VISVESVARAYA TECHNOLOGICAL UNIVERSITY

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PROJECT REPORT

On

"AQUAPONICS SYSTEM: IOT BASED INNOVATIVE PLANT CULTIVATION AND FISH FEEDING SYSTEM"

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In partial fulfillment of the requirements for the degree of

BACHELOR OF ENGINEERING

In INFORMATION SCIENCE AND ENGINEERING under the Guidance of

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DEPARTMENT OF INFORMATION SCIENCE AND ENGINEERING

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CERTIFICATE

Certified that the project work entitled "Aquaponics System: IoT Based Innovative Plant Cultivation and Fish Feeding System" is a bonafide work carried out by

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In partial fulfillment for the award of BACHELOR OF ENGINEERING in **INFORMATION SCIENCE AND ENGINEERING** of the **VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELGAUM** during the year 2019-2020. It is certified that all corrections/suggestions indicated for Internal Assessment have been incorporated in the report deposited in the departmental library. The project report has been approved as it satisfies the academic requirements in respect of project work prescribed for the Bachelor of Engineering Degree.

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ABSTRACT

Getting appropriate water source for fish and plant cultivation seems difficult. Moreover, the agricultural production is decreasing due to narrower lands so that land- and water-saving technology combined with a variety of vegetable is important to produce maximum yield. Aquaponics is a sustainable agriculture system in a symbiotic environment by combining aquaculture and hydroponics. This water system should flow on the planting medium periodically to ensure the plants get the nutrients, while the water can be filtered properly by the medium. Aquaponics is a system which amalgamates the aquaculture & hydroponics that grows fish and plants together in one system. It utilizes fish wastes to provide essential nutrients to the plants and in reciprocation the plants will purify the water and gives it back to the fishes. The purport of this paper is to build an efficient system by implementing aquaponics system by utilizing the technology of IOT (Internet of Things). By engendering an automated System with the avail of sensors interfaced with the Arduino board, it possible to automate fish victualing and water supply to the plants at the conventional interval of time. Subsisting system that coalesces these technologies must overcome the fundamental issues like cost, victuals quality control and circumscribed grow. In this paper we intend to propose a kit which contains all these features mentioned above, and that is auxiliary to provide the rudimental organic vegetation for the abode along with Aquaculture farmers and exporters conventionally face concerns cognate to data of their farm, while utilizing digital apps (Mobile Applications). Due to Rapid hypoxia of the aquaculture water is one of the important factors that cause large area death of the aquaculture animals. The monitoring for the dissolved oxygen (DO) of the aquaculture water is very important to the safety of the aquaculture production. An intelligent monitoring system for DO of the aquaculture water is designed which provides a powerful technology method for maintaining the DO level of the aquaculture water in a good range. This research designed a smart aquaponics system that could control and monitor the degree of acidity, water level, water temperature, and fish feed that were integrated with internet-based mobile application.