



MIDDLE EAST TECHNICAL
UNIVERSITY

ELECTRICAL & ELECTRONICS ENGINEERING
WEEKLY REPORT 4
EE 493

CAT FEEDING PROJECT

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1 Works Done

1.1 Power calculations and battery selection

We will use raspberry pi zero wh as microcontroller and its recommended power supply unit current capacity is 1.2 Amperes. [1] The micro controller will be powered from batteries, but the connection will not be direct. We will use a boost dc to dc power converter that steps up the input voltage and gives a stable and constant output voltage. An example circuit for boost converter is shown in figure 1. We should consider all the elements of the system before choosing the battery. A 5000 mAh battery is required to have 5 hours duration, when only microcontroller is used. Apart from micro controller, we will use a dc motor to rotate the lit, and an ultrasonic sonar distance sensor to measure the remaining food in the reservoir. Other sensors such as motion sensor for night vision might be added later on. We are looking for a low current driven dc motor that satisfies our requirements. After choosing the motor, we will be able to choose the battery since the sonar sensor consumes a small current around 15 mA.



Figure 1: Boost Converter [2].

1.2 Organization Tree

Organization tree can be seen from the figure 2.

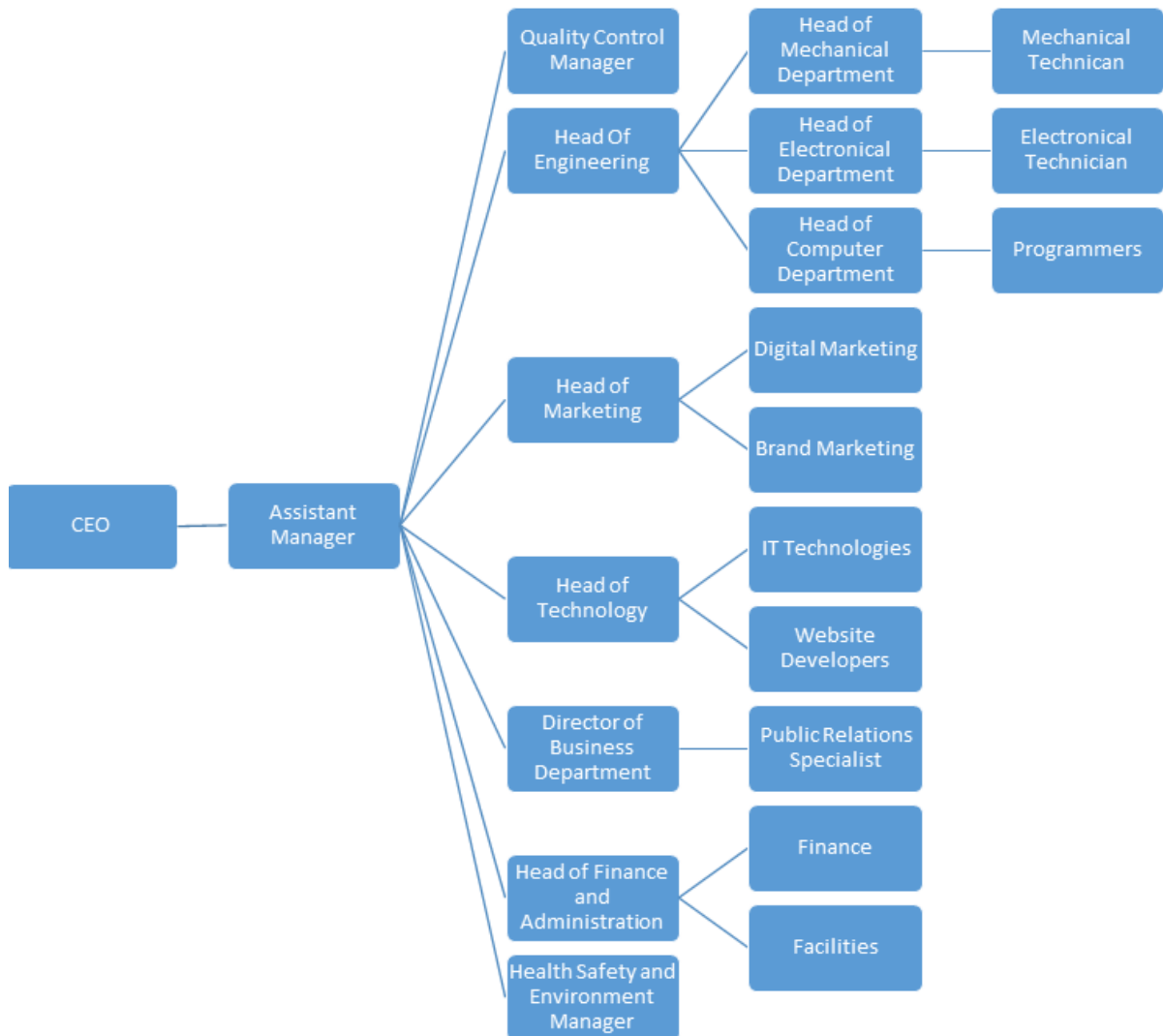


Figure 2: Organization Tree.

2 Work Distribution

The works done by each of us given as :

2.1 Asude

- Research on keras, mnist database and modal training.

2.2 Doğa

- Reorganizing the organization tree.
- Research on mechanical design.

2.3 Utku

- Writing power calculation part of weekly report.
- Research on Li-ion batteries.

2.4 Eser

- Research on data communication.

2.5 Furkan

- Research on face recognition systems.

3 Next Week Tasks

- Selecting DC motor.
- Selecting sonar sensor.
- Finalizing mechanical design.
- Research on micro controller.
- Research on model training.

4 References

- [1] <https://www.raspberrypi.org/documentation/faqs/>
- [2] Boost Converter. <https://pixelelectric.com/3v-5v-usb-mini-dc-dc-boost-converter/>