**EasySpeach**

**Project plan**

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# Introduction​ and background

This project will cover a small area of voice recognition using an Arduino board called atmega328p, (referens på ATmega328p) a mobile phone with a voice recognition software application that will compare your command with a local database. Depending on the command given to the database an “Id” will be sent to the Arduino via Bluetooth telling the atmega328p which light that shall be lit. This is only the first step towards bigger ambitions like creating a robot in medicine that is fully automatic and capable of understanding your problems through voice recognition.

The project is only the tip of the iceberg because the area of voice recognition is very big and still in full development.

Background knowledge for this project will be the scientific articles that were researched in this area, lectures in software engineering and lectures in programming courses.

# Aim and purpose

The purpose of this project is to create a functional voice recognition application that will record your voice and compare it to a local database with stored commands.

## Research questions

* How can we make voice recognition a more reliable input?
* How can voice recognition be used to improve the quality of life?

## Limitation

One limitation of this project is time. This is because the project was only given one month of work. Another limitation to this project is the budget this is because the time limit was so short and not enough resources was provided to make something bigger and more advanced.

(Martin lägg till din artikel som du hittade om en board som va bättre än våran angående voice recognition)

# Method

## Literature review

According to the literature voice recognition is not a reliable source when it comes to input commands, it is not developed enough to be considered a reliable input program.

In the article which sought to answer our third research question (Nanda & Dhande, 2012), we did not quite get the answer we wanted. As the research conducted in this article was performed with a different microprocessor optimized for speech recognition it’s kind of diffuse if the ATmega328p processor can handle it. To either find this answer with others research or by finding out ourselves is less important.

In (Zhong, et al., 2014) they talk about how voice controlled systems can help blind or disabled people when it comes to doing something simple like calling someone or even search for something on Google. The article mentions a solution to everyday life for people that need a fast and easy way to interact with their phone when they might not have the possibility or time to reach it.

We searched for articles that had a connection with our topic.

We have considered a lot of different articles but we decided the ones we have are to most correct and fitting for our project.

We discarded a lot of articles because they were not fitting for our project and/or they were not good enough.

The conclusion from the articles is that this project is very interesting and should be worked on a lot more and developed further to increase the potential of voice control. Considering this technological age, voice recognition should be a standard in some things.

## Benchmarking

The product that will be complete after this project is not a complete product ready for use in real life! This project in voice recognition is only the start of something that would be used in real life. It is the skeleton for a bigger project that could be used in for example: Smart houses, medicine, cars, mobile phones, etc. That makes this project only the start for something that would be used in real life.

# Expected Results

The expected result from this project is there will be a functional and good working program, which will work well with voice recognition. It will also be able to turn on the right light depending on the given command, and store every given command in the database.

# Social and ethical aspects

This project does not have any negative ethical aspects. This is because this project cannot do any harm to anyone, and cannot be discriminating in any way.

# References

Nanda, S. K. & Dhande, A. P., 2012. Microcontroller Implementation of a Voice Command Recognition System for Human Machine Interface in Embedded System. 1(1), p. 4.

Saume, D. L. &. C., 2012. En undersökning av röststyrning för Android-enheter. Volym 1, p. 35.

Zhong, Y. o.a., 2014. JustSpeak: Enabling Universal Voice Control on Android. p. 4.

# Appendix and enclosures

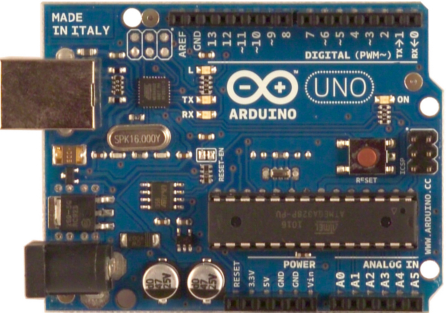


Figure 1. Atmega328p (microprocessor)