IUBAT-INTERNATIONAL UNIVERSITY OF BUSINESS AGRICULTURE AND TECHNOLOGY

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Innovation and Entrepreneurship Center

Application Form for Financial Support to Research Projects

Project Title: Automation Window System

Principal researcher:
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Duration of the Project: **1 year**

Total cost in Taka: **69,539 TK**

Has this project been submitted elsewhere for financial assistance?

Yes [   ]   No. [√   ]

1. **Outline of the Project**

    A. **Title of the project:** Automation Window System.

    B. **Introduction:**
        The automation window system is a sliding window technology that is working with an automation sensor without touching any switch. Actually, it worked with a microcontroller which is like artificial intelligence. A window can close or open automatically by this system.

    C. **Background and literature review**

Objectives:

1. To automatically protect the room from Rainfall and Storms without maintenance by humans.
2. To protect patients in hospitals from sudden weathering.
3. To protect commercial factories and mills from sudden weathering during operation time.

Methodology: This system is an Automation window system because it works automatically. In this system, there is a controller with some sensors and a motor driver. It works by some methods:

Suppose, suddenly rain is started, the sensors detect rain and send a signal to the controller then the window will close automatically, and the window remains closed until raining is stopped. When raining is stopped then the window will open and it remains open automatically.

Again when a storm comes suddenly with hi-speed airflow like 50+ km/hour, then the sensor will detect the airflow speed then it will send a signal to the controller unit then the window will automatically close, and the window remains closed until the storm is stopped. When the storm is gone then the window will remain open.

This process is worked by Sensor. The window will be automatically closed when it's evening, then the window will reopen the next morning, it usually depends on the sunlight and weather.

Also, if we want to feel rainwater or weather through the window and we want to remain open the window then we can prevent closing the window by pressing a manual button, and if we want to close the window in any situation then we can remain closed window manually by pressing a button also.

    D. **Expected outcome of the research:** At first, we made our prototype model of an automation window system with glass, plastic, and wood. We were able to run it successfully then we decided to go further.

        It will help us to improve our lifestyle quality during bad weather because this window will protect patients in hospitals from bad weather.

        I sincerely believe that this system will protect the room with important papers, and furniture in residential or commercial buildings from bad weather.

In the future, we will be able to make this method affordable and an important part of buildings.

I believe that in the future this system will accept schools, colleges, and university institutions.

2. Budget Summary in Taka:

Name of Components	Price	LINK
Arduino Nano (x2)	**1,500 TK**	**https://store.roboticsbd.com/arduino-bangladesh/926-arduino-nano-gravitech-us-ft232-original-robotics-bangladesh.html**
Wind Sensor (x1)	**7,566 TK**	**https://www.ubuy.com.bd/en/product/2F1FFJ9C-jeffergarden-pulse-signal-output-aluminum-alloyed-wind-speed-sensor-anemometer**
Rain Sensor (x2)	**200 TK**	**https://store.roboticsbd.com/sensors/665-humidity-detection-sensor-module-rain-detection-for-arduino.html**
Wind Direction Sensor (x1)	**8,675 TK**	**https://www.ubuy.com.bd/en/product/4WU7ROMUW-wind-sensor-garden-wind-direction-sensor-wind-vane-measuring-instrument-output-rs485**
Battery (x1)	**6,700 TK**	
Solenoid Lock (x2)	**1,960 TK**	**https://store.roboticsbd.com/solenoidlockactuator/1043-solenoid-electric-door-lock-dc12v-big-robotics-bangladesh.html**
Window gear mechanism	**8,000 TK**	
High torque motor (x2)	**4,400 TK**	**https://store.roboticsbd.com/motor/390--60-rpm-12-volt-dc-high-torque-gear-motor-robotics-bangladesh.html**
Light Dependent Module (x2)	**538 TK**	**https://www.daraz.com.bd/products/light-sensor-module-light-detection-intensity-sensor-broad-gl5528-photosensitive-module-for-arduino-i139040837.html**
Electronics	**10,000TK**	
Modified Window 5*5 feet for automation	**15,000 TK**	
MISC	**5,000TK**	
Total amount	**69,539 TK**	