



SAMPLE INTRODUCTION

Introduction

The "Introduction" of a laboratory report identifies the experiment to be undertaken, the objectives of the experiment, the importance of the experiment, and overall background for understanding the experiment. The objectives of the experiment are important to state because these objectives are usually analyzed in the conclusion to determine whether the experiment succeeded. The background often includes theoretical predictions for what the results should be.

Sample Introduction

This report presents a design of a temperature measurement and display system that incorporated the Motorola 68HC11 microcontroller, simply referred to here as the HC11. This design was a valuable experience because similar temperature measurement and display systems often are used in buildings and vehicles [Spasov, 1996]. The design presented in this report made use of the HC11's analog-to-digital (A/D) converter and the serial subsystems. As shown in Figure 1, the design included a temperature sensor connected to one of the HC11's A/D input pins on Port E, and light emitting diodes (LEDs) connected to Port B. These LEDs acted as temperature indicators. Additionally, the design included a connection between the HC11 and a remote personal computer (PC). This connection served to send messages regarding temperature to the PC. An assembly software program developed for this design performed various functions for using the added hardware.

The design had two main objectives. The first objective was to use the HC11 to measure temperature. Included in this objective was the task of connecting the temperature sensor and the LEDs to the HC11. Also included in this objective was the task of designing software to do the following: initialize the A/D converter and serial subsystems; control the measurement and storage of temperature in a RAM variable called TEMP; and control the display of temperature on the LED outputs. The second objective of the design was to use the HC11 to indicate if the temperature went outside of prescribed limits: below 20 degrees Fahrenheit or above 90 degrees Fahrenheit. Included in this objective was the task of connecting the HC11 to a remote PC terminal through an RS-232 connection. Another task within this objective was developing software to initialize the serial subsystem. The final task of this objective was to create subroutines for the software program of the first objective to have the HC11 send a message to the PC if the measured temperature went outside the stated limits.

This report first presents the procedures for and assessment of the design to have the HC11 measure temperature. Then the report discusses the procedures for and assessment of adding a serial output to the HC11 design to communicate whether the temperature is outside of prescribed limits.

<http://www.writing.eng.vt.edu/workbooks/labreport.html#introduction>.