PATUAKHALI SCIENCE AND TECHNOLOGY UNIVERSITY

COURSE CODE EEE-212

Electrical Technology Sessional

SUBMITTED TO:

Md. Naimur Rahman

Professor
Department of Electrical and Electronics Engineering
Faculty of Computer Science and Engineering

SUBMITTED BY:

Prosenjit Mondol
ID: **2102049**,
Registration No: **10176**
Faculty of Computer Science and Engineering

MD. Naimur Rahman Naiem
ID: **2102042**,
Registration No: **10169**
Faculty of Computer Science and Engineering

Date of submission: **11/21/2024**
Project title: **Smart vacuum cleaner robot**

Abstract

Nowadays, people are becoming more career oriented and due their irregular working schedule it becomes challenging to maintain both home, office and others working place together especially for women. Most of the cases, they hire the cleaners to clean the home, office etc., but no trust on cleaners. To overcome the problem, Smart Vacuum Cleaner has come up with the more advancement in technology and is designed to automate cleaning process. The application is used to initiate the robot. The navigation of the robot is according to the help of sensors it detects and avoids obstacles. To save the time of the people the smart vacuum cleaner helps to clean the surface of the floor without any human intervention.

List of Tools

No.	Tools
1	Arduino UNO x1
2	Gear motor x4
3	Robot wheel x4
4	L293D Motor Driver x1
5	Ultrasonic sensor x1
6	Li-ion battery x2
7	Li-ion battery holder x1
8	Jumper wires
9	Cock sheet x1
10	Switch x1
11.	Bottle
12.	Small Fan

Introduction:

In the modern era robots are playing an important role in life of mankind with their advance technologies, making the human life easier and comfortable. The cleaning robot are effective in assisting humans in floor cleaning applications at homes, hotels, restaurants, offices, hospitals, workshops, warehouses and universities etc. For example, the Smart vacuum cleaning is built based on obstacle avoidance with low cost. This work gives the design and development of smart vacuum floor cleaning robot. The robot can be used in domestic and industrial purpose for cleaning the floor periodically without human intervention.

Objectives:

The objectives of the project are as follows:
1. To automatically detect and avoid the obstacles.
2. To collect the dust particles into the vacuum.
3. To control the robot through application.
4. To reduce human effort.

CONCLUSION

The smart vacuum robot cleaner is fully operational that navigates according logic. It is operated to achieve cleaning of dry dust particles with more efficiency. Since robot is wireless device it can navigate to cover the large area. It also makes less human interaction which reduces the human work. The robot cleaner can be further upgrade with the functionalities such as to sense and detect as well as to move in the direction of dust which results in better cleaning of the home, office and other places. Nowadays smart vacuum robot cleaner used everywhere and easier, comfortable in our life.