# Practice 6. Parallel Ports (GPIOs)

## Objectives

he student will become familiar with the basic instructions to configure and operate the Microcontroller input/output ports.

## Introduction

Microcontrollers are all around he world. Each day, Microcontrollers, are more present in the many aspects of our lives: in our work, inside our houses, and in more. We can find them controlling small devices like cellphones, microwaves, washing machines, and televisions.

A microcontroller is one device or chip that is used to govern one or more processes. For example, the controller that regulates the room temperature of an air conditioner; it has a sensor that continuously measures the internal temperature and, when the preset limits are exceeded, it generates the necessary signals to adjust the temperature.

## Results

Image of the Build successful:

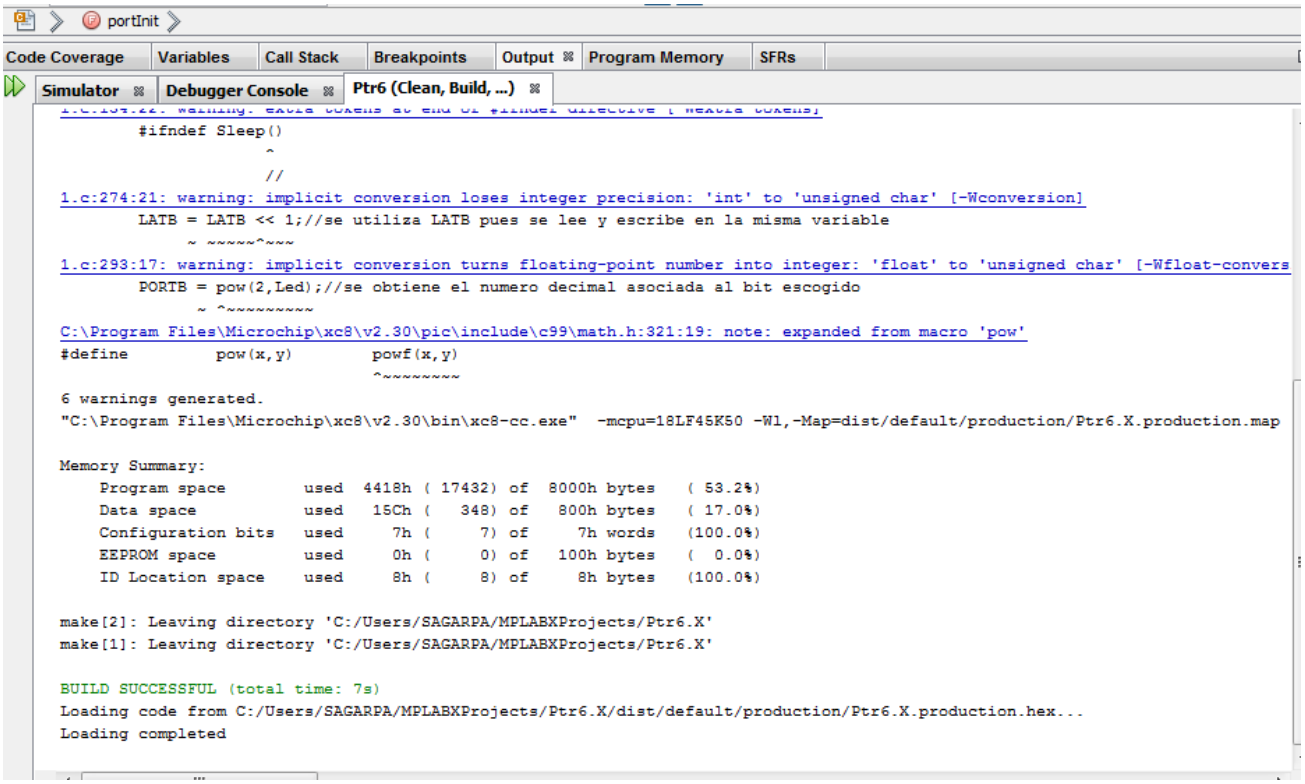
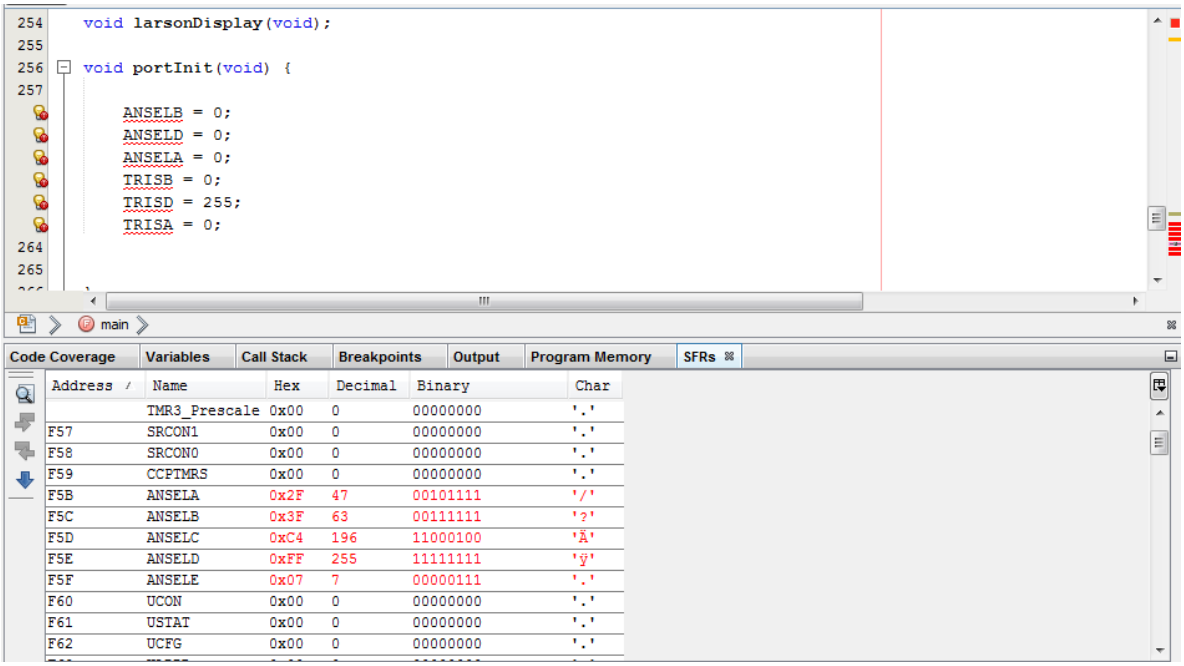
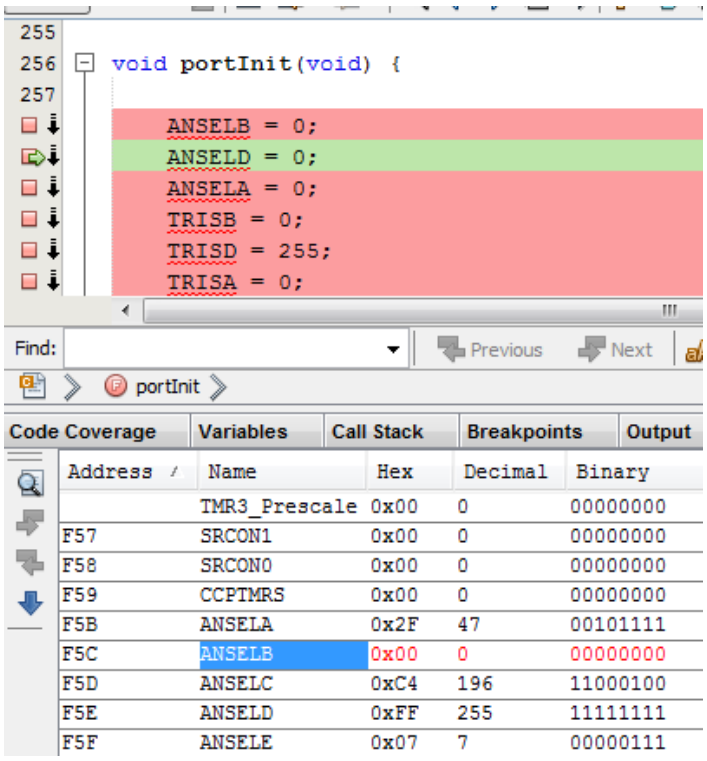
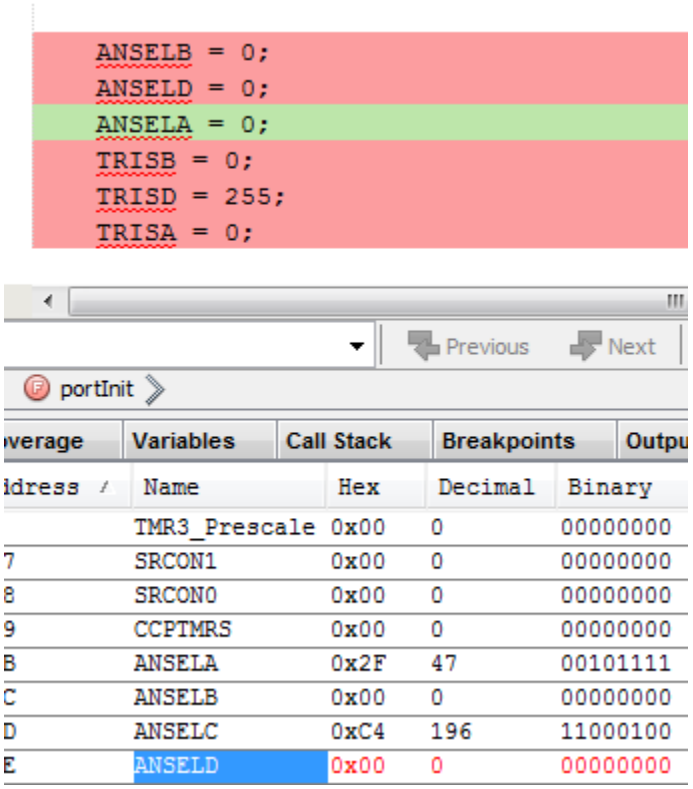


Image of Registers Modifications:



```
ANSELB = 0;
ANSELD = 0;
ANSELA = 0;
TRISB = 0;
TRISD = 255;
TRISA = 0;
```

```
ANSELB = 0;
ANSELD = 0;
ANSELA = 0;
TRISB = 0;
TRISD = 255;
TRISA = 0;
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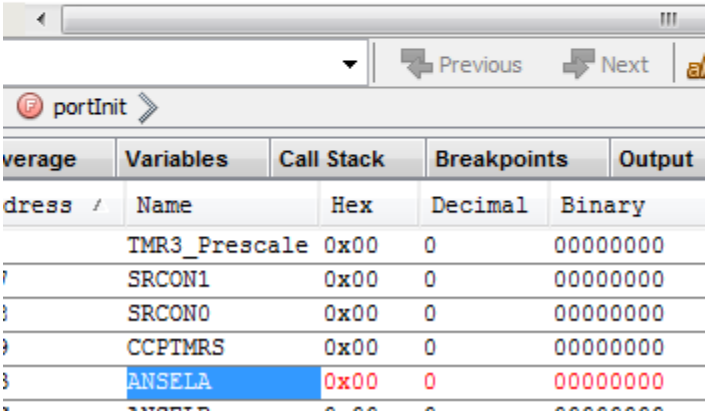


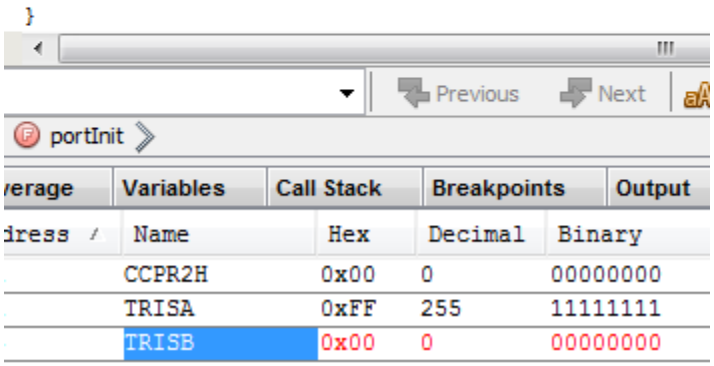


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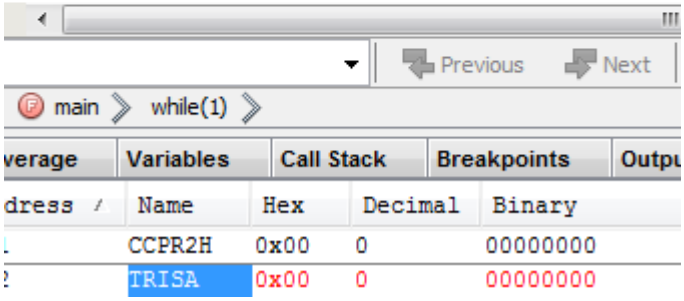
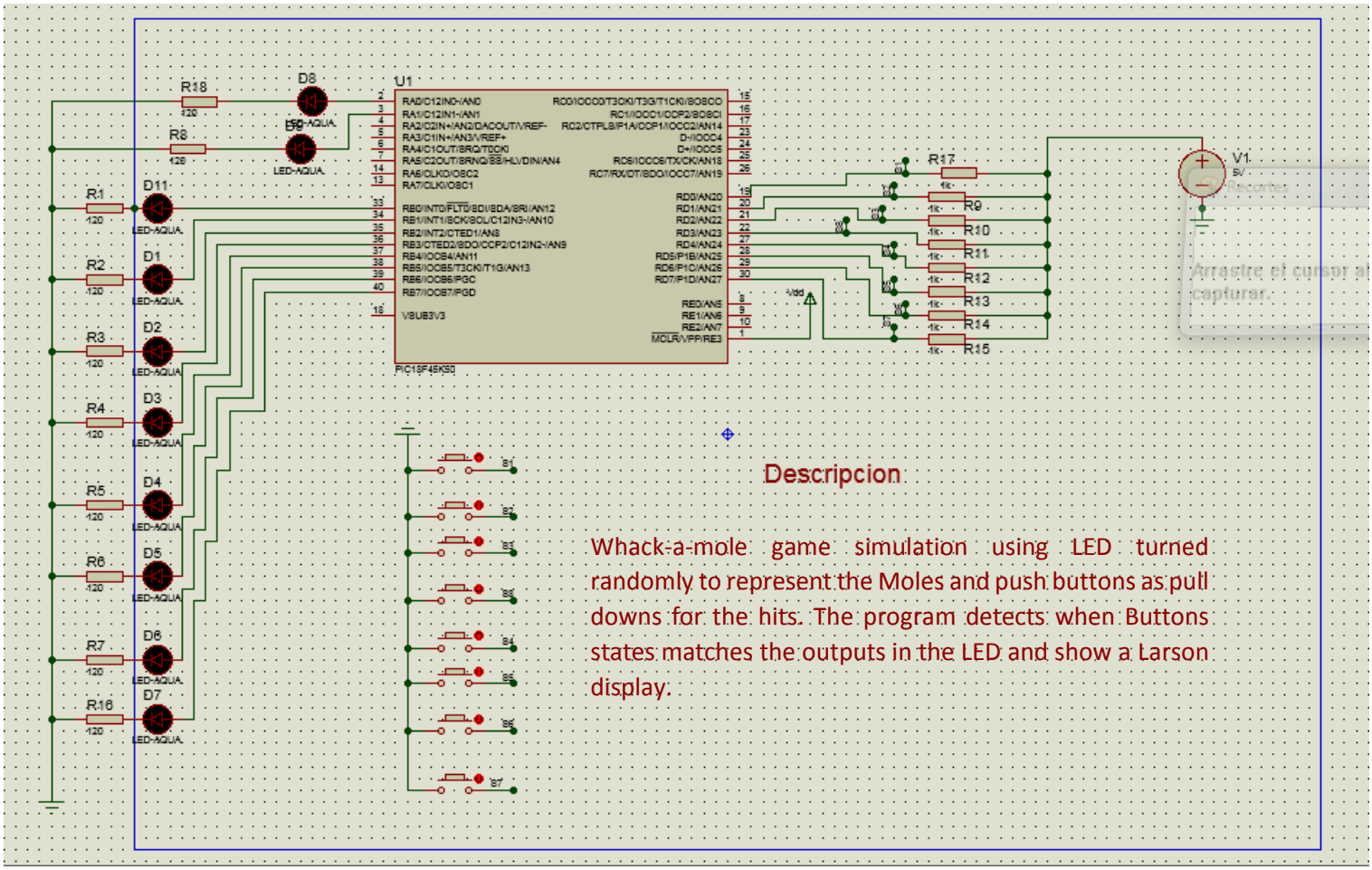


Connections made in Proteus with the curiosity Device and minimum card system:




Link to demonstration: https://youtu.be/LQMtvo2DGqU

Conclusions:

Despite the low difficulty of the problem, in comparison, it help to understand how ports can be programmed from mplab to manage external devices where it is possible to read information in about them state in time, in order to take a response where certain events are presented, comprehending it as the way the microcontroller communicates whit its environment . Furthermore it is more clear know the difference between PORT and LAT having a better perspective of what process is followed when reading or writing a port.