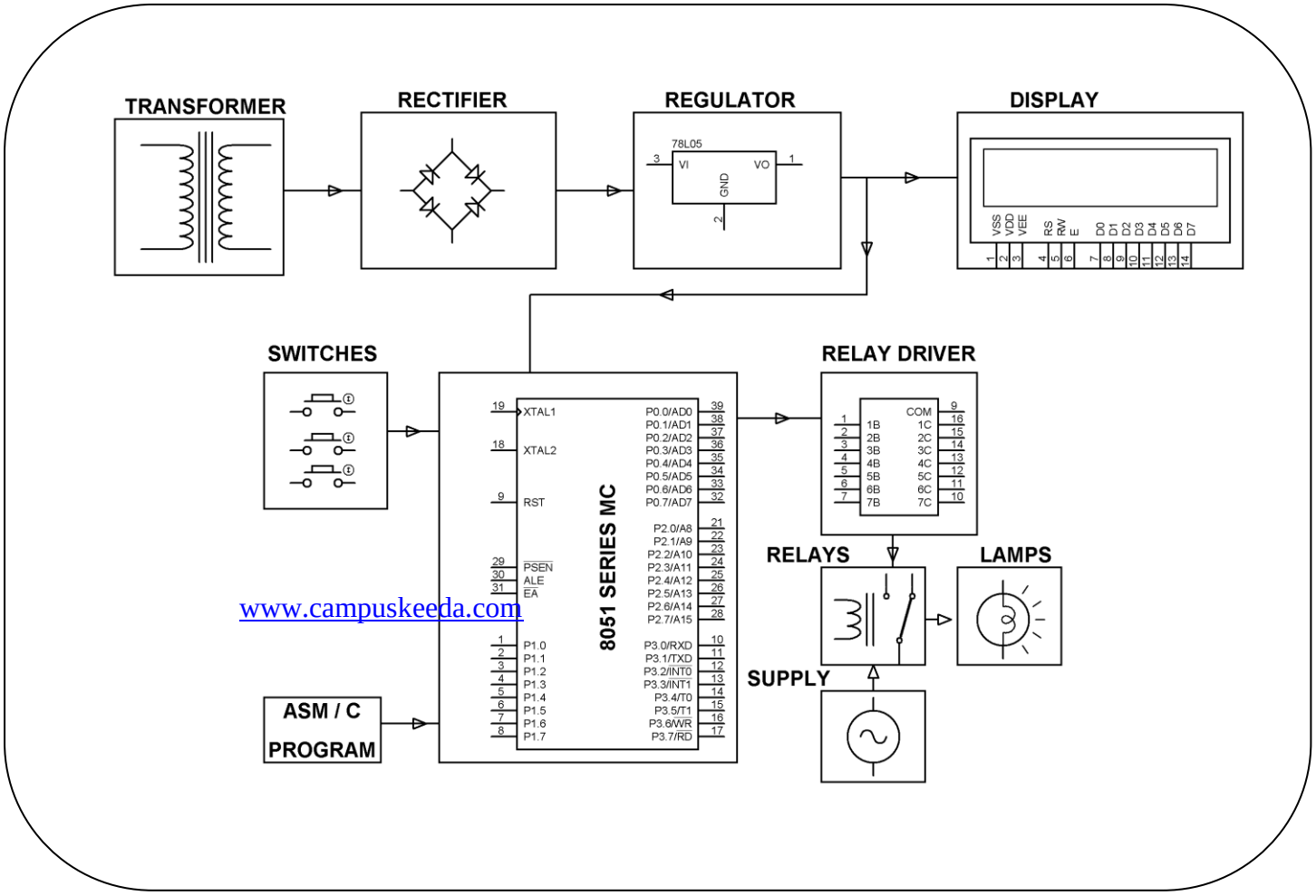
PROGRAMMABLE SWITCHING CONTROL FOR INDUSTRIAL AUTOMATION IN REPETITIVE NATURE OF WORK

ABSTRACT

The project is designed to switch industrial loads using a user programmable logic control device for sequential operation. This operation is generally used for repetitive nature of work.

Programmable logic controllers used in industrial applications are very expensive for simple operations like sequential switching of loads. In this project we demonstrate the working of this simple operation using a microcontroller of 8051 family. The development of this application requires the configuration of the program through input switches. In industries, there are many tasks are carried out which requires some repeated operation in various orders and time intervals. For example, certain loads need to be switched ON/OFF in specific time intervals. In order to achieve this, microcontroller is programmed in such a way that the loads a can be operated in three modes: Set mode, Auto mode and Manual mod. In set mode, through timers, the machinery works based on input time set by the user where as in auto mode it works on default time settings and finally in the manual mode it functions while respective switches are pressed depending on the user's need and flexibility. All the modes and status of loads are displayed on an LCD.

BLOCK DIAGRAM



HARDWARE REQUIREMENTS:

8051 series Microcontroller, LCD, Relay Driver, Relays, Resistors, Capacitors, LEDs, Crystal, Diodes, Transformer, Voltage Regulator, Push Buttons, Lamps.

SOFTWARE REQUIREMENTS:

Keil compiler

Language: Embedded C or Assembly.