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From: C.C

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Summary

The abstract and introduction were written and revised. All team members did their own work. ABCbot design is finished.

What C.C completed this week:

- Studied how to write the methodology of the paper [1]
- Wrote the first sentence of the abstract
- Studied GPS module [2], [3], [4], [5], [6]
- Designed the body shape of the ABCbot
- Studied ROS on Multiple Computers [7]
- Studied MQTT [8] and CoAP [9]
- Wrote the readme file
- Designed the broom and decided the spinning speed
- Tested the compass sensor

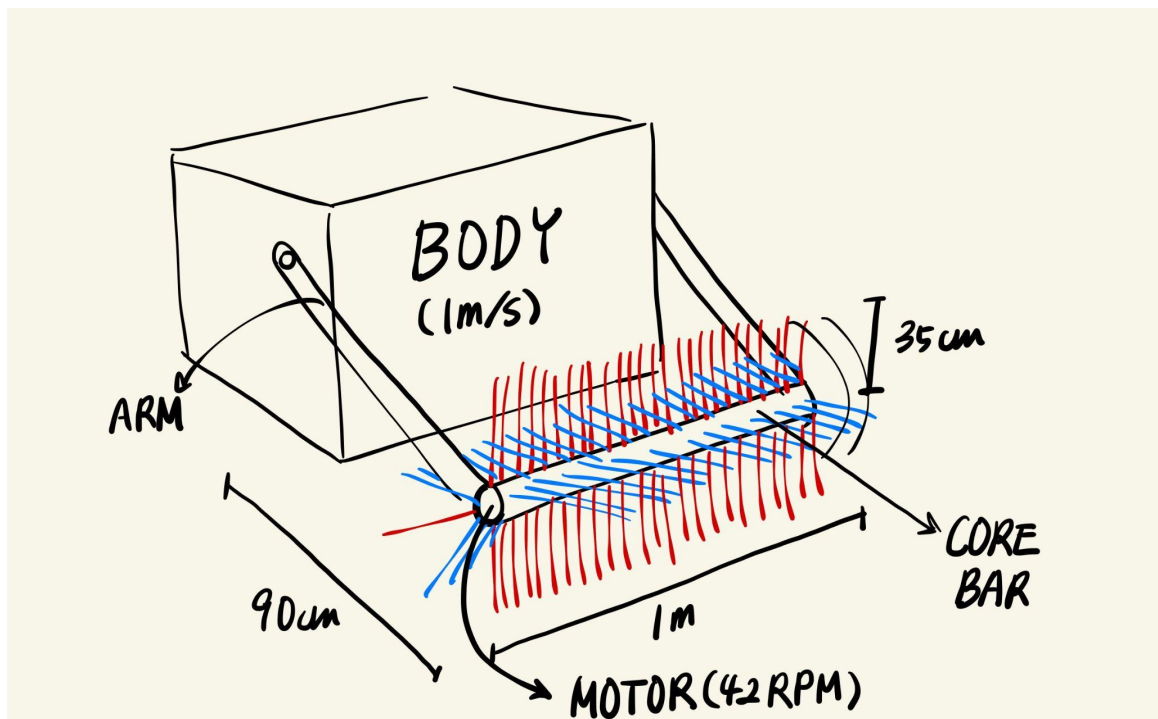


Fig. 1. A design of the broom

Things to do by next week

- Will make a prototype of the broom with professor Eric
- A physical team is going to build a navigating system using GPS.
- A network team is going to keep studying ROS.

Problems or challenges:

- Raspberry Pi 4B SD card didn't work well so it has been formatted.
- Didn't consider the speed difference from the middle to the end for the broomstick, decided the wrong speed of sweeping the floor

References

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- [4] R. Dopieralski. *Adafruit BNO055 Library* (2017). Accessed: Oct. 13, 2022. [Online]. Available: <https://docs.circuitpython.org/projects/bno055/en/latest/examples.html>
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- [6] D. Hertz. *How to read GPS data with Python on a Raspberry Pi*. (2020). Accessed: Oct. 13, 2022. [Online]. Available: <https://maker.pro/raspberry-pi/tutorial/how-to-read-gps-data-with-python-on-a-raspberry-pi>
- [7] "Running ROS across multiple machines." ROS.org. <https://wiki.ros.org/ROS/Tutorials/MultipleMachines> (accessed Oct. 13, 2022).
- [8] G. C. Hillar, "Hands-On MQTT Programming with Python: Work with the lightweight IoT protocol in Python," UK: Packt, 2018, pp. 1-228.
- [9] ARM, Constrained Application Protocol (CoAP) Tutorial. (May. 9, 2014). Accessed: Oct. 4, 2022. [Online Video]. Available: https://www.youtube.com/watch?v=4bSr5x5gKvA&ab_channel=Arm%C2%AE