American International University – Bangladesh
Faculty of Engineering
Department of EEE & CoE

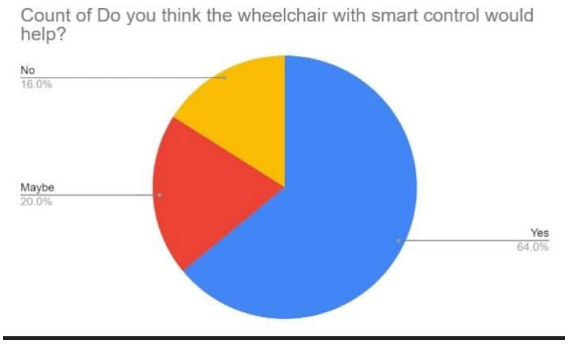
MICROPROCESSOR & EMBEDDED SYSTEM PROJECT PROPOSAL FORM

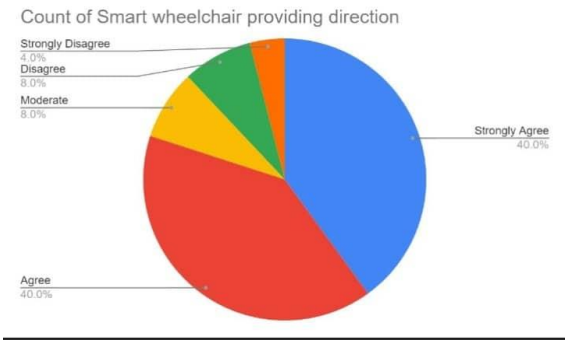
SEMESTER: Summer 2021-2022
PROJECT TITLE: 2 MARKS (must be an embedded system designed using Arduino/STM32/Raspberri Pi with other necessary sensors, actuators, components, etc. Both hardware implementation and simulation must be shown by the end of the semester. However, the proposal form should be submitted within the next two weeks from now on.)
Survey to develop process for complex engineering problems considering cultural and societal factors (use pie chart): 5 MARKS
GOALS AND BENEFITS OF PROJECT: 3 MARKS
EXPERIMENTAL BLOCK DIAGRAM: 3 MARKS
PROJECT TIMELINE (GANTT CHART): 5 MARKS
REFERENCES: (only published paper based references is allowed, don't use you-tube, Wikipedia, any random website for references): 2 marks

PROJECT TITLE: Smart hand gesture control wheelchair for disabled people

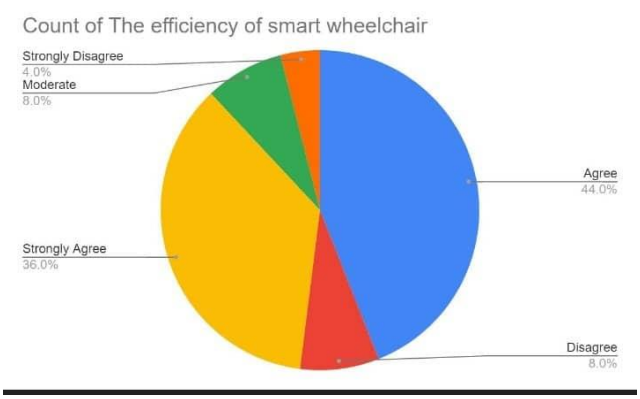
SURVEY REPORT:

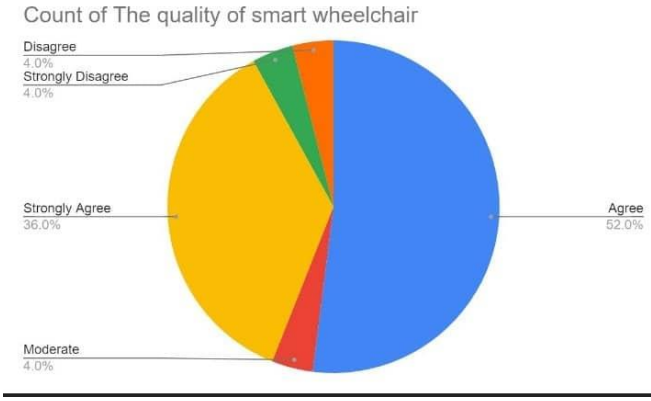
The survey collects quantitative data to measure the information. From the survey, It seems that most of the people are interested in Smart hand gesture control wheelchair. The proposed project is to increase the usability of a wheel chair and make it easier for users. The survey were collected from those people who are directly or indirectly connected with disabled people.



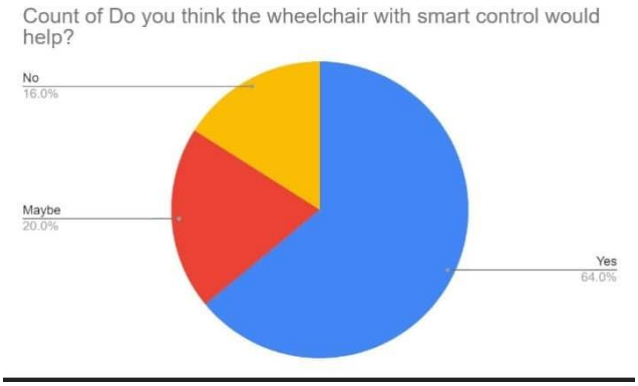


In case of reliability and user experience, most of the participants thought it as positive way. Rather than that, the Smart hand gesture control wheelchair may safe to use and the experience of it may user friendly.





Most of the participants think that the proposed project is more productive as it is less complex to use and its save the times who wants to give some space to disabled people. The implementation of the proposed project would help the disabled people to experience the smart environment in hospitalize services. It would also increase the productivity of a disabled people.



GOALS AND BENEFITS OF PROJECT:

Goals:

In hospitals, shops, hotels or homes, it is a major issue when there are physically disabled people. They need someone to take care of them. So, the purpose of the project is to make a smart wheel chair controlled by hand gesture and Accelerometer will be used sensor to help the physically disabled people. So that the use can move the wheel just by giving direction from the hand and can move himself from one place to another. This project focuses on building a smart wheelchair that can be controlled by the hand movement of the user using IoT technology. This wheelchair can move forward, right and left based on the command given to the system by the user. It is also needed to control the accessibility. Because, if the wheel chair is out of control, then there might be a serious accident and cause injuries. So, there need to develop a functionality also to prevent that problem. To solve that problem, there will be used sonar sensor. So that if the system is out of control of the user, it will stop automatically. To build the entire project DC motor, Arduino Nano, Wireless Transceiver Module, tracking sensor, Sonar sensor, Battery, Motor driver etc. will be used.

Benefits:

1. Traditional smart wheelchair's cost more than 85000 BDT which is a very big amount for this country where most of the people are not rich enough to effort this.
2. Physically disabled people will be more self-dependent.
3. User friendly as only hand movement is enough to control it.
4. If somehow it is out of control, it may prevent the clash. So, no injuries will happen.
5. The user would be self-independent and able to do their daily activities on their own.
6. By avoiding obstacles, users would be able to experience smooth and easy transportation.

EXPERIMENTAL BLOCK DIAGRAM:

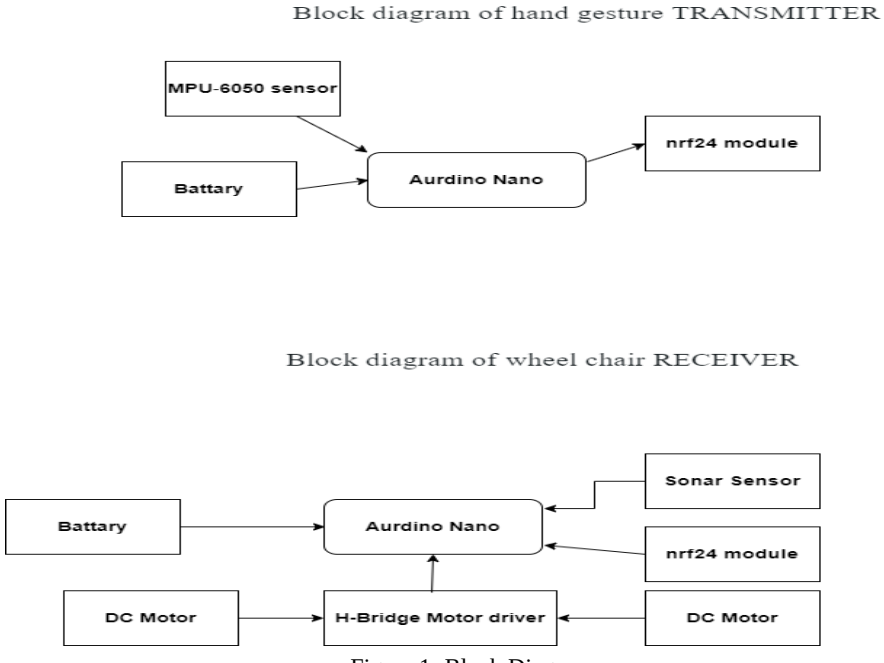


Figure 1: Block Diagram

PROJECT TIMELINE (GANTT CHART):

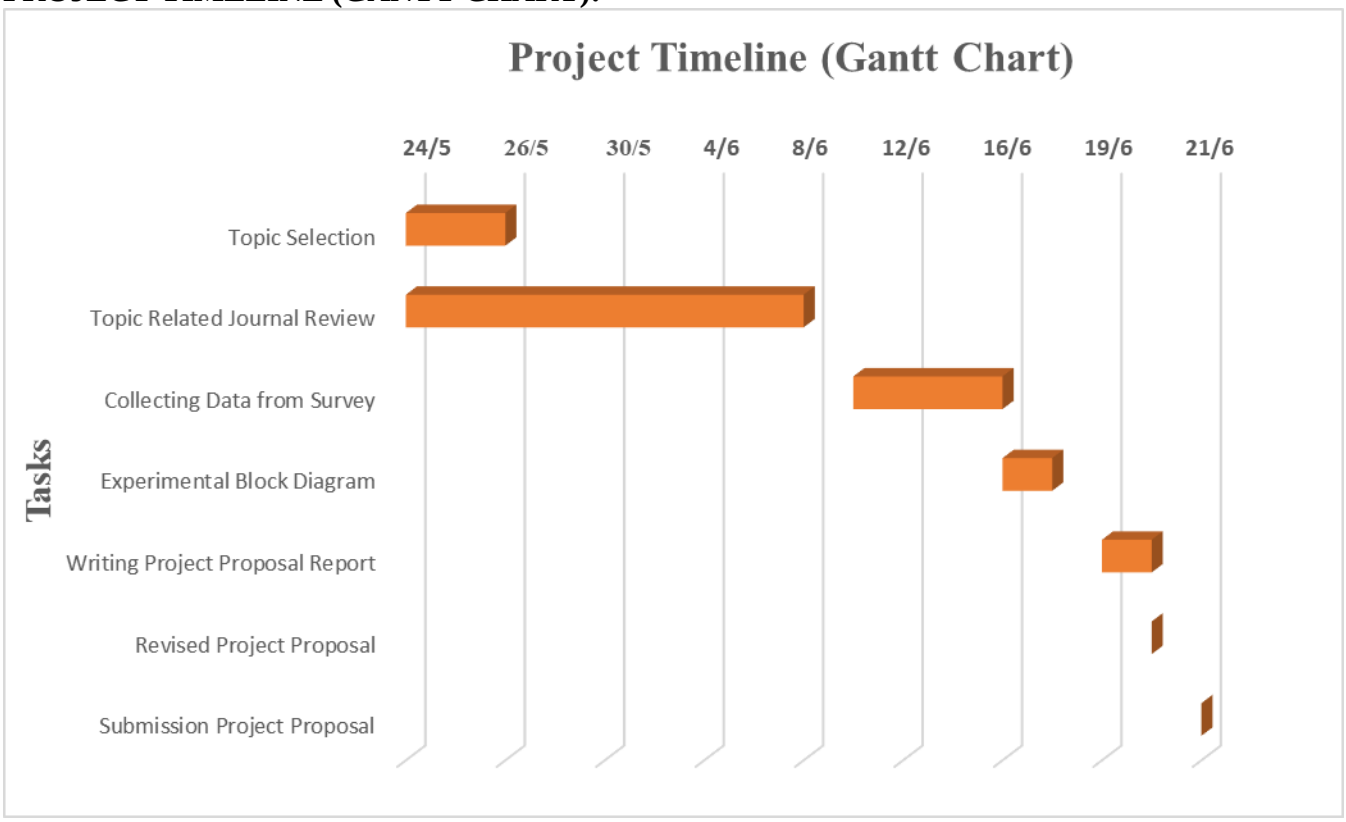


Figure 2: Project Timeline

REFERENCES:

[1]. Ardiana Sula, Evjola Spaho, Keita Matsuo, Leonard Barolli, Rozeta Miho, Fatos Xhafa, "An IoT-Based System for Supporting Children with Autism Spectrum Disorder", Eighth International Conference on Broadband and Wireless Computing, Communication and Applications, DOI: 10.1109/BWCCA.2013.51, Compiegne, France, October 2013.

[2]. S. Swapnali and P. Chilveri. Hand gesture recognition using accelerometer sensor for traffic light control system. IEEE, 2014.

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COMMENTS BY COURSE TEACHER:

COURSE TEACHER'S NAME **COURSE TEACHER'S SIGNATURE** **DATE**

GROUP MEMBERS

(Maximum 6 students are permitted to carry out a single Project. However, depending on the capability of the students, 4 students may be allowed but not less than that)

NAME: MD SAJJADUL ISLAM JUEL **ID**: 20-42576-1 **PROGRAM:** CSE **EMAIL: sajjadulislamjuel@gmail.com**	**NAME**: MD. AL- AMIN HOSSEN **ID**: 19-39535-1 **PROGRAM:** CSE **EMAIL: aamin.hossen99@gmail.com**
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NAME: RAHUL DAS **ID**: 19-40241-1 **PROGRAM:** CSE **EMAIL: kanonrahul303@gmail.com**	**NAME**: JAHADUL ISLAM RAJU **ID**: 16-32909-3 **PROGRAM:** CSE **EMAIL: jahidulislam9233@gmail.com**
REMARKS (for OFFICE use only)	

Assessment Rubrics

Course Name:	Microprocessor and Embedded System	**Course Code:**	EEE 4103
Semester:	Summer 2021-2022	**Sec:**	M
Faculty Member:	Prof. Dr. Engr. Muhibul Haque Bhuyan		

Capstone Project Title:	Smart hand gesture control wheelchair for disabled people
Project Group No.	01

	Student ID:	Student Name:
1.	**20-42576-1**	**Md Sajjadul Islam Juel**
2.	**19-41444-3**	**AFRIDA KHANOM**
3.	**19-40241-1**	**RAHUL DAS**
4.	**19-39535-1**	**MD. AL- AMIN HOSSEN**
5.	**18-36091-1**	**MD. ASHIF MAHMUD MOON**
6.	**16-32909-3**	**JAHADUL ISLAM RAJU**

Assessment Materials and Marks Allocation:

COs	Assessment Materials	POIs	Marks
CO3	Proposal form	P.c.2.C4	5

COs-POIs	Excellent [5]	Proficient [4]	Good [3]	Acceptable [2]	Unacceptable [1]	No Response [0]	Secured Marks
CO3 P.c.2.C4	The survey developed as a process for complex engineering problems considering cultural and societal factors has superior variables, targets, measures, and implementation process is clear and challenging for future project implementation.	The survey developed as a process for complex engineering problems considering cultural and societal factors has good variables, targets, measures, and implementation process is clear and challenging for future project implementation.	The survey developed as a process for complex engineering problems considering cultural and societal factors has moderate variables, targets, measures, and implementation process is clear and challenging for future project implementation.	The survey developed as a process for complex engineering problems considering cultural and societal factors has good variables, targets, measures, and implementation process is somewhat clear for future project implementation.	The survey developed as a process for complex engineering problems considering cultural and societal factors has poor variables, targets, measures, and implementation process is very unclear for future project implementation.	No Response	
Comments						**Total marks (5)**	