK</p>
Bibliography/list of References	<ul style="list-style-type: none"> <li>● <a href="#">Diabetes App, Blood Sugar and Carbs Tracker   mySugr Global   mySugr</a></li> <li>● <a href="#">Diabetes Management App Features   Keep Your Diabetes Under Control (diabetes-m.com)</a></li> <li>● <a href="#">The CONTOUR DIABETES app (ascensia.co.uk)</a></li> </ul>

	<ul style="list-style-type: none"> <li>• <a href="http://bg-monitor.com">BG Monitor - Diabetes Management for Android (bg-monitor.com)</a></li> </ul>
	<ul style="list-style-type: none"> <li>• <a href="#">OneTouch Reveal® Mobile and Web Apps   Logbook   OneTouch®</a></li> </ul>
To be completed by the supervisor:	
Is the Proposal Acceptable?	
If no, please give feedback:	

## GANTT CHART:

TASK	START DATE	END DATE	DURATION
<b>Initial Phase</b>	1/14/2024	2/5/2024	22
Topic Selection	1/14/2024	1/29/2024	15
Research	1/14/2024	2/2/2024	19
First Cut Proposal	1/27/2024	2/2/2024	6
Ethical Screening	1/29/2024	2/2/2024	4
Final Proposal	2/2/2024	2/5/2024	3
<b>Design Phase</b>	1/29/2024	2/6/2024	8
Gathering Requirements	1/29/2024	1/31/2024	2
Designing the application	1/29/2024	2/6/2024	8
<b>Development Phase</b>	2/2/2024	3/24/2024	51
Development phase-1	2/2/2024	2/24/2024	22
Development phase-2	3/1/2024	3/24/2024	23
<b>Testing and Analysis Phase</b>	2/25/2024	3/31/2024	35
Testing phase-1	2/25/2024	2/29/2024	4
Testing phase-2	3/25/2024	3/31/2024	6
<b>Documentation</b>	1/14/2024	4/9/2024	86
Blog	1/14/2024	3/31/2024	77
Report	2/2/2024	4/9/2024	67
Literature Review	2/2/2024	3/14/2024	41

Signed (digitally).....Date.....



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