

# MILITARY INSTITUTE OF SCIENCE AND TECHNOLOGY

INTEGRATED DESIGN PROJECT-01 (CSE-460)

PROJECT PROPOSAL

---

## Automatic Laundry System

---

***Group: 05***

Fardin Momtaj-201614012

Umair Sifat-201614015

Imtiaz Ahmed-201614030

S M Arif Ahmed-201514042

Farhan Saif Chowdhury-201414077

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

# MILITARY INSTITUTE OF SCIENCE AND TECHNOLOGY

## Department of Computer Science and Engineering

### Idea Proposal of IDP

---

---

This is an application form for the approval of Idea proposal of IDP by the Course Teachers. All the criteria which are applicable from the following list must be mentioned and filled in properly.

**Date:** 12MAR2019

**1. Group No.:** 05

**2. Section:** A

**Session:** 2015-16

**3. Program:** CSE-16

**4. Tentative Title:** AUTOMATIC LAUNDRY SYSTEM

**5. Background and Present State of the Problem:**

- **Background and Problem:** In a civilized society everyone wants to look attractive. As a part of attractive appearance one of the most important thing is our cloth. Sometimes our cloths gets wrinkle in it. The solution for removing wrinkle from the cloth is ironing. After ironing we have to keep our cloths in a proper manner unless the cloth will get wrinkle in it again. The solution for keeping cloths in a proper manner is a perfect folding and packaging. Now a days we get this kinds of solution from laundry which is done manually. Each step is done manually by a human being which is obviously a time consuming task as well as costly.

- **Present Solutions:** In work [4] it is a design of an automatic ironing machine. It uses an innovative framework and motorized mechanism to effectively iron various clothes by minimizing the difficulties in the task of ironing. The movement of the iron is based upon chain and sprocket governed by motors. [1], [2], [3] .

In work [5] it is an automated folding machine which can fold shirt in a proper manner. It had been done by moving the stepper motor in a different angle to fold the shirt.

- **Proposal:** The idea of automatic laundry system is to make an integrated system of ironing, folding and packaging. In this system we will consider this parts as a one complete machine which will automatically do ironing, folding and packaging. There will also include a vending mechanism system along with a mobile application. A conveyor belt will be used to pass cloth from a section to another section. User can control the payment system from the mobile application as well as a database will also be maintained.

- **Comparison:** Presents solutions are individual system to do each task of ironing, folding and packaging. They are not integrated as complete system. In automatic laundry system we will make an integrated system which will automatically do ironing, folding and packaging. Our proposed system will also include the vending mechanism and payment system which doesn't include in the present system. Present systems doesn't maintain any application or database which our system maintains. Database will be maintained to store the user and their task information. Mobile application will be used to operate the system from the user side.

## 6. Objectives with Specific Aims and Possible Outcome:

- Make the laundry system automatic integrated with ironing, folding and packaging.
- Reduce the time it takes to do the task manually by human being.
- Design a cost effective way to do this automatic system.

## 7. Outline of Methodology/Experimental Design:

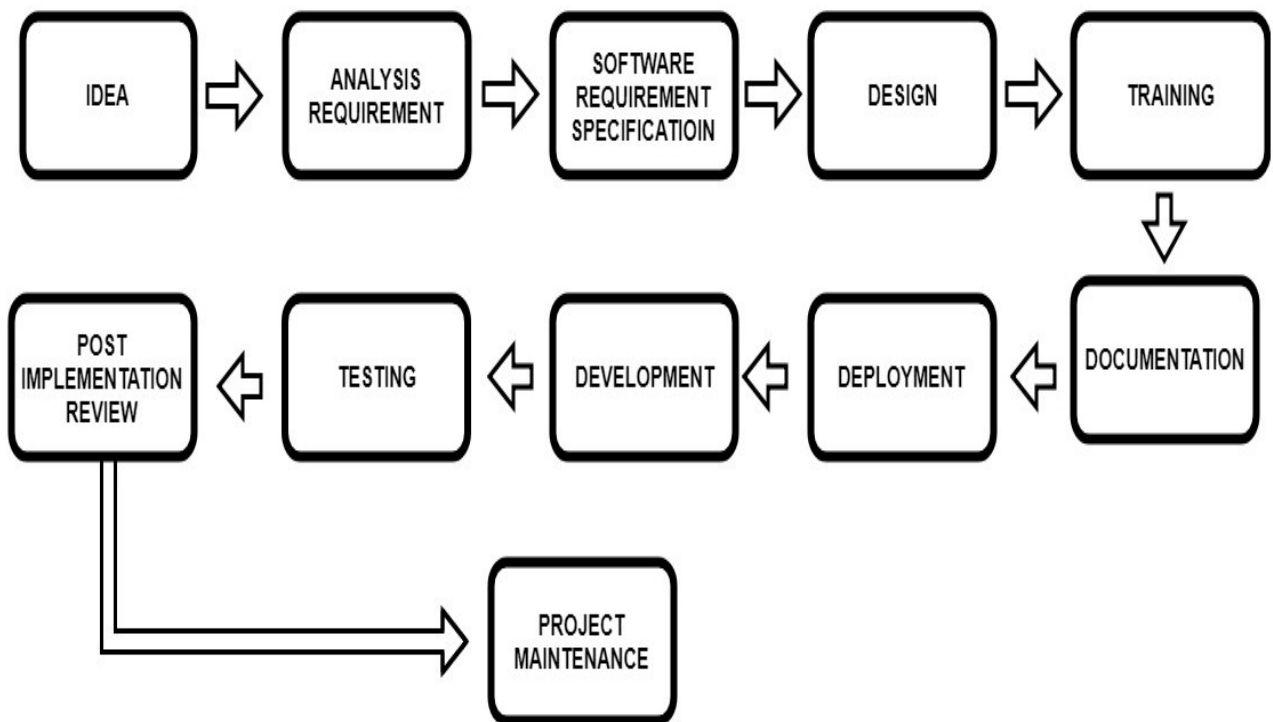


Figure 1: Methodology

## 8. Domain Covered for this project:

<input type="checkbox"/> Theoretical CS and Algorithms	<input type="checkbox"/> Information Security
<input checked="" type="checkbox"/> Networking	<input type="checkbox"/> Computer Vision
<input checked="" type="checkbox"/> Database and Data Mining	<input type="checkbox"/> Pattern Recognition
<input type="checkbox"/> Cloud Computing and Big Data	<input checked="" type="checkbox"/> Internet of Things (IoT)y
<input checked="" type="checkbox"/> AI and Robotics	<input type="checkbox"/> Human Computer Interactions (HCI)
<input checked="" type="checkbox"/> Software Engineering	

## 9. References:

[1] B. Arango, P. K. Soori, and P. Talukder. Stepper motor drives for robotic applications. In *2012 IEEE International Power Engineering and Optimization Conference Melaka, Malaysia*, pages 361366, June 2012.

[2] Z. Benhua, L. Chenghua, S. Shiming, and G. Lu. Design on a unipolar and unidirectional stepper motor circuit. In *Proceedings of 2011 International Conference on Electronic Mechanical Engineering and Information Technology*, volume 4, pages 17951797, Aug 2011.

[3] S. Katipamula. Control strategies of thermostatically controlled appliances in a competitive electricity market. In *IEEE Power Engineering Society General Meeting, 2005*, pages 202207 Vol. 1, June 2005.

[4] Aman Kaushik, Aakash Mishra, Harsh Singh, and B.Hemalatha . Automating machine. *Asian Academic Research of Multidisciplinary*, 1:268, 05 2014.

[5] Ahmed, I. and Zim, F. (2018). 2. <https://www.facebook.com/eimtiazh/videos/vb.100002171236> [video]

## 10. Cost Estimate:

	Serial No	Item	Cost(Taka)
<b>H A R D W A R E</b>	1	LED Screen	1000
	2	Pneumatic Cylinder(5)	10000
	3	Camera Module	1500
	4	Solenoid Valve(5)	3000
	5	Solenoid Valve Base	2000
	6	Air Compressor	5300
	7	Air Compressor Oil	200
	8	Pipe(75 feet)	1125
	9	Filter(5)	400
	10	Nipple(24)	1200
	11	Bearing(5)	1250
	12	Rod Frame	6000
	13	Nut	500
	14	Wooden Frame	800
	15	Bucket	350
	16	Heater(2)	500
	17	PVC Board	1000
	18	Raspberry Pi	4000
	19	Arduino Mega 2560	750

	Serial No	Item	Cost(Taka)
	20	Gear Motor(2)	700
	21	Metal Gear Motor	100
	22	Gear Motor Driver	300
	23	Conveyor Belt	500
	24	Relay	350
		<b>Total</b>	<b>42825</b>

**Signature of the group members:**

Serial No	Student ID	Name	Email	Signature
01.	201614012	Fardin Momtaj	fardinjim7@gmail.com	
02.	201614015	Umair Sifat	sifatumair10@gmail.com	
03.	201614030	Imtiaz Ahmed	emonmist20@gmail.com	
04.	201514042	S M Arif Ahmed	attano.arif@gmail.com	
05.	201414077	Farhan Saif Chowdhury	farhansaif20@gmail.com	

---

Signature Of the Course teacher  
(Hardware)

---

Signature Of the Course teacher  
(Software)