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**CSC304 – Microprocessor Architecture and Assembly**

**Project Description**

**VENDING MACHINE IMPLEMENTATION**

**Due date: 1st June 022**

Prepared By:

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Use the Keil/Edsim Simulator for 8051 microcontroller to design a Vending Machine system using Keypad, switches, LCD and Motor interface. The implementation should include 4 items (Item 01, Item 02, Item 03, Item 04) with varying prices.

1. Like a normal Vending machine, display messages will appear on the LCD Display for every step.
2. Items will be selected using Keypad and coins entry would be implemented using Dip Switches.
3. The entered price for the given item will be checked and motor will be activated to drop the item. The motor runs at maximum speed according to the crystal frequency.

**Guidelines:**

1. Use attached circuit diagrams for reference design (taken from edsim site).
2. Follow design and programming guidelines for Keypad, Motor, Switches and LCD at <https://www.edsim51.com/examples.html>
3. The design can be better developed and demonstrated using Edsim based on the control devices. However, if you wish to use Keil, feel free to do so.
4. Report should be 8-10 pages, detailing the flow chart, circuit design, program and screen shots of the simulator/assembler output detailing every step.

A screenshot of a cell phone

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Figure 1:Motor Design

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Figure 2: KeyPad Design

A close up of a piece of paper

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Figure : LCD design