University of Jordan

School of Engineering

Department of Mechatronics Engineering

Microprocessor and Microcontroller Laboratory (0908432)

Project Specifications

Objectives

1- To become familiar with the basic design process of an embedded system.
2- To demonstrate your ability and understanding of the concepts of software and hardware design.
3- To demonstrate your ability to write and present a complete project.

Procedure:

The requirement is that **each group (2-4 Students)** should design and build their own project. As an advice, try to avoid using external extra hardware component unless you know what you are doing. Utilize the main project idea (Deaf Sign Language Display) and develop it to design a meaningful project around it.

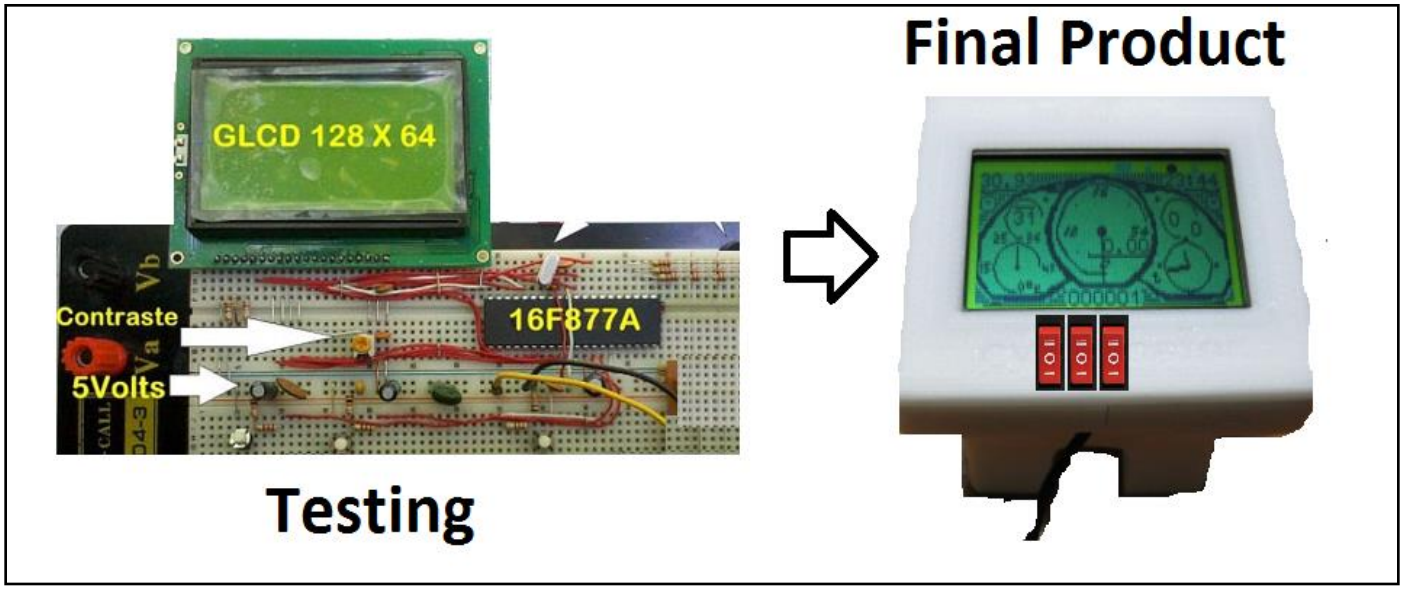
You are required to design and build a simple Deaf Arabic Sign Language (ASL) alphabets Display with the following core specifications:

1. Display 7 Arabic characters and one sign words based on a combination of **three switches**.
2. Use a **graphic LCD (128x64)** in your design to display.

The Arabic Sign Language (ASL) alphabets are shown below:

The Arabic Sign Language (ASL) words are shown below:

Final Product:



YOU ARE NOT ENCOURAGED TO BUY THE COMPONENTS INDIVIDUALLY, INSTEAD FORM A LARGE GROUP SUCH THAT WHEN YOU GO AND BUY A LARGE QUANTITY YOU CAN BARGAIN WITH THE SELLER AND ACQUIRE THE COMPONENTS AT A MUCH LESSER COST!

Report Preparation:

You should submit your hard copy of project report before starting the Discussion, your lab report should include:

a- Cover page contain your group names and registration numbers.
b- Table of content + list of figures + list of tables.
c- Abstract contains a description of the project and what it accomplishes.
d- A block diagram that represents the signal flow of the project with clearly identified inputs and outputs.
e- A flowchart for the program used. It is highly suggested that you use subroutines for your different parts of the program.
f- A section that discuss the impact of ASL project as a solution for deaf people learning society problem.
g- A section that discuss the cost of ASL project, so economical context of your project is discussed.
h- A section that discuss the final decoration of your ASL project, so how this helps in the commercial context aspects.
i- Conclusion
j- Include on a separate page, your thoughts, and comments on both the content of the lab experiments and the course material. Be as frank as you want. Including any feedback on the teaching method, the content, your wish list and ideas for future improvement of both the lab and course. Be assured that this info will be taken seriously, and it will not be utilized for any student evaluation and will not affect you in the class or the lab.

Submission and Evaluation:

1- The absolute final deadline for submission of the project including demonstration and **report** is **Wednesday 1/8/2018**.
2- THE PROJECT CODE SHOULD BE ONLY WRITTEN IN PIC ASSEMBLY LANGUAGE.
3- The project will be evaluated based on effort, idea, report, demonstration and knowledge of contents. The marks for the project will be 20 marks distrusted as:

Report	10 marks
Hardware design + discussion	10 marks