Microprocessor And Microcontroller Lab

Deaf Arabic Sign Language Project

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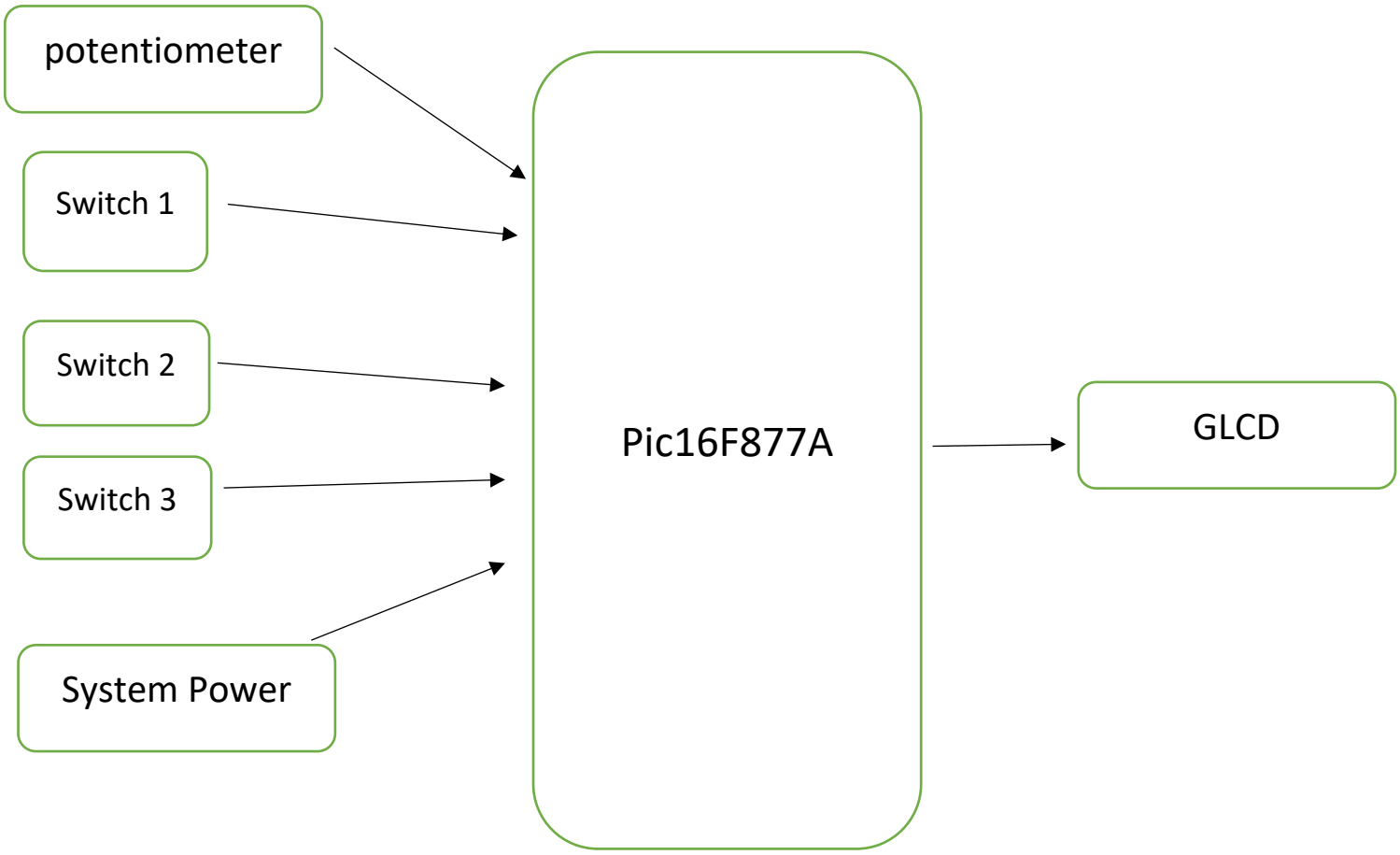
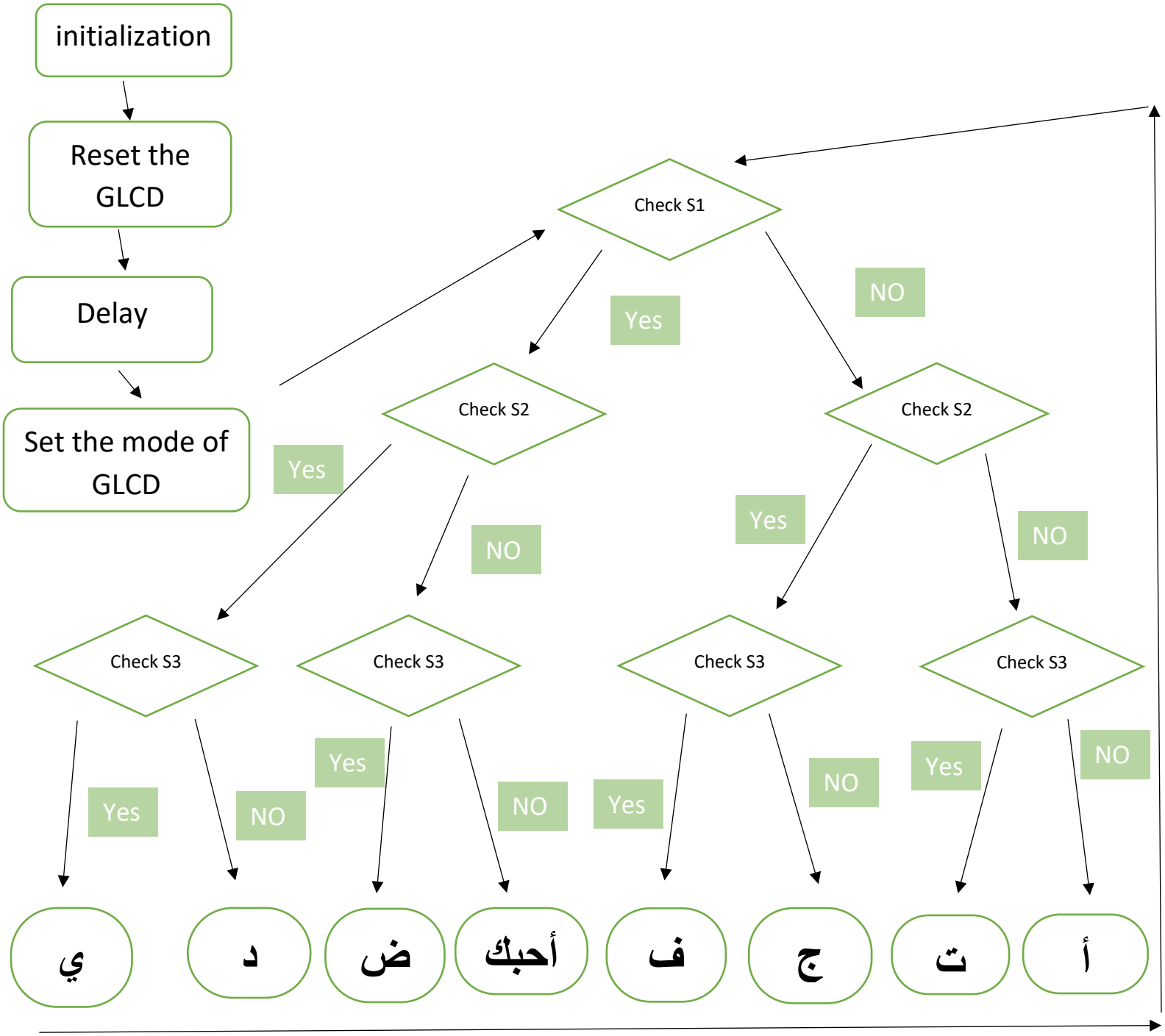
Abstract:

Communication is the only medium by which we can share our thoughts or convey the message but for a person with disability (deaf) faces difficulty in communication with normal person. Because of this, a person who lacks in hearing ability is not able to stand in race with normal person. Communication for a person who cannot hear is visual, not auditory. Generally deaf people use sign language for communication but they find difficulty in communicating with others who don't understand sign language. So there is a barrier in communication between these two communities. This project aims to lower this barrier in communication and to develop a cost effective system which can give voice to voiceless person with the help of pic16f778. It means that using this device will delete the barrier between the two different communities. Now a deaf person can get chance to grow in their respective carrier also makes nation grow.

THE BLOCK DIAGRAM:



THE FLOWCHART OF THE PROGRAM USED:



➢ The impact of ASL project as a solution for deaf people learning society problem:

The importance of teaching literacy to those who are deaf cannot be understated. Literacy is best defined as the ability to read, write, and possessing the knowledge to apply critical thinking skills to the written word. Deafness should never be an excuse to slack on literacy. So, this device may be a good tool for improving the educational process by giving up on the effort and time wasted by learning the Arabic sign language and just by having the device, the interaction of deaf people will be much easier thus, their education and finally upgrading their learning society.

➢ the cost of ASL project:

The current options a deaf person has to communicate with people who don't understand sign language are often expensive, but in our device we determined to find the low cost, high quality components to let the device cost easy to get by all of the society sectors.

- The price of the components:

TABLE 1

The component name	It's cost
GLCD	10 jds
3 Switches	1 jds

Most of the components was already available with us so we didn't have to buy them.

➢ The Decoration:

For the decoration of the hardware we decided to make a small simple box with a GLCD popping from above, which we can carry it easily anywhere and anytime we want. Of Corse this will save a lot of time, effort also money spent on sign language instructor. Also, there's a guiding note on beside the box to instruct the user.

- The components:

  - The switches: we chose the toggle switches, because we find it more practical in such device than the other kinds of switches.
  - A Graphical LCD: Panel size 80mm * 28mm.
  - The Potentiometer: for adjusting the brightness of the GLCD.
  - A breadboard, clock and wires as shown in figure (4).

FIGURE 1 TOGGLE SWITCHES

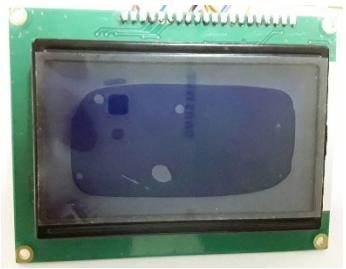


FIGURE 2 GLCD

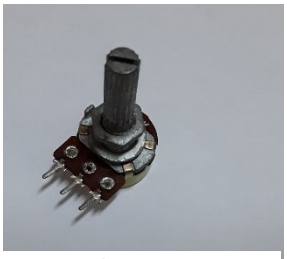


FIGURE 3 POTENTIOMETER

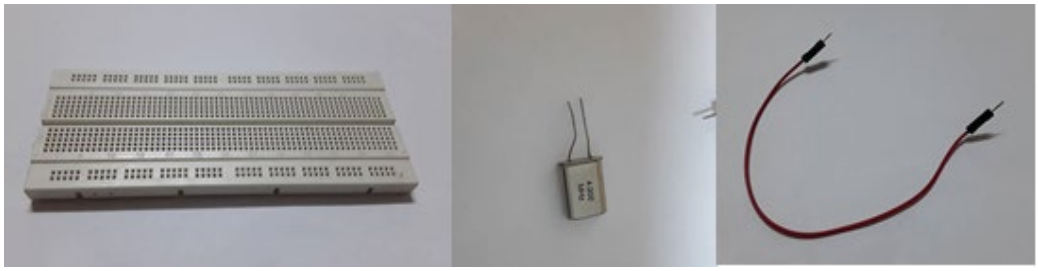


FIGURE 4 (BREADBOARD, CLOCK, WIRE)

Conclusion:

The communication between deaf and normal people becomes the same problem of two persons which knows two different languages, no one of them knows any common language so its becomes a problem to talk with each other and so they require a translator physically which may not be always convenient to arrange, to overcome this problem, we introduced the device. AS we connected Arabic sign language with the Arabic language so that communication is not limited between deaf people only but also with normal people. The end product will have a cheap and simplistic design making it easy for users to interact with.

OUR THOUGHTS AND COMMENTS ON THE LAB EXPERIMENTS:

The content of the experiments was very nice and helpful, but the equipment was very bad and it must change to agree with a future technology. The hole laboratory was new and different than all the other subjects we have ever took. Not mentioning the four hours a week and the amount of information we've took in such time, and how most of our time in the lab is listening to the instructor which lead us to be discarded. However, we can't deny how helpful and understandable was our instructor and that overcome all the disadvantages in the lab.