FINAL YEAR PROJECT REPORT

AUTOMATION OF BOILER USING PLC AND MICROCONTROLLER

Submitted by:

Muhammad Abuzar	**101519-054**
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DEPARTMENT OF ELECTRICAL ENGINEERING

SCHOOL OF ENGINEERING

UNIVERSITY OF MANAGEMEND AND TECHNOLOGY

September, 2014

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A PROJECT REPORT

Submitted by:

Muhammad Abuzar	**101519-054**
Muhammad Shoaib	**101519-079**
Tahir Saleem	**101519-137**

in partial fulfillment of the requirements for the award of degree of

BACHELOR OF SCIENCE

IN

ELECTRICAL ENGINEERING

DEPARTMENT OF ELECTRICAL ENGINEERING

SCHOOL OF ENGINEERING

September, 2014

Declaration

We declare that this project report was composed without plagiarism and all the work contained here is our own basic theory that we studied from literature and learnt by our experiences, we adapted it in our own words with references and this work has not been submitted for any other degree or professional qualification

APPROVED

Project Advisor _____ **Director Projects** _____

Members

Muhammad Abuzar _____

Muhammad Shoaib _____

Tahir Saleem _____

University of Management & Technology
School of Engineering
Department of Electrical Engineering

Senior Year Project- I Evaluation

Project ID 34 Date 14/03/2014

Project Title: Boiler Automation using PLC with the help of scada.

Particulars of the Students

Code	ID	Name	Semester in which Registered	Contact Number
A	101519-054	MUHAMMAD ABUZAR		0334-4040226
B	101519-079	MUHAMMAD SHOAIB		0345-7241242
C	101519-137	TAHIR SALEEM		0333-4484924
D				

S.No	Topic	Max Marks	Obtained Marks
1	Problem Statement	10	6
2	Objective/Scope	10	7
3	Methodology	10	7
4	Scope of the Project/Utilization	10	7
5	Literature Review/Data collection	10	5
6	Design and Analysis	10	6
7	Expected Output/Outcome/Final Deliverable	10	7
8	Conclusion and Recommendation	10	6
9	FYP-1 Documentation	20	12

303 X 20 / 400 = 15.15

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Suggested Changes	Power Generation Companies 2 Outputs ? C#? Csharp → Parameters must be task oriented. → keypad controlled interface must be available instead of control room monitoring. (use of SCADA) → Give a complete prototype design for evaluation.

Name: MUHAMMAD HARIS Role: (adviser/member) Signature: M. HARIS 14/3/14

GANTT CHART

TASK	WEEK																								
	11/1	11/8	11/15	11/22	11/29	12/6	12/12	12/13	12/18	12/19	12/23	12/24	12/28	12/29	1/2	1/6	1/7	1/10	1/11	1/14	1/15	1/15	1/15	1/15	1/15
Project Idea																									
Decide Topics of interest																									
Literature Review of SCADA / PLC																									
Use and understanding of different software																									
Prototype implementation Decision																									
Programming learning PLC/SCADA																									
Sensor Data Collecting And Learning																									
Study of hardware implementation Techniques																									
Prepare FYP 1 presentation																									
FYP1 progress Report																									

GANTT CHART

TASK	WEEK																									
	1/25	2/3	2/9	2/15	2/23	2/28	3/5	3/11	3/17	3/22	3/28	4/4	4/9	4/15	4/21	4/29	5/6	5/11	5/18	5/25	5/1	5/7	5/14	5/21	5/25	5/29
Revision of hardware implementation techniques																										
Decide Project Proceedings																										
Application of PLC/SCADA																										
Selection of Sensors and Components																										
PLC Code Testing and Simulation																										
Interfacing of different Sensors with PLC																										
Implementation of Hardware																										
Code implementation on hardware																										
Initial testing of hardware																										
Troubles shooting																										
Final Testing																										
Preparation of the draft report																										
FYP2 presentation preparation																										
Project Exhibition																										
Final Report preparation																										

Thesis Similarity Report

Turnitin Originality Report

for plaigairism by M.abuzar Tasgheer

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Dedication

Dedicated to our loving parents and teachers whose prayers, inspiring guidance and constant encouragement brightened our career.

Acknowledgement

All praises are to almighty Allah, The lord of the entire world. It is undeniable that all manifestation of nature bears eloquent testimony to the fact that Allah is the creator, maintainer and regulator of the world. He makes laws foe the evaluation of things and sets them on the path of perfection.

Almighty Allah bestows and blesses knowledge, technology and scientific ingenuity to man through experimental research and remarkable deduction to ponder over the force of nature. the first place therefore, we express our utmost thanks to Almighty Allah, the Omni Parents, omnipotent and creator of the worlds, who has endowed us brain and instable instinct construction of knowledge and body to accomplish our work in the form of thesis(final project report).

No doubt, appreciation is prior to knowledge-ment, quality of the latter is superior to the essence of the former.

We offer our gratitude to last prophet Muhammad (PBUH) who has given the lesson of love, humanity, parity and justice. He also broke the cage of servitude for golden sayings to see knowledge his obligator for every Muslim.

We have honed my skills through the discussion with my erstwhile teachers and colleagues at School of Engineering, University of Management and Technology Lahore. We are thankful to Director of Sardar Medical Complex for helping us in choosing our final year Project.

Our thankful acknowledge is due to Prof. Coll Khan Nazir director of project for their kind cooperation and guidance in compilation of this work. We are greatly thankful to Mr. Muhammad Arif Saeed sahib and Mr. Muhammad Saleem Sahib who helps us in our experimental work and completion of our thesis. We thank them for their involvement.

At the end special thanks goes to Miss Saima Shaheen for his kind cooperation, guidance and supervision in compilation of this work. We owe a lot to all of them.

(Authors)

Abstract

Designing of a PLC and microcontroller based controlled autoclave which consist of boiler with keypad interfacing involves automated operation for the production of steam. Our designed autoclave system monitors temperature, pressure and water level via different sensor's which provides input to Micro controller and PLC. PLC and Micro controller controls the boiler temperature, pressure and water level and gives out the user required values. Temperature and pressure variations are shown on LCD and user set different functions of autoclave for different surgeries such as general surgery, Ortho, heart and brain surgery, so the parameters temperature and pressure for sterilization of medical instruments sets according to the sterilization quality.

We have used safety and other check valves for safety measures.Safety valve works automatically to release pressure in case of emergency. Our design is so compact it can work automatically as well as manually.

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