



e-ISSN: 2319-8753 | p-ISSN: 2347-6710

IJIRSET

International Journal of Innovative Research in
SCIENCE | ENGINEERING | TECHNOLOGY

INTERNATIONAL JOURNAL OF INNOVATIVE RESEARCH

IN SCIENCE | ENGINEERING | TECHNOLOGY

Volume 12, Issue 4, April 2023

ISSN INTERNATIONAL
STANDARD
SERIAL
NUMBER
INDIA

Impact Factor: 8.423

9940 572 462

6381 907 438

ijirset@gmail.com

www.ijirset.com

Remote Resource Monitoring System

Nidan Gavali, Vaibhav Deshmukh, Kaustubh Gharat, Vaishali Shirsath

Department of Information Technology, Vidyavardhini's College of Engineering & Technology, Vasai, India

Department of Information Technology, Vidyavardhini's College of Engineering & Technology, Vasai, India

Department of Information Technology, Vidyavardhini's College of Engineering & Technology, Vasai, India

Department of Information Technology, Vidyavardhini's College of Engineering & Technology, Vasai, India

ABSTRACT: The pharmaceutical industry plays an active role in policy surrounding the research, discovery and development of new medicines. These processes involve various kinds of drugs to be stored and preserved. Hence, Resource Monitoring Systems play a vital role in this process. There are different companies with different requirements for drugs. There are various kinds of drugs which require/demand different storage conditions. Meeting these independent, disparate conditions is a very difficult task. This system provides a comprehensive solution to all these needs of the industry. It is an Arduino based sensor setup and Windows Software based to monitor temperature and humidity. The system features an Advanced User Access Control System, Monitoring System, etc. in amalgamation to form this elaborate Resource Monitoring System.

I. INTRODUCTION

There is a need to monitor the stored drugs or medicines for the pharmaceutical companies, if not done properly and timely the industry could incur huge setbacks, losses. The current resource monitoring systems are outdated and have some flaws in them. The objective of Resource Monitoring Systems in the pharmaceutical industry is to preserve drugs in godowns. Our systems aim at remote accessibility to these systems whilst offering various features like Monitoring, Alerting, Generating/Accessing reports etc.

II. EASE OF USE

A. Relevance

The task of monitoring the resources in the pharmaceutical industry demands lots of monetary investments. Making the systems remote would cut down a significant amount of these requirements. Hence, success of this system directly affects the industry

III. REVIEW OF LITERATURE

A. Medicine Parameters Monitoring Using IoT

This paper presents an electronic device to monitor the medical goods during their exportation to overseas. During the exportation of medical goods overseas, it is necessary to ensure that the medicines will be maintained in the healthy surrounding or not to prevent the medicines from lack of quality. This problem can be overcome by monitoring the temperature, humidity and location of the medical goods containers by using sensors, actuators and Internet of Things [IoT]. The constant supply of power for a long time to the device and the collection of data during the absence of a network are also some of the important aspects discussed in this paper.

This research paper highlights the importance of maintaining various attributes of the stored drugs/medical goods in order to preserve them. We learnt about some important attributes of the resources that we need to consider while designing our system. Maintaining the Integrity of the Specifications

B. An IoT-Based Real-Time Intelligent Monitoring and Notification System of Cold Storage.

This paper proposes a real-time Intelligent Monitoring and Notification System. The existing monitoring systems available related to cold storage only gauge some of the attributes like temperature, relative humidity and ignore various other attributes like luminosity and concentration of gasses. The problem here is the inability to gauge various vital ambient environmental attributes in cold storage. As a result, FVs loss rate is high among the food being produced per year and mostly occurs at storage stage of the postharvest life cycle. This system i.e., the proposed solution, is a



real-time monitoring system which notifies the relevant personnel whenever the limits of these important parameters are exceeded.

This research paper based on the working of cold storage helped us in designing our system as they have some similarities in their working objectives.

C. Real-time intelligent monitoring systems based on IoT

Security systems and the domain in general have seen a boom recently. The security in households due to various causes is one of the important problems to look into. There are various systems available to cater to such problems. One of such systems is the flame leak and gas detection system. This system monitors the presence of gas concentration and presence of fire in the atmosphere. The system sends an alerting message to the concerned person after reading and processing the data gathered by the fire and gas sensor. This research paper about flame leak detection systems helped us in understanding the remote alerting system which would be required in our system.

IV. REPORT ON THE PRESENT INVESTIGATION.

A. Research

The initial step towards the research was a discussion with the clients about their needs of the project and their expectation from us. Thus, a mutual understanding was established about the problem faced and solution to it. The idea of the project was to build a remote monitoring system which will monitor the conditions of the medicines or drugs stored in the warehouse. According to our research there are Monitoring systems for different resources like dairy products, medicines, chemicals etc. which need to be stored under certain humidity and temperature. The key flaw in those systems was that the user couldn't access the system remotely. Taking reference from different such systems, a relevant system was designed. and rms do not have to be defined. Do not use abbreviations in the title or heads unless they are unavoidable

B. Prototyping

Based on the requirements we started creating generic prototypes for our system. On presenting the mock ups to the clients, changes were suggested to fit the specific requirements of the client. Fig. 1 shows the initial prototype created.

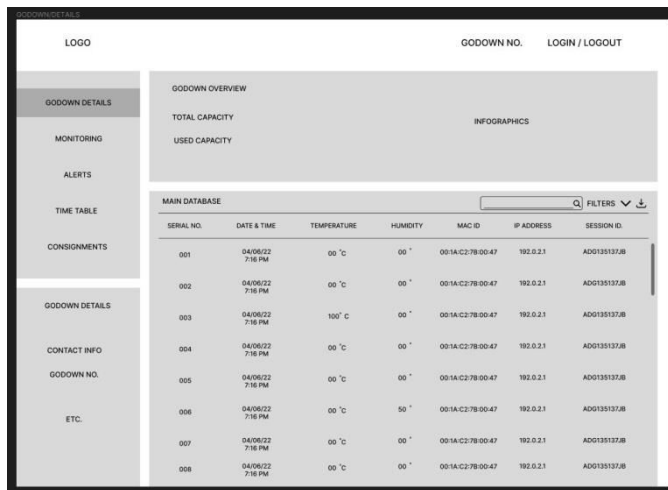


Fig.1. Low-Fi Wireframe

C. System Design

The system was designed based on the research done and discussion with clients. Based on this following factor were made which is shown in Fig. 2

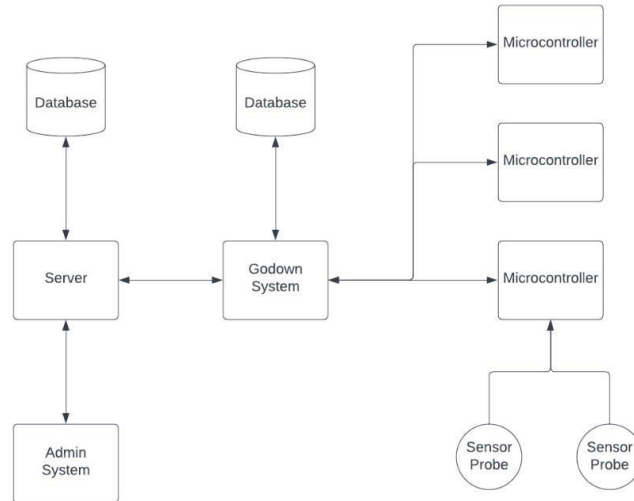


Fig. 2 Data Flow Diagram

1. As per discussions with the client, following architecture was created. The architecture mainly consists of Sensor probes
2. These Sensor probes are connected to micro-controllers which are customized according to the project needs.
3. The data i.e., Temperature and Humidity is read by Sensors probe which is then passed to the micro-controllers. This data is then sorted according to the serial Id given to every sensor probe.
4. The data is fetched from the microcontroller to the godowns system which is then stored in the local database and cloud server.
5. The admin system can access the data anytime remotely through their PC from the server.

D. Godown System

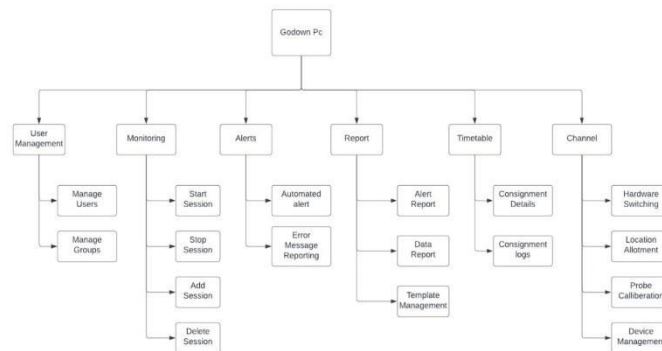


Fig. 3 Block Diagram of Godown System

- 1) The Godown system is basically a Human Computer Interface which interacts with the user.
- 2) The System consist of 6 different modules with different roles. The modules are as followed:
 1. Homepage: This would consist of User management factors. The factors are:
 - a. Manage Users: This module is basically used to manage different types of users. Every user is segregated in different groups on the basis of which access is given.



- b. Manage Groups: This module is used to manage different groups and give access to the groups whenever needed.
2. Monitoring Page: This page would consist of parameters on the basis of which the medicines will be monitored. This page consists of Start Session, Stop Session. A session is basically an instance in which the sensor probe reads the data and later it is fetched by the micro-controller.
3. Start Session: Start Session is used to start the instance i.e. to start fetching data from the sensors.
4. Stop Session: Stop Session is used to stop the instance.
5. Alerts Page: As the project is mainly based on monitoring the medicines, the alert page which gives information if there are any issues detected with the medicines. An error message is generated and shown on this web page.
6. Report: This module will generate reports in the template selected by the user. The reports will consist of information about the different parameters. There are different templates which can be inherited by the user in the system. Data Report, Template Management are also done on this page.

V. RESULTS AND DISCUSSIONS

A. Final Prototype

The reiterated prototype according to the clients' requirements. This mockup was designed keeping in mind the Users, requirements and flexibility for further changes during implementation. The final prototype is shown below in *Fig. 4*

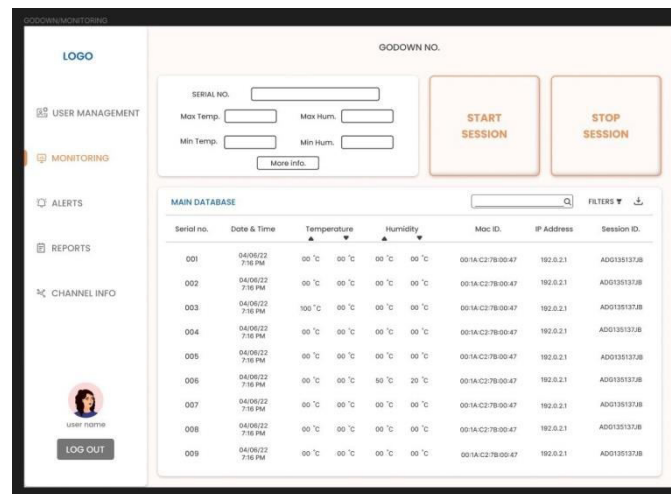


Fig. 4 Hi-Fi Prototype

B. Front-End

All the Web pages are made using HTML, SCSS and JS. Django Templates are created in which following languages are used. Some of the pages are shown in Figures below.



|| Volume 12, Issue 4, April 2023 ||

| DOI:10.15680/IJIRSET.2023.1204340 |

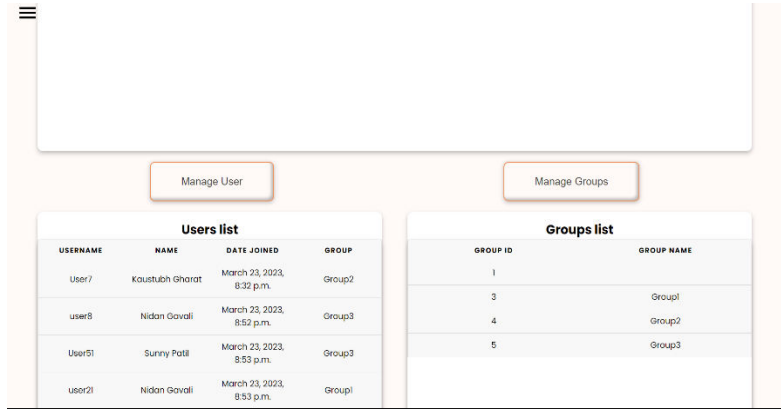


Fig. 5 User Management Page

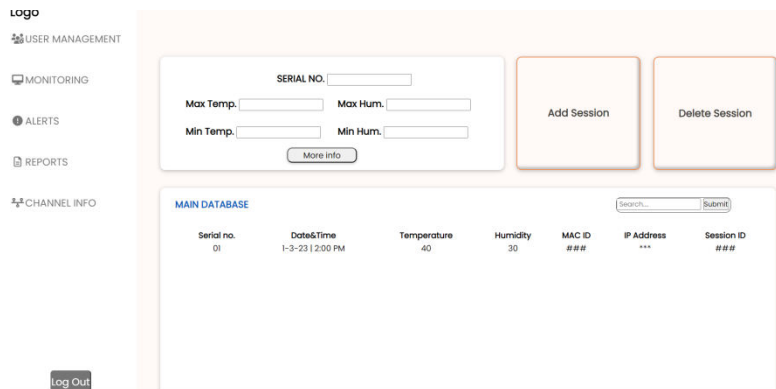


Fig. 6 Monitoring Page

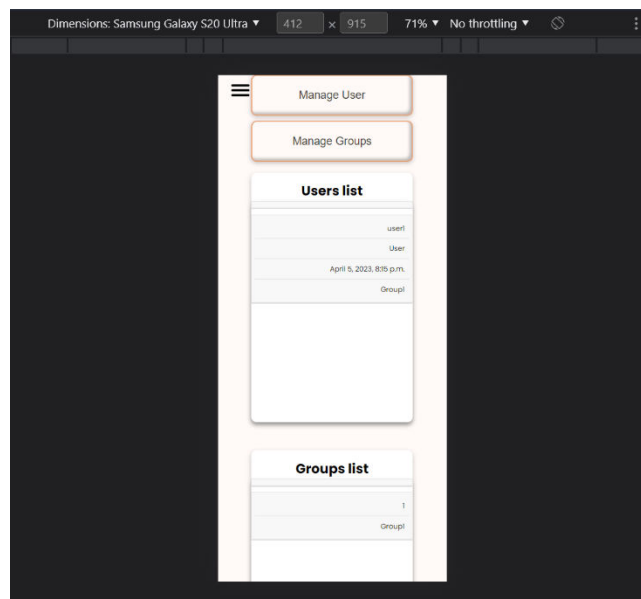


Fig. 7 Dashboard in a Smartphone



VI. CONCLUSION AND FUTURE WORK

During the course of this project so far, we have explored and studied various systems. Based on our study and multiple discussions with the clients we have come up with our solution i.e., the proposed system. We used Figma for creating our iterations of prototypes. We have successfully deployed the Web-app on pythonanywhere.com.

REFERENCES

- 1.H. Afreen and I. S. Bajwa”, title=” An IoT-Based Real-Time Intelligent Monitoring and Notification System of Cold Storage”, journal=” IEEE Access”, year=”2021”, volume=”9”, pages=”38236-38253”, issn=”2169-3536”,doi=”10.1109/ACCESS.2021.3056672”, url=https://ieeexplore.ieee.org/abstract/document/9345700
- 2.M. Bharani Aswath, V. Kamalesh, M. Koushik and R. Prema, title = Medicine Parameters Monitoring Using IoT, book title=Third International Conference on Intelligent Communication Technologies and VirtualMobileNetworks, year=2021, url=https://ieeexplore.ieee.org/abstract/document/9388623/keywordskeywords,location=Tirunelveli,India,pages=349-353,doi=10.1109/ICICV50876.2021.9388623, publisher = IEEE
- 3.S. G. Srivatsa, K.R.M. Bharadwaj, S.L. Alamuri, M.M.C. Shanif and H. S. Shreenidhi, title = Smart Cold Storage and Inventory Monitoring System, publisher=IEEE, year=2021, url=https://ieeexplore.ieee.org/abstract/document/9573939,doi=10.1109/RTEICT52294.2021.9573939,isbn=978-1-6654-3559-8
- 4.D. N. N., K. M. D. and K. A. Zh.,” Using the Internet of Things (IoT) for Natural Resources Monitoring System,” 2021 IEEE International Conference on Smart Information Systems and Technologies (SIST), 2021, pp. 1-5, doi: 10.1109/SIST50301.2021.9465979.
- 5.<https://www.sciencedirect.com/science/article/abs/pii/S0010482521008945>: A robust drug recall supply chain management system using Hyperledgerblockchain ecosystem.
- 6.<https://www.behance.net/gallery/126348139/ePharma-UX-Case-Management-System/modules/717183603>
- 7..<https://www.accordbox.com/blog/how-use-scss-sass-your-django-project-python-way/>
- 8.<https://blog.logrocket.com/sass-react-native-guide/>
- 9.https://www.researchgate.net/publication/327302241Implementationofaremotemonitoringsystemfor_condition_based_maintenance_using_wireless_sensor_network_Case_study.
- 10.https://www.behance.net/gallery/141528133/Doctor-Management-SAAS-Application_and_-Mobile-App?_tracking_source.



SJIF Scientific Journal Impact Factor

Impact Factor: 8.423



INTERNATIONAL JOURNAL OF INNOVATIVE RESEARCH

IN SCIENCE | ENGINEERING | TECHNOLOGY

 9940 572 462  6381 907 438  ijirset@gmail.com



www.ijirset.com

Scan to save the contact details