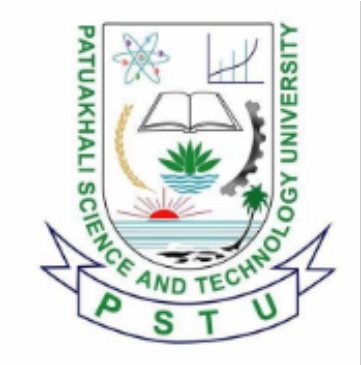

Patuakhali Science and Technology University

Faculty of Computer Science and Engineering

CCE 322 :: Computer Peripheral and Interfacing Sessional

Project Proposal

Project Title : Farm Droid
Submission Date : 21 January 2026

Submitted by,

1. **2102003** - Md. Abu Taher
2. **2102007** - Mehedi Hasan
3. **2102020** - Md. Sadman Kabir Bhuiyan
4. **2102024** - Md. Sharafat Karim
5. **2102051** - Md. Safiullah Farajy

Submitted to,

1. **Sarna Majumder**
   Associate Professor,
   Depart. of Computer and Communication Engineering,
   Patuakhali Science and Technology University.
2. **Prof. Dr. Md Samsuzzaman**
   Professor,
   Depart. of Computer and Communication Engineering,
   Patuakhali Science and Technology University.

Contents

Farm Droid

An Autonomous Agricultural Robot

1. Introduction

Blank

2. Objectives

Blank

- **Topic:** Something interestting
- Blank

3. Problem Statement

Blank

4. Scope

Blank

5. Methodology

5.1. System Architecture

Blank

5.2. Technology Stack

Blank

6. Hardware Components

Blank

7. Budget Estimation

The following is a detailed breakdown of the estimated costs for the hardware components required for the “Farm Droid” project.

7.1. Mandatory Components & Modules

Category	Component Name	Unit Price (BDT)	Qty	Total (BDT)
Controllers	Raspberry Pi 4 Model B (4GB)	14,100	1	14,100
	Arduino Uno R3	988	1	988
	ESP-32 Development Board	550	2	1,100
Motors & Drivers	Servo Motor MG995 (360 Deg)	770	8	6,160
	Servo Motor MG996R	390	2	780
	Servo Motor SG90 (Micro)	150	4	600
	PCA9685 16-Ch Servo Driver	447	2	894
Sensors	Ublox NEO-6M GPS Module	430	1	430
	VL53L0X Laser Ranging Sensor	450	2	900
	MPU-6050 Accelerometer/Gyro	219	1	219
	GY-521 6DOF MPU-6050	350	1	350
	ADXL345 Triple Axis Accelerometer	418	1	418
	AS5600 Magnetic Encoder	314	2	628
	FSR402 Pressure Sensor	678	2	1,356
	HC-SR04 Ultrasonic Sensor	99	1	99
	FC-51 IR Obstacle Sensor	45	3	135
	HC-SR501 PIR Motion Sensor	93	1	93
	OV7670 Camera Module	350	1	350
Power & Audio	Transformer 12V 3A	390	1	390
	Breadboard Power Supply	76	1	76
	3 Watt 8 Ohm Mini Speaker	250	1	250
	Electret Microphone	15	2	30
Mechanical & Misc	PVC Pipe	300	5	1,500
	Syringe	20	5	100
	Pipe (Small)	30	5	150
	Full-Size Breadboard	120	2	240
	Half-Size Breadboard	75	2	150
	Jumper Wires (Male-Male)	100	4	400
	USB Cable (Arduino)	150	2	300
	3D Printer Strong Spring	49	2	98
	Screws / Hardware	100	10	1,000
	Magnet	50	1	50
	Copper Wire (26 SWG)	110	2	220
Tools	Digital Scale (10kg)	259	1	259

	Hex Saw	15	1	15
			Grand Total Estimated Cost	**33,028 BDT**

Table 1: Detailed Budget Estimation

7.2. Optional Components & Modules

These components are optional additions for specific features like ...

Category	Component Name	Unit Price	Qty	Total
Sensors	Liquid pH Sensor (0-14 Value)	2,150	1	2,150
	Soil Moisture Sensor Dual Output	70	1	70
	Rain Drop Sensor	80	1	80
	DHT11 Temp & Humidity Sensor	120	2	240
Safety & Security	MQ-2 / MQ-135 Gas Sensor	139	2	278
	RC522 RFID Reader Kit	175	1	175
Rover Mode	Gear Motor with Wheel (Yellow)	155	4	620
			Optional Items Total	**3,613 BDT**

Table 2: Budget for Optional / Modular Components

7.3. Project Financial Summary

Mandatory Components Cost:	34,828 BDT
Optional Components Cost:	3,613 BDT
Grand Total Project Cost:	**38,441 BDT**

8. Work Plan (Timeline)

The development is divided into phases to ensure the complex mechanical and software systems work together.

Task	Month 1	Month 2	Month 3	Month 4
Mechanical Assembly (Chassis & Drive)	✓			
Circuit Integration & Power Dist.	✓	✓		
Locomotion & Motor Control		✓	✓	
Vision & GPS Integration			✓	✓
Arm Control & Final Testing				✓

Table 4: Gantt Chart for Farm Droid Development

9. Visual Models

9.1. Block Diagram

Blank

9.2. Flow Chart

Blank

10. Future Plans

Blank

11. Conclusion

Blank

The End