

## ***BIM340 Microcontroller Based Systems Design***

### ***Term Project***

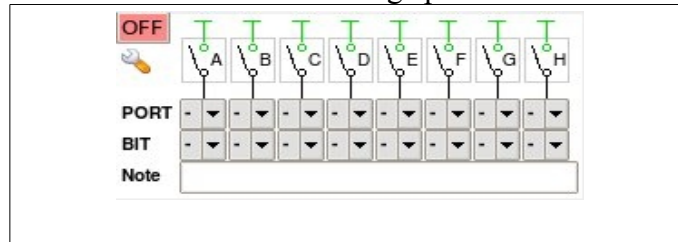
Out Date: May 04, 2010

In Date: May 24, 2010

## ***The Snake Game Simulation on MCU8051 IDE***

### **DESCRIPTION:**

In this project, you will implement a snake game simulation with 8051 assembly language on the MCU8051 IDE with the following specifications:



- The game uses a **Simple Keypad** for user interface.
- The initial length of the snake is 2 units.
- The movement direction of the snake can be adjusted with the keys “A,B,C,D” on the keypad.
- The snake can be accelerated with the the key “E” and can be decelerated with the key “F”.
- There will be 1 randomly placed egg.
- The RAM address interval 40h-7fh will be used for drawing the snake. Use “FFh” value for the full cells and “00h” value for the empty cells. In order to draw the egg, use “11h” value.
- The snake grows in size as it snatches the eggs.
- The snake sees no boundaries at the edges of the display. It will propagate in to any edge and enter from the opposite edge
- The game ends when the snake collides with itself
- The total eggs snatched is then displayed as the game score.

### **Your REPORT should include:**

- Brief description of the application including
  1. General system design/architecture (1 paragraph)
  2. Description of the all procedures
  3. Description of the main execution (workflow) of the program
- Well commented source code of the developed application
- The project will be undertaken in teams consisting of **two** members.
- Uncommented source codes will not be evaluated.

### **REFERENCES**

[1] 8051 Instruction Set : <http://efe.ege.edu.tr/~sinanyil/Dersler/micro/set8051.html>

[2] An example video for snake game simulation with 8051:

<http://www.youtube.com/watch?v=2hf1CwJzKwI>