

The vision:

This Project is trying to use the features of the z8 board we take in class and describes how to record, store, and play back sounds using the z8f6403

What do you want to build

In this project I will build a digital voice recorder

Detail the functional requirements

- 1. z8 board**
- 2. speaker for output**
- 3. and a microphone with amplifier for input**

Detail the non-functional requirements

This project shows in the usage of the A/D Converter for sound recording, accessing the Data Flash memory and the Pulse Width Modulation (PWM) for playback.

Diagram the hard ware architecture.

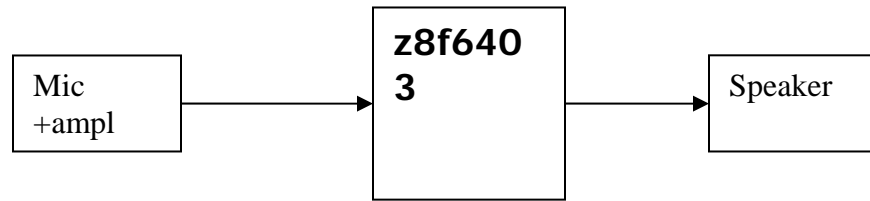
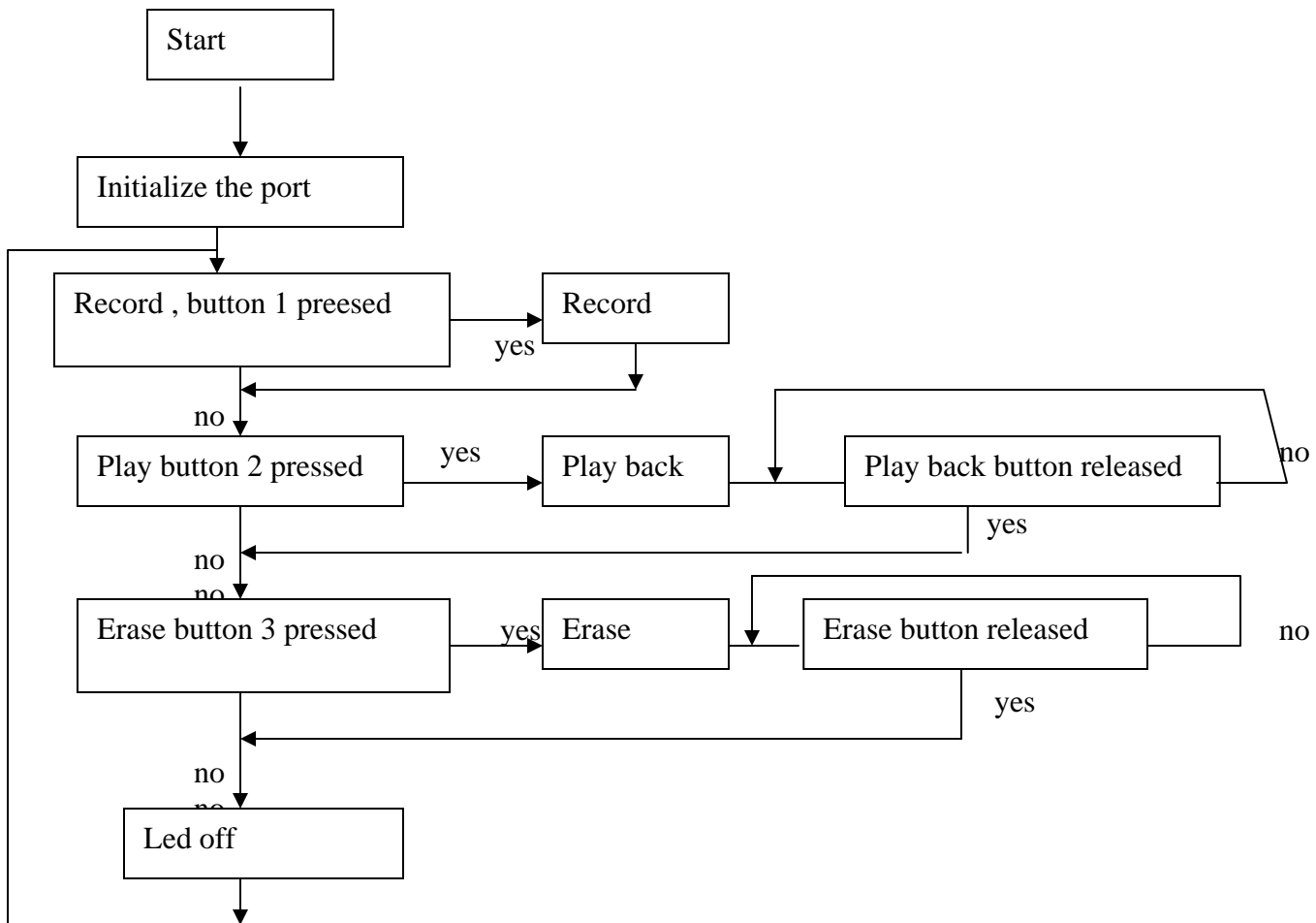


Diagram the software architecture



In the main loop the three pushbuttons are scanned. If one of them is pressed the LED is turned on to show that the system is busy, and the corresponding subroutine is called.

As a software debounce for the "Erase" and "Playback" functions an extra loop is performed until the button is released.

During the main loop the LED is turned off to indicate that the system is running idle.

Erase : Before data can be written into the memory the DataFlash has to be erased.

The record subroutine : consists of the setup of the A/D converter and an empty loop, which is performed as long as the "record" button is pressed.

Now to play back :

When the PWM counter contains the value "0", a Time overflow interrupt occurs. This interrupt is used to synchronize data output from the Flash memory to the PWM frequency, and the content of the flash memory are read out and modulated using the PWM.