

ABSTRACT

The concept of the Internet of Things, often abbreviated as IoT, is aimed at harnessing the advantages of uninterrupted internet connectivity. It encompasses a wide range of functionalities, including data sharing and remote control, all extending into the realm of tangible objects in the physical world. IoT technology has the power to revolutionize our daily lives, automating tasks that were once carried out manually.

This research project places its central focus on the development of an automatic fish feeding system, leveraging IoT technology. The core components of this system comprise NodeMCU microcontrollers, a temperature sensor for monitoring water temperature, and a pH sensor for tracking water acidity levels. The primary objective is to create a smart system capable of monitoring and maintaining optimal water conditions while simultaneously automating the fish feeding process. Moreover, this innovative system is accessible and controllable through a dedicated mobile application.

The mobile application serves as a control center for users, allowing them to manage feeding schedules and customize settings to cater to the unique needs of their fish. Scheduled feeding becomes effortless, ensuring that our aquatic companions are well-nourished. Furthermore, the system incorporates an ultrasonic sensor tasked with detecting the quantity of fish food remaining in the container. When the sensor identifies an empty food container, it promptly sends a notification to the user's mobile application, ensuring that the fish are never left hungry.

While previous research has explored the realm of automatic fish feeding, the primary emphasis has often been on scheduling feeding routines. In this particular study, our focus shifts towards the automatic feeding of betta fish, a species known for its distinct care requirements. Additionally, we delve into the crucial aspects of monitoring water temperature and pH levels within the aquarium, thereby offering a comprehensive and sophisticated solution for the well-being of these cherished aquatic pets.

Keywords: *IoT*, *NodeMCU*, Automatic Fish Feeder, pH sensor, temperature sensor.