

Business Proposal: IoT Based Temperature and Humidity Monitoring Application

Introduction:

We propose to develop an IoT-based application that can detect and log the temperature and humidity of the environment using a DHT22 sensor interfaced with a Raspberry Pi 4. The data will be transmitted and stored on an internet-based platform using ThingsBoard.

Background on the problem, opportunity or situation:

Temperature and humidity monitoring are essential for several applications such as environmental monitoring, weather forecasting, industrial control, and scientific experiments. The traditional monitoring systems are manual and time-consuming. With the advancement of technology, IoT-based monitoring systems have become popular due to their convenience and efficiency. Our proposed system will address the limitations of the traditional monitoring systems and offer a more convenient and efficient solution.

Benefits and feasibility of the proposed project:

Our proposed system will provide real-time monitoring of the temperature and humidity of the environment, which will help optimize the conditions for plants or animals, improve energy efficiency, and detect potential hazards such as mold or pests. The data collected can also be used to predict weather patterns, optimize production, and reduce the risk of equipment failure or product degradation.

The project is feasible as it involves the use of readily available components such as the Raspberry Pi 4, DHT22 sensor, VGA cable, LCD, and breadboard. The project can be completed within a month from the date of proposal submission and acceptance.

Description of the proposed work (results of the project):

The proposed system will consist of a DHT22 sensor interfaced with a Raspberry Pi 4, which will be used to process and transmit the sensor data to the ThingsBoard platform. A VGA monitor will be used to display the Raspberry Pi 4 operating system. The data

collected by the DHT22 sensor will be logged onto an internet web application using ThingsBoard.

Method, procedure, theory:

The system will use the Raspbian operating system and Python programming language for developing the application. The DHT22 sensor will be interfaced with the Raspberry Pi 4 using a breadboard and a cable connector. The sensor data will be processed and transmitted to the ThingsBoard platform using the internet.

Costs, resources required:

The proposed project will require the following components:

Hardware Components:

Component	Price (Rs)
Raspberry Pi 4	49,000.00
DHT22	800
SD Card (16 GB)	700
Cable connector	1,000
VGA Converter	1500
VGA LCD (14 inches)	14999

Software:

Software	Subscription Price (Rs)
Raspbian	3000
ThingsBaord	5000 (Monthly)
Editor	0

OTHERS:

Other Resources	Cost
Wi Fi	2500
Office	8000 (Monthly)
Security Deposits	5000

The project will require a budget of approximately Rs. 51,500. The components will be provided by the faculty and will be returned in the same state as provided.

Conclusions:

The proposed system will provide a more convenient and efficient solution for temperature and humidity monitoring. The data collected by the system can be used for several applications such as environmental monitoring, weather forecasting, industrial control, and scientific experiments. The project is feasible and can be completed within a month from the date of proposal submission and acceptance.

Special project-specific sections:

The project is part of the PhD research of a faculty member, and the development of the application will be supervised by the faculty. The possible applications of the system include environmental monitoring, weather forecasting, industrial control, and scientific experiments.