

# The Sound Disguiser

## Project Members

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## Description

The main idea is to sample sound and output a distorted sound samples depending on the current settings. The goal is to have the system running in real time. We will use a microphone that will take analogue sound as input and an A/D converter will convert it to digital samples. From these samples, new samples will be calculated by a processing unit. And the output samples will be given to amplifier. From where we can hear the sound using speakers and all these steps will be happen simultaneously.

## I/O processes

3 Inputs and 1 output

We have three input devices, a microphone, a rotator button and the on board buttons.

The microphone is used to take sound as an input. The rotator button is used to control the intensity of distortion. The on board buttons are used for choosing among the different effects.

The output device is an amplifier which gives output to the speaker.

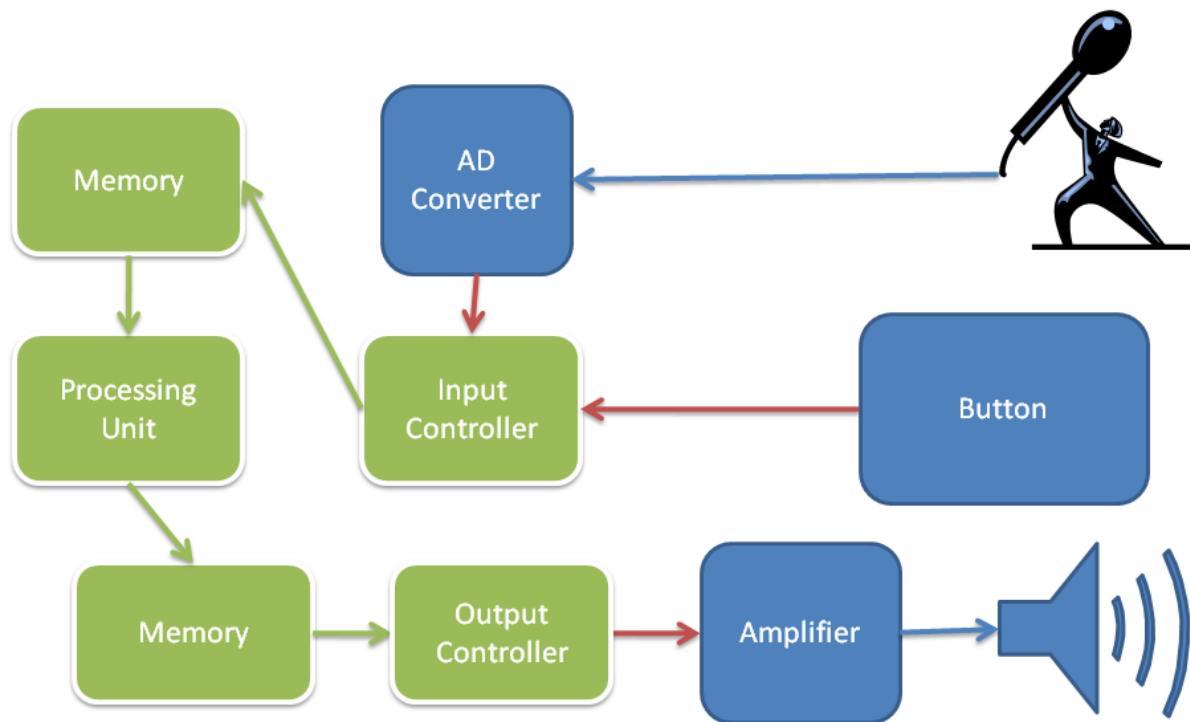
## Memory usage

The memory usage is not yet calculated since it depends on certain limitations like the computational speed and I/Os. For certain effects a buffer will be needed though.

## Improvements

There is a tradeoff between the quality and the delay. First we will implement the project and later if we have time we will try to improve the quality of sound, may be by using different sampling frequency. And we can have an extra effect.

## Block Diagram



## Time plan

	Hw/Sw (Linus)	Hardware (Nicklas)	Software (Nadir)
<b>Week 1</b>	Planning	Planning	Planning
<b>Week 2</b>	System design	System design	System design
<b>Week 3</b>	Decide on an interface between the vhdl and software parts	Some Microphone and Speaker Working	Sound Effects Decided
<b>Week 4</b>	Button control interface	Sound Running Through The System	Basic sound distortion algorithm running
<b>Week 5</b>	Helping others	Rotary button working	Customizable sound distortion algorithm
<b>Week 6</b>	Software running on hardware	Software running on hardware	Software running on hardware
<b>Week 7</b>	Buffer	Buffer	Buffer