GUJARAT TECHNOLOGICAL UNIVERSITY

Chandkheda, Ahmedabad

Affiliated

GOVERNMENT ENGINEERING COLLEGE, SECTOR-28, GANDHINAGAR

A Report on –

Bluetooth based Surveillance and Monitoring Robot System

Under the subject of

DESIGN ENGINEERING – IIB

B.E. III, Semester VI

(Electronics and Communication Engineering)

Submitted by:

GROUP ID: 413015

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PROJECT

LOG BOOK

LOGBOOK: 13-WEEK PROJECT TIMELINE

Week 1 (30/1 – 05/2)	The first week of the new semester was a busy one for our group. We had a lot to do, including registering our project on the DE online portal, discussing whether to continue our last semester's project or start a new one, and making any necessary changes to the project. We held regular meetings throughout the week to discuss our options. We weighed the pros and cons of continuing our last semester's project versus starting a new one. In the end, we decided to continue our last semester's project because we were all passionate about it and we felt that we could make it even better. Once we made the decision to continue our last semester's project, we turned our attention to registering it on the DE online portal. This process was relatively straightforward, but it did require us to provide a lot of information about our project, including the title, the abstract, project keywords, and additional information. We also discussed whether we wanted to make any changes to the project. We decided to make a few minor changes, such as updating the title. We also asked our internal guide for input on the project. She provided us with some helpful suggestions, which we incorporated into the project. By the end of the week, we had made a lot of progress on our project. We had registered it on the DE online portal, made a few minor changes to the project, and received some helpful feedback from our internal guide. We were excited to get started on the project and we were confident that we could make it a success.
Week 2 (06/2 – 12/2)	Throughout the week, our team diligently engaged in mapping out our project's workflow and scheduling the corresponding activities. This strategic planning held great significance due to the multitude of commitments that accompany a college semester, including mid-term exams, vivas, assignments, and submissions. By proactively organizing our tasks, we granted ourselves the flexibility to accommodate unforeseen assignments or exams effectively. Our comprehensive plan encompassed vital milestones such as the creation of the project canvas, the development of a prototype, and the compilation of a detailed report. To ensure a fair distribution of responsibilities, we divided the workload evenly among the three members of our group. Fortunately, we were fortunate to have the guidance and support of our internal mentor, who proved invaluable in steering us in the right direction throughout the planning process.
Week 3 (13/2 – 19/2)	The planning phase continued this week as we focused on ways to improve our project and add new functionalities. We scoured the internet for ideas,

	watched videos related to our project, and compiled our findings. We also frequently asked our internal guide for feedback and suggestions. We spent a lot of time brainstorming and discussing different options. We wanted to make sure that we were making the best possible decisions for our project. We also wanted to make sure that we were meeting the needs of our users. We are confident that we have made some great improvements to our project. We are excited to move into the next phase of development and see what we can create.
Week 4 (20/2 – 26/2)	Since we carried forward our project from the previous semester, we skipped the Project Definition section this time. Instead, we utilized this opportunity to extensively research potential prototypes for our project. We explored numerous circuits available on the internet, carefully evaluating alternative options for various components and designs based on their performance, cost, and relevance to the scale of our prototype. After thorough consideration and discussion, we ultimately settled on a final circuit configuration and selected the necessary parts for our prototype. To ensure the quality and effectiveness of our choices, we sought feedback and suggestions from our internal guide, who provided valuable remarks and recommendations.
Week 5 (06/3 – 12/3)	This week, we spent our time developing the **Ideation Canvas**. The ideation canvas is a systematic way to organize and brainstorm ideas. It helps us to think creatively and come up with innovative solutions. The ideation canvas is divided into four sections: • *Problem*: The problem section helped us to identify the specific problem that we were trying to solve. In our case, the problem was that people were not able to find the information they needed quickly and easily. • *People*: The people section helped us to identify the people who were affected by the problem. In our case, the people who were affected by the problem were students, faculty, and staff. • *Situations and Activities*: The situations and activities section helped us to identify the situations and activities that were related to the problem. In our case, the situations and activities that were related to the problem were searching for information, finding information, and using information. • *Solutions*: The solutions section helped us to brainstorm solutions to the problem. In our case, some of the solutions that we brainstormed were creating a search engine, creating a directory of resources, and creating a tutorial on how to use the library.

We found that the ideation canvas was a very helpful tool for brainstorming ideas. It helped us to think outside the box and come up with creative solutions to the problems that we were facing.

Week 6
(13/3 – 19/3)

This week, we spent our time developing the **Product Development Canvas (PDC)**. The PDC is a planning tool that helps us build products with a great user experience through a focus on feature development.

- *People*: The PDC canvas helps us to identify the people who will be using the product. This includes the target audience, as well as any other stakeholders who will be affected by the product.
- *Purpose*: The PDC canvas also helps us to define the purpose of the product. What problem does the product solve? What value does it provide to the user?
- *Functions and features*: The PDC canvas allows us to list the functions and features of the product. This includes both the core features that are essential for the product to work, as well as any additional features that would be desirable.
- *Components*: The PDC canvas also helps us to identify the components that are required to build the product. This includes both the hardware and software components, as well as any other resources that will be needed.
- *Customer feedback*: Finally, the PDC canvas allows us to collect customer feedback. This feedback can be used to improve the product design, as well as to identify any potential problems that may arise.

The PDC canvas is a valuable tool that can help us to build better products. By considering all of the factors listed above, we can create a product that is focused, successful, and meets the needs of the users.

Week 7
(20/3 – 26/3)

This week, we spent time developing a **Learning Needs Matrix (LNM)** canvas. The LNM is a tool that helps students identify the learning requirements that are most needed in industry or in their career at an early stage. It also helps students prioritize specific learning.

By developing the LNM, we were able to gain a clearer understanding of the skills that would be required for our project. This allowed us to identify which skills we would need to learn, which may or may not be a part of our standard engineering branch curriculum.

- The LNM is a four-quadrant grid. The first quadrant is for skills that are essential for the project and are not covered in the standard curriculum. The second quadrant is for skills that are essential for the project and are covered in the standard curriculum. The third quadrant is for skills that are not essential for the project but would be helpful. The fourth quadrant is for skills that are not essential for the project and would not be helpful.
- To complete the LNM, students identify the skills that are needed for their project. They then place each skill in one of the four quadrants.

	• The LNM can be used to prioritize learning. Students can focus their learning on the skills that are in the first and second quadrants. • The LNM can also be used to track learning progress. Students can track their progress by checking off the skills that they have learned.
Week 8 (27/3 – 02/4)	During this week, our primary focus was on reviewing and refining our LNM (Learning Needs Matrix), PDC (Problem Development Canvas), and ideation canvas. We collaborated closely with our internal guide, carefully considering any feedback provided and making necessary corrections to address the remarks. Once the required modifications were completed, we obtained the necessary signatures on the canvases. Finally, we uploaded the finalized versions of the canvases onto the online DE portal.
Week 9 (03/4 – 09/4)	This week was dedicated to conducting our **Monthly Assessments**. We embarked on a survey mission, reaching out to individuals who work in dangerous situations in factories or plants. Through a series of thoughtful inquiries, we gathered valuable feedback on our product, encompassing aspects such as cost, size, maintenance, and overall usefulness. This feedback played a pivotal role in shaping our actions, as we made concerted efforts to align our product more effectively with the needs and preferences of our users. In an effort to maintain thorough documentation, our internal guide provided their official endorsement of our Monthly Assessment I within the same week. Consequently, we promptly uploaded the finalized assessment to the designated DE online portal, ensuring its accessibility and dissemination within our organization.
Week 10 (10/4 – 30/4)	During this specific time frame, productivity was notably low due to the presence of demanding assignments and subsequent mid-semester examinations. Consequently, there was a lack of substantial work accomplished during this period.
Week 11 (01/5 – 07/5)	During this week, we dedicated our efforts to visiting several electronic shops, diligently searching for the optimal prices on the parts needed for our prototype. This task demanded considerable time and patience due to the limited availability of certain components and the significant price variations among different shops. Furthermore, we made a crucial decision to switch our serial communication module from ESP8266 to HC-04 module. The Arduino option proved to be more expensive, lacking some of built-in functionalities we required.

	In addition to our pursuit for the best deals and the communication module transition, we successfully concluded our Monthly Assessment II within the same timeframe. We meticulously completed the assessment and obtained the necessary signatures and approval from our internal guide.
Week 12 (08/5 – 14/5)	During the prototyping phase of our project, we encountered several challenges and setbacks. One notable mistake was when we messed up the Arduino code for controlling the DC Motors connected in the prototype. Additionally, our breadboard malfunctioned and ceased to function properly during the trial sessions, requiring us to replace it. Despite these difficulties, we persevered and successfully completed the prototype. We then presented our work to our internal guide, seeking their approval and any constructive feedback they may have.
Week 13 (15/5 – 19/5)	We have successfully concluded our Monthly Assessment III, accomplished all the necessary tasks and reached the final stage of completion.