

GUJARAT TECHNOLOGICAL UNIVERSITY

Chandkheda, Ahmedabad

Affiliated



VISHWAKARMA GOVT. ENG. COLLEGE

A
Project Report
On

(AI Health Care Bot)

Under subject of
DESIGN ENGINEERING [A]
B. E. II, Semester – III
(COMPUTER Branch)

Submitted by:

Group:

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An AI healthcare bot is a computer program that utilizes artificial intelligence to assist and support healthcare-related tasks, such as providing medical information, answering queries, offering health advice, and potentially aiding in the diagnosis and monitoring of health conditions.

- Design engineering:

Design Engineering is based on an internationally accepted design concept. A project is a process plan, its implementation and its implementation to achieve a goal. To turn an unwanted situation into a desirable state means to find a solution to an unwanted / negative situation.

- Design Thinking:

Differential design thinking into 6 elements. 6 of the 6 items are Observation, Empathy, Ideation, Product Development, Prototype and Testing. These features are very useful for design considerations and for learning design engineering. Team building is important for design engineering so you can share your thoughts with your team member and share their thoughts and with this thinking you are doing something different that is useful in real life. In terms of design, we also take care of the social economy so that local people can also use it. Today there is the scope of a major design thinking project. Our journey through this project is beneficial to us and the people who will be using this project. The idea of design is that you want to do what you think and apply it to life so your life that way is much easier than it used to be.

- Scope of this document:

The scope of AI in healthcare bots is vast and transformative for both patients and healthcare providers. These bots, equipped with advanced natural language processing and machine learning capabilities, can efficiently handle routine tasks such as appointment scheduling, medication reminders, and answering general health-related queries. Moreover, AI health bots can play a crucial role in remote patient monitoring, collecting real-time data to assess patient conditions and providing timely alerts to healthcare professionals. This not only enhances patient engagement but also allows for more personalized and proactive healthcare interventions.

- The case for e-publishing:

e-publishing is gaining acceptance among publishers for a variety of reasons and it can be argued that e-publishing, or at least examining its feasibility, is now a necessary step every publisher must take. Some of the reasons why e-publishing has become so important are:

1. Proliferation of reading devices.

2. Availability of cheap Internet connectivity.
3. Media Assimilation and Content Creation.
4. Access to distant markets.
5. Always available.

2.Literature Review

Overview on domain:

Artificial Intelligence (AI) in healthcare is revolutionizing the way medical professionals diagnose, treat, and manage patient care. By leveraging advanced algorithms and machine learning, AI applications in healthcare can analyse vast amounts of medical data quickly and accurately, leading to improved diagnostic accuracy and personalized treatment plans.

Problem Summary:

- The healthcare industry deals with sensitive patient information. Ensuring the security and privacy of this data is paramount.
- The healthcare industry deals with sensitive patient information.
- Compatibility issues and interoperability challenges may arise, requiring careful planning and coordination.

3.Design Consideration to Detail Design Part

3.1 AEIOU Canvas

- The A,E,I,O,U Summary sheet gives a quick view on the sheets
 - A-Activity
 - E-environment
 - I-interaction
 - O-objects
 - U-users

AEIOU Summary			Group ID: 446148	Date: 19/11/22	Version: 1.0.0.0
Domain Name: Health care Bot					
Environment : Hospital Clinic home	Interaction : Text Voice video	Objects : Smartphones Computer Chatbot			
Activities : no need to go library Consultation pocket friendly Diagnosis all type of book available		Users : Patients Administrators caregivers developers			

AEIOU represents Activities, Environments, Interactions, Objects, and Users. This is a Framework for organizing all the observations you make on the field during a user survey. But to better understand it, let's move on to the Compass Information Desk example. You will now find that searching for a viable solution is a workshop on design itself.

Activities are a set of goal-oriented actions - the path to goals that people want to achieve.

Environment describes the context and features of the environment in which the activities are viewed.

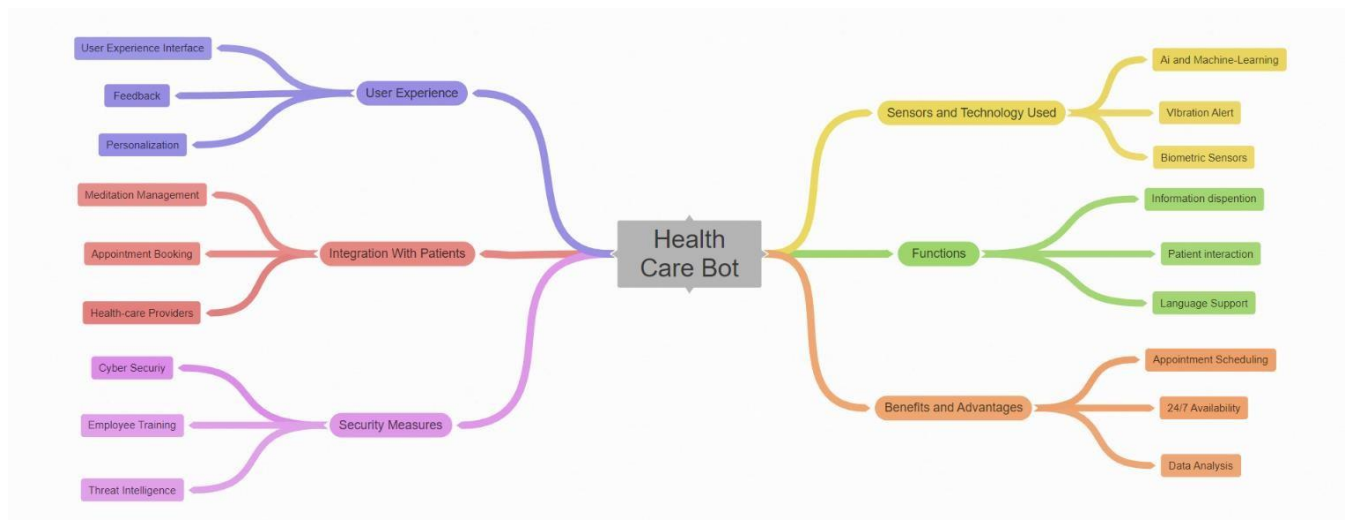
Interaction is between a person and a person or something; they are the building blocks of works.

Objects are natural building blocks, essential elements are sometimes used in complex or unintentional use, which may change their function, meaning and context.

3.2 Mind-Map

It is to present all the topics or points in the form of diagram. Drawing or any other form. Through this mind mapping canvas our intension will be clear about our topic and what we have to do. Mind mapping canvas is for easy understanding of the domain.

“A mind map is a visual representation of hierarchical information that includes a central idea surrounded by connected branches of associated topics”



□ Mind Mapping improves learning, information recall, productivity, creativity, and more:

- ✓ It enables Meaningful Learning.
- ✓ It helps with Memorization and Retention.
- ✓ It's More Engaging Form of Learning.
- ✓ It Makes Complex Issues Easier to Understand

3.3 Empathy Mapping Canvas

Design for : Health care bot		Design By : 446148	
Date: 19/11/22		Version : 1.0.0.0	
USER college student Customer Client professor senior citizen		employees patient professional people consumer children	STACKHOLDER foundations Shareholders readers Investors rich parents
		students Suppliers web developer Employees	
ACTIVITIES			
Research		Usage	Interaction
Purchasing		Support	Feedback
STORY BOARDING			
HAPPY Sarah describes her symptoms to the AI bot, which asks follow-up questions to gather detailed information. The AI bot reassures her and provides information about potential causes.			
HAPPY The AI bot analyzes Sarah's symptoms using advanced algorithms and suggests a potential diagnosis. It provides helpful advice and recommends consulting a healthcare professional for confirmation.			
SAD Alex struggles to articulate his symptoms, and the AI bot misunderstands, leading to a delay in providing appropriate assistance.			
SAD Alex attempts a virtual consultation, but technical glitches disrupt the session, leaving him frustrated and isolated.			







Empathy Canvas is divided into various sections the section which you are seeing over your is a user section then the stakeholder's, activities, storyboarding, and then you have a happy or sad story.

Empathy Mapping Canvas is used to develop a deep, shared understanding and empathy for other people, an Empathy Map is a tool that helps Describe aspects of a user's experience, needs and pain points. This template allows you to quickly understand your user's experience and mindset.

In this, Activities, Users, Stockholders and Story Boarding is discussed.

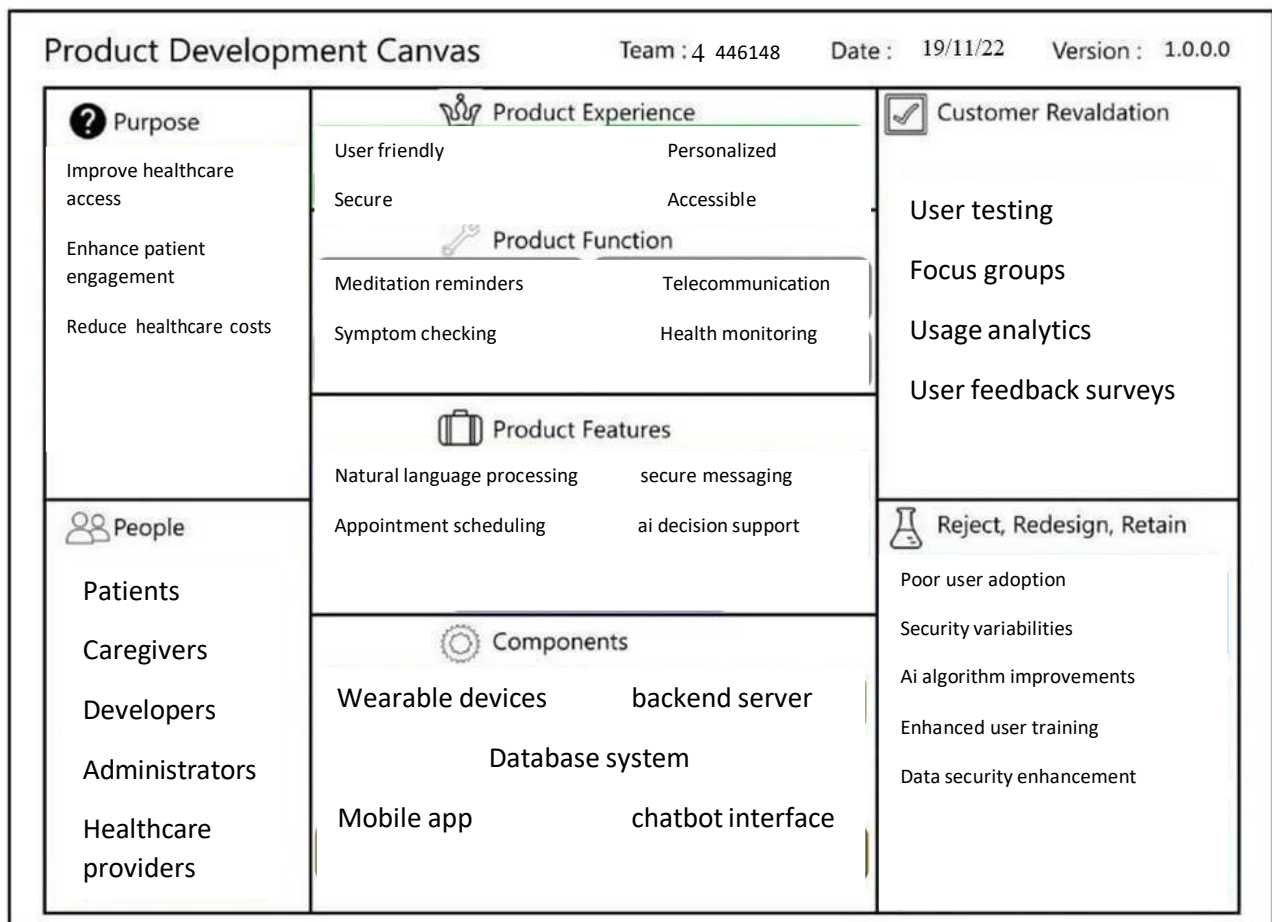
3.4 Ideation Canvas

The ideanaut : Ideation Canvas		Project :	Health care bot	Team :	446148
<div> <div>  People </div> <div> Patient Family members </div> <div> Caregivers Administrators </div> </div>					
<div>  Activities </div> <div> Diagnosis Health monitoring </div> <div> Treatment Meditation Management </div>			<div>  Situation/Context/Location </div> <div> Hospital Home </div> <div> Clinic Workspace </div> <div> Mobile Remote Area </div>		
<div>  Props/Possible Solution </div> <div> Chatbot interface Mobile App Wearable Devices </div> <div> EHR integration Telehealth platform Ai powered decision </div>					

“Ideation is the mode of design process in which you concentrate on idea generation”

Ideation is the process where you generate ideas and solutions through sessions such as sketching, prototyping, brainstorming, brain writing, worst possible idea and a wealth of other ideation techniques.

3.5 Product Development Canvas

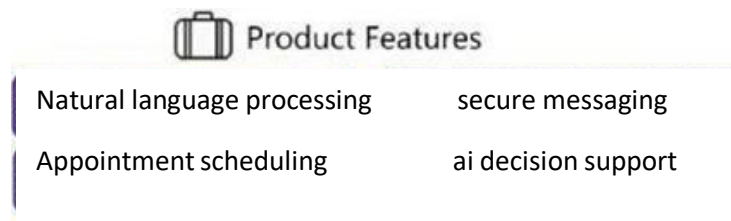


The Product Development Canvas is often abbreviated as PDC. There are several sections that make up the PDC including user, purpose, experience, imagine and visualize the feelings expectations and experience that users will have after interacting with the developed product and think about the functions, features, components and validation and revalidation.

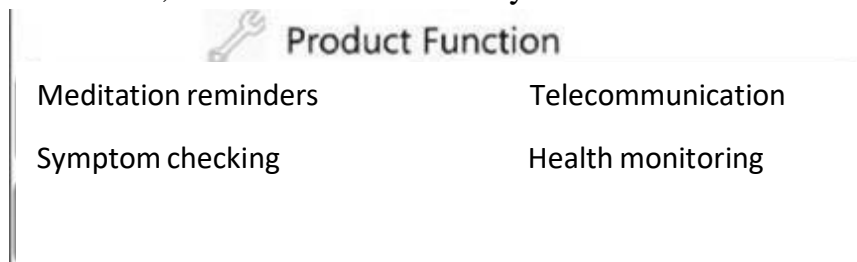
- Purpose of our project is to make our generation healthy.



- Project Features are Online Book Store, Variety in learning, Responsive Design, User-friendly, Intuitive learner interface



- Project Functions :- Send timely reminders for medication adherence, Track and analyze health data, such as vitals or activity levels.



- Component : Wearable devices,backend server,Database system,Mobile app,chatbot interface



Components

Wearable devices

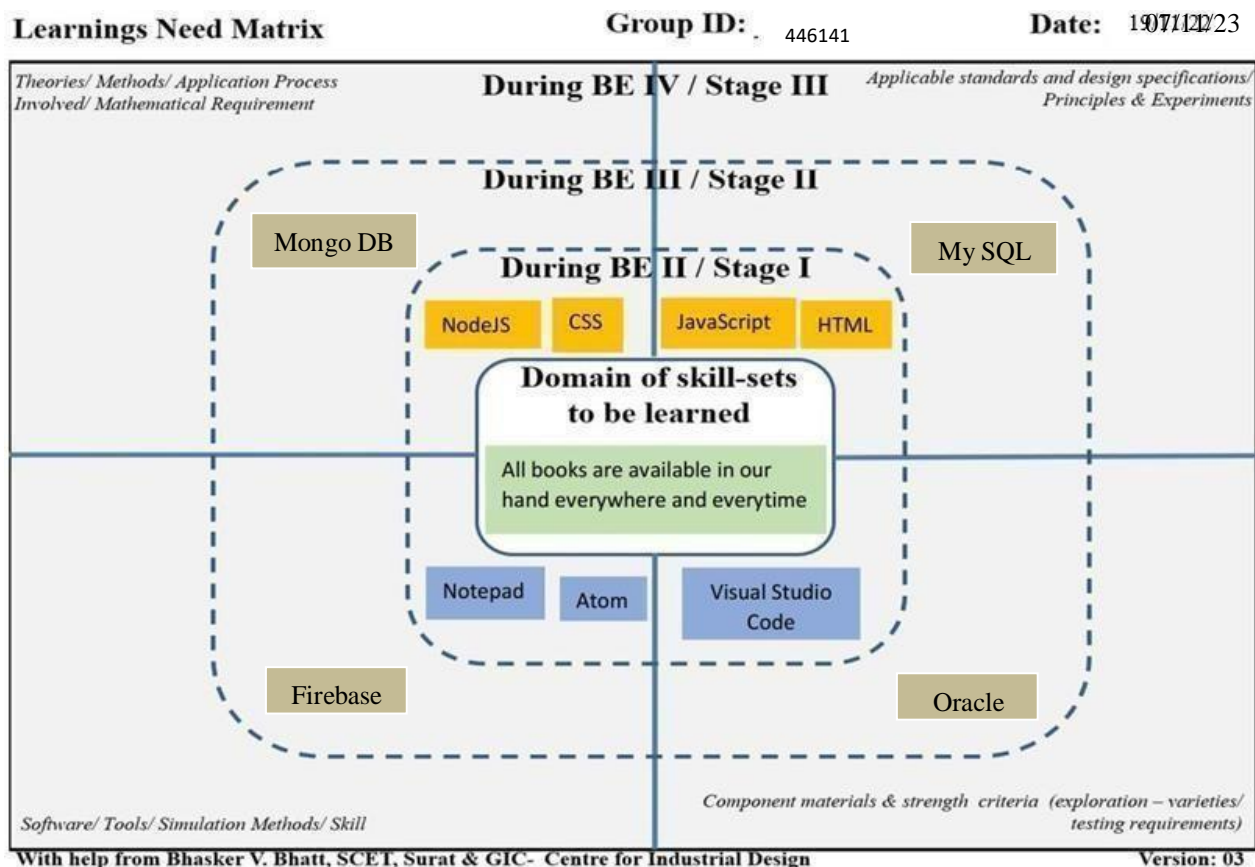
backend server

Database system

Mobile app

chatbot interface

3.6 Learning Need Matrix



The Learning Needs Matrix Canvas will help the learner to see the need to learn early and to prioritize / allocate time for each learning priority.

During BE II / Stage I NodeJS, CSS, JavaScript, HTML, Notepad, Atom, VS Code is required.

The importance of matrix reading requirements in diagnostics means that screening will focus on writing both readings, which are included in a specific topic syllabus to solve

4. Conclusion & Future Work

Conclusion:

An AI healthcare bot serves as a transformative tool in the healthcare sector, streamlining patient interactions, improving diagnostic processes, and enhancing overall efficiency. By leveraging advanced algorithms and natural language processing, these bots facilitate accessible and personalized healthcare information, contributing to quicker responses, early detection of medical issues, and ultimately, more effective patient care.

Future Works:

- Enhance the ability of AI healthcare bots to provide real-time clinical decision support to healthcare professionals.
- Develop AI bots that can analyse individual patient data to recommend personalized treatment plans
- Improve the capability of AI bots to continuously monitor patient health through wearable devices and other sensors.
- Enable more intuitive and conversational interactions between patients and AI healthcare bots.

5. References:

[For Health care: Website | Redox](#)

6. Plagiarism certificate

3.2 Mind-Map

It is to present all the topics or points in the form of diagram. Drawing or any other form. Through this mind mapping canvas our intension will be clear about our topic and what we have to do. Mind mapping canvas is for easy understanding of the domain.

"A mind map is a visual representation of hierarchical

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Definition:

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Design engineering:

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