

# FPGA Based Green House Monitoring

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**Abstract-** The most important factors for the quality and productivity of plant growth are temperature, humidity, light and the level of the carbon dioxide. Continuous monitoring of these environmental variables gives information to the grower to better understand, how each factor affects growth and how to manage maximal crop productiveness. The optimal greenhouse climate adjustment can enable us to improve productivity and to achieve remarkable energy savings - especially during the winter in northern countries.

**Keywords-** monitor, mouse, windows, java, eclipse.

## I. INTRODUCTION

VHDL is a language for describing digital electronic systems. VHDL is an acronym for VHSIC (Very High Speed Integrated Circuit) Hardware Description Language. VHDL rose out of the United States Government's Very High Speed Integrated Circuits Project when it became clear that there was a need for a standard language for describing the structure and function of digital systems including integrated circuits and multi circuit configurations.

With FPGA devices, there are no test vectors to generate and no delay while waiting for prototypes to be manufactured. Because the devices are software configured and user programmed, modifications are much less risky and can be made any time in a matter of minutes.

## II. IDENTIFY, RESEARCH AND COLLECT IDEA

### 1. Controlling parameters

**Author:** Wael M El-Medany (University Of Bahrain)

**Remarks:** The design has been simulated and synthesized using Xilinx ISE 10.1i software tools. Searching for a hidden web Databases

### 2. Searching for a hidden web Databases

**Author:** O. Körner, H. Challaw

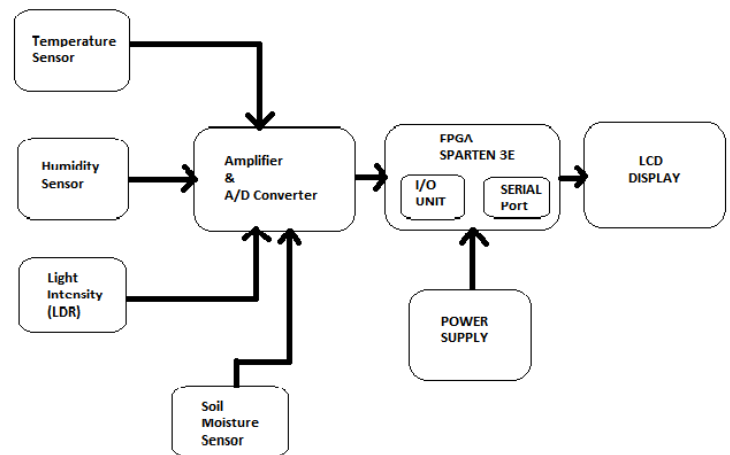
**Remarks:** More flexible humidity control regime was developed.

### 3. Controlling parameters

**Author:** J.C.Bakker

**Remark:** The regime is based on the response of crop processes that are affected by greenhouse atmospheric humidity.

## III. SYSTEM ARCHITECTURE



## VLSI Description:

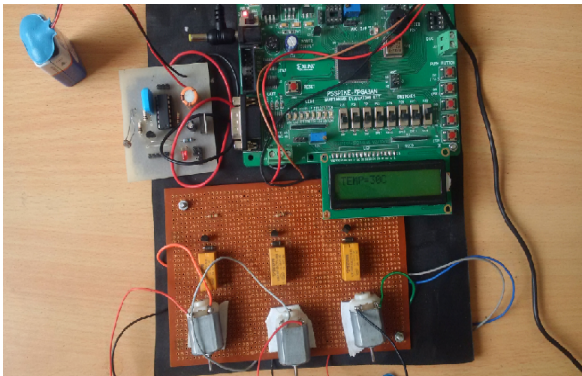
Hardware Description Language (VHDL 87) is adopted as a standard by the Institute of Electrical and Electronic Engineers.

VHDL is designed to fill a number of needs in the design process such as:

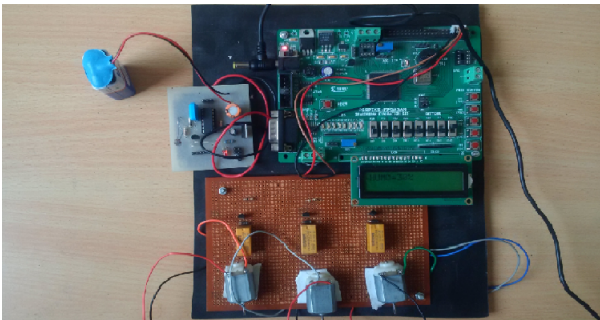
1. The description of the structure of a design that is how it is decomposed into sub designs, and how this sub designs are interconnected.
2. The specification of the function of the designs using familiar programming language forms.
3. The simulation before being manufactured, so that designers can quickly compare alternatives and test for correctness without the delay and expense of hardware prototyping.
4. The synthesis, the VHDL is used as a high level entry for several FPGA and ASIC synthesis tools.
5. The reuse of existing models for new designs.

**Sensors:**

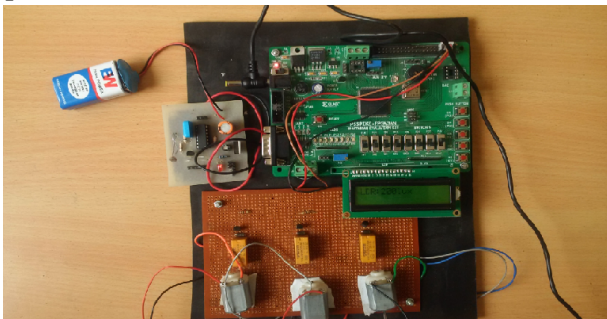
The sensors used to detect the parameters are humidity sensor to control or detect the humidity, LM35 sensor to control or detect the temperature, LDR to control or detect the light intensity

**IV. RESULT****Step 1:**

Here we are measuring the temperature

**Step 2:**

Here in the result the humidity in the atmosphere is measure.

**Step 3:**

The light intensity is measured using light sensor.

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**VI. CONCLUSION:**

The greenhouse automation at commercial level is experiencing attention. Also, to achieve competitiveness in the market, the production costs must be kept as low as possible. Low cost automation can be achieved by using VLSI systems so that all category farmers can afford it.

The objective of this project was to develop a system to provide autonomous control for temperature and humidity in a closed environment of Greenhouse, which is fulfilled

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