

An Elegant Home with Security, Safety, Remote Control & Auto Control of Water Tank Motor Code

K.Ayyanna¹, K.Karthik Babu² and P.Govardhani Anisha³

¹ECE, Brindavan Institute of technology and science
Kurnool, 518003, India

²ECE, Brindavan Institute of technology and science
Kurnool, 518003, India

³ECE, Brindavan Institute of technology and science
Kurnool, 518003, India

Abstract:

Firstly there is no system to track the water in the tank. Then there come a secondary problem that is when their water pump is started they have no idea when it gets filled up and sometimes there are situation where the pump keeps on pumping water to the tank and the water starts spilling out from the tank. There is wastage of energy as well as wastage of water .Initially the water starts to get pumped from your underground reservoir or from your underground water supply from the pipes to your water tank. So whenever the water starts to get filled in the tank it is in empty state and when the water level in the tank starts to rise up, it has to show the tank level is almost empty .like it has to show half of the tank is filled and almost tank is full conditions also to alert the user. Finally when it reaches to its top the indicator has to be indicated the water level in the tank is full. So by this project one can be alerted that the tank has been filled up .so by this project we have a chance to saving the electricity bill as well as over flow of water from the tank trough Verilog, ISE simulator.

Keywords: *Xilinx, Ise simulator, Verilog*

1. Introduction

A home appliance control system (HACS) is a system which provides various services to remotely operate on home appliances, such as microwave

oven, TV, and garage door etc through remote devices such as mobile phone, desktop and palm-top.

The main importance of this discussion is to present the SOC design through which the area and cost of the design will be drastically reduced. This SOC design consists of home appliance control system (HACS), water level indication and security of the devices. The Home appliance control system is controlled either by a cell phone or a by palm top or by a PC or by a remote. They are connected either through wireless application protocol (WAP), the Internet, or intranet. It controls various appliances such as a microwave, TV, fans, motors, lights etc. The HACS system receives commands from remote devices that are manipulated by user. The system in turn dispatch commands to respective appliances that will perform the actions. HACS is responsible for keeping track of the states of the devices.

The following picture gives an overview of how this system is going to work.

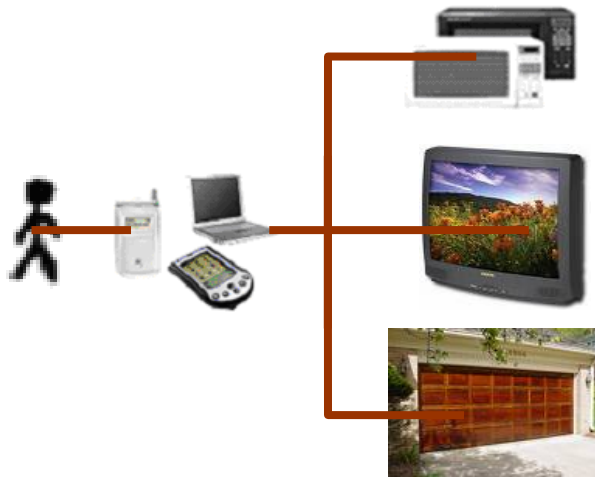


Fig: overview of HACS

The system administrator of the HACS system has the ability to add a new appliance or delete an existing one. The system administrator has the ability to add a new remote device and configure it with HACS or delete an existing one when it is not used. This paper also discuss about the safety of the devices by providing security by ringing the corresponding alarm. This paper also discuss about the water level indication for reduce the wastage of resources.

2. Functional Requirement

A home appliance control system (HACS) is a system which is controlled by a remote system and controls home appliances such as air conditioner, microwave oven, garage doors, TV set, VCR, audio controller, indoor/outdoor lights, water sprinkler, home security system, bath tub controller, etc.

Note that the HACS needs mechanisms for adapting to different needs of the user as well. For example, when the user is very hungry, the microwave oven may need to respond to the user's request that it operate maximally to cook the food as

fast as it can. For another example, if the user is hungry, tired and may come home late, then the system may be asked to fully cook the meal by the expected arrival time, and periodic warming up every 10 minutes afterwards.

Initially the water starts to get pumped from your underground reservoir or from your underground water supply from the pipes to your water tank. So whenever the water starts to get filled in the tank it is in empty state and when the water level in the tank starts to rise up, it has to show the tank level is almost empty .like it has to show half of the tank is filled and almost tank is full conditions also to alert the user. Finally when it reaches to its top the indicator has to be indicated the water level in the tank is full. So by this project one can be alerted that the tank has been filled up .so by this project we have a chance to saving the electricity bill as well as over flow of water from the tank.



Sample water level indicator

Water Level Indicator Project aims at designing a water level indicator. A coding is designed in such a way that it indicates the level of water in the tank and gives an indication when it is full.

In the water level controller water is first stored in an underground tank (UGT) and from there it is pumped up to the over head tank located on the roof. People generally switch on the pump when their taps go dry and switch off the pump when the over head tank starts overflowing. This results in the unnecessary wastage and sometimes non-availability of water in the case of emergency. The simple circuit presented here makes this system automatic, i.e. it switches on the pump when the water level in the over head tank goes low and switches it off as soon as the water level the water level in the overhead tank goes low and switches it off as soon as the water level reaches a pre-determined level. It also prevents 'dry run' of the pump in case the level in the underground tank goes below the suction level. In the vlsi, the signals are connecting the underground tank and the overhead tank and other levels also through the system chip. When there is enough water in the tank it shows in the corresponding level.

Application:

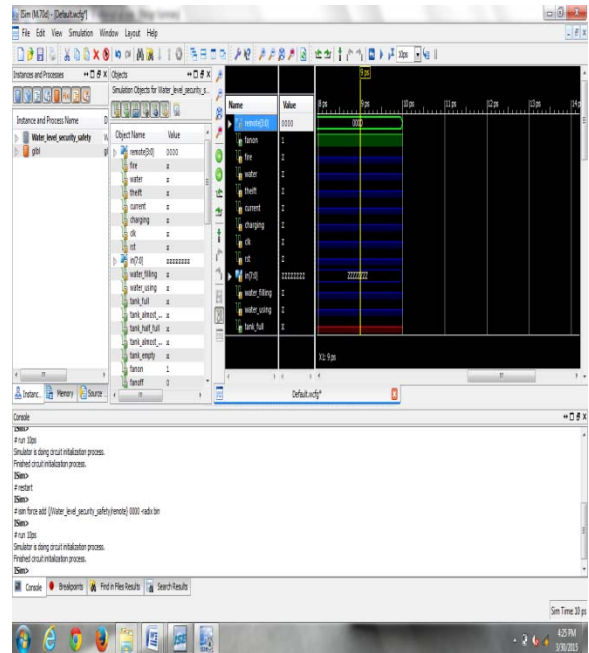
Water level indicators are used to monitor water levels in standpipes and wells.

Advantages:

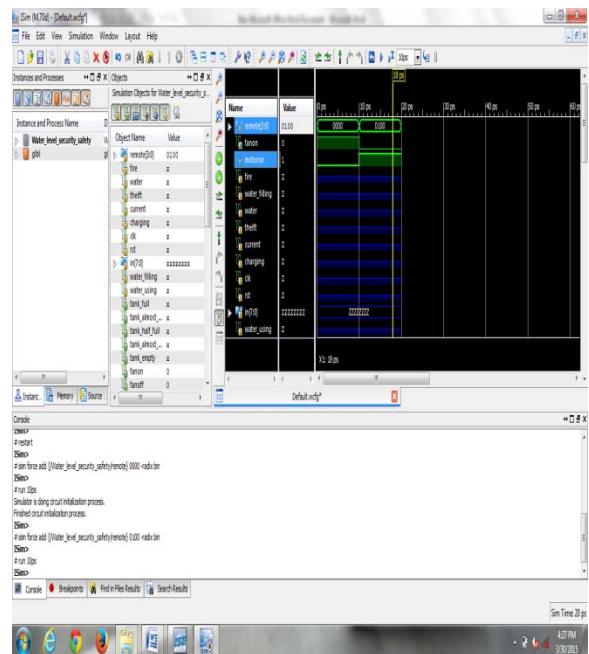
- No need to go on the roof to look the water level.
- It shows the water level in your room like 1/4 tank, 1/2 tank, 3/4 tank and full tank.
- Alarm starts ringing as soon as tank becomes full.

Suitable for every tank

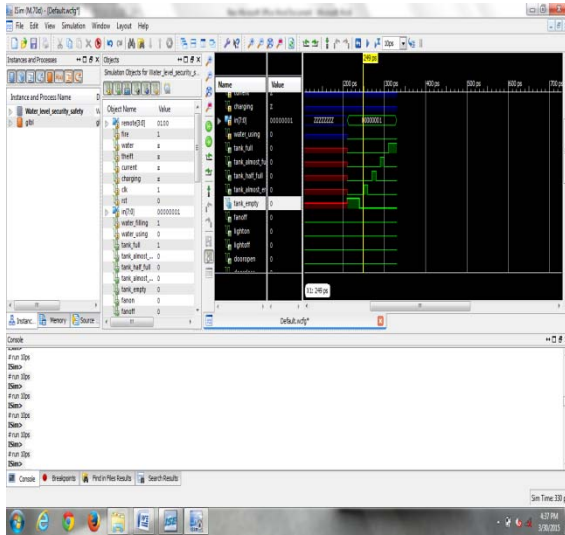
. Results and wave forms:



When the remote input is 4'd0 then the 1st mode is turned on and the given operation is performed .In this given circuit the fan is in on state

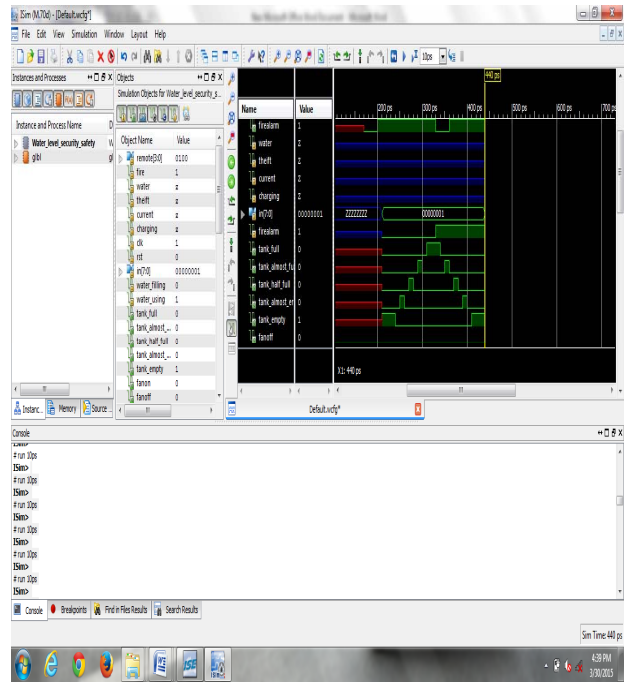


When the remote input is 4'd4 then the 1st mode is turned on and the given operation is performed .In this given circuit the motor is in on state in this manner we can operate all the home appliances.



The above waveform discuss about the security. The fire alarm will be ON if the fire sensor senses the corresponding value which will be under the control of user. When we considered about the fire when the clk after three cycles then the fire alarm is on and gives an indication that there is a danger a head

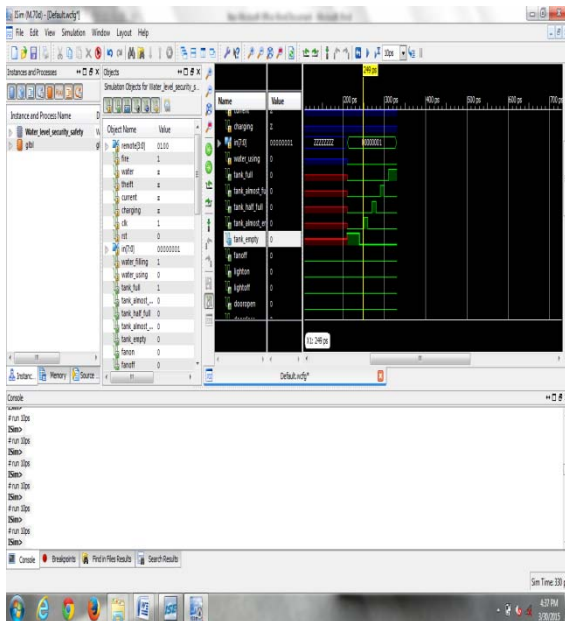
tank is in empty state . Whenever the water is start to fill then the tank shows the corresponding.



water levels like almost empty , half full, almost full and full states which will be shown in the above waveform.

CONCLUSION:

In This project we implemented a soc design which consists of home appliance control system, security of devices and water level indicator. The Home appliance control system is controlled either by a cell phone or a by palm top or by a PC. They are connected either through wireless application protocol (WAP), the Internet, or intranet. It controls various appliances such as a microwave, TV etc. The HACS system receives commands from remote devices that are manipulated by user. The system in turn dispatch commands to respective appliances that will perform the actions. HACS is responsible for keeping track of the states of the devices. This is



Whenever the water tank is empty, the water is filling and the water is filling it automatically shows e position of the water filling and Initially the water

successfully verified through Xilinx using Verilog HDL language, this provided better results. The main advantage of this project is to reduce cost and area as all the operation are performed by a single chip and we don't need huge circuitry.

7.2 FUTURE SCOPE

In future there is a scope for operating each every device. This can also be implemented on system Verilog where simulation is faster than the Verilog HDL .This seems to greater purpose and advantageous in the upcoming future

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AUTHOR'S BIOGRAPHY:

- **K.Ayyanna** completed his Master's Degree in Telematics & Signal Processing from National Institute of Technology Rourkela and presently working as an Assistant Professor in Brindavan Institute of Technology & Science, Kurnool A.P. His areas of interests are Signal Processing, Image Processing and Communication systems.
- **K.Karthik Babu** pursuing Bachelor's Degree in Electronics & Communication Engineering from Brindavan Institute of Tech. & Science, Kurnool A.P.
- **P.Govardhani Anisha** pursuing Bachelor's Degree in Electronics & Communication Engineering from Brindavan Institute of Tech. & Science, Kurnool A.P.