

**VISVESVARAYA TECHNOLOGICAL UNIVERSITY
BELAGAVI, KARNATAKA**



**AUTOMATION OF WATER MANAGEMENT SYSTEM USING
LabVIEW**

A Project Report

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ABSTRACT

Water resource management is the activity of planning, developing, distributing and managing the optimum use of water resources. The current work deals with the use of LabVIEW, a graphical programming language, to automate the water management process. LabVIEW is used to design and process the code with the Arduino development board acting as the interface.

Research has been carried out on microcontroller based automated water level sensing and controlling systems as well as feedback control using LabVIEW. Effective water management begins with timing and regulating water distribution. Lack of automation and human error leads to excess water usage, which leads to increased human effort and scarcity of fresh water for daily use. This problem is compounded further due to the rise in salinity levels, in the water sources, during high summer. The purpose of the current work is to reduce water wastage and human effort by partial/complete automation of the present water management system.

The current work uses the LabVIEW environment for initial code development and simulation of the proposed system. The real time situation is modelled into a small scale prototype. Components are tested individually and then integrated to form different subsystems. Subsystems are connected, monitored and controlled using LabVIEW. The system uses the LabVIEW software to automate the process of water pumping in the system and has the ability to detect the level of water in different tanks, switch on/off the pump accordingly and the status will be visible on a display.

The given solution controls the water resources automatically leading to an efficient water management system. The system executes this task independently while reducing human labour with a slight increase in electricity costs.

Long term data logging, incorporation of analog water level sensors will provide more precise data and use of pH, temperature and soil moisture sensors will lead to a more efficient system.