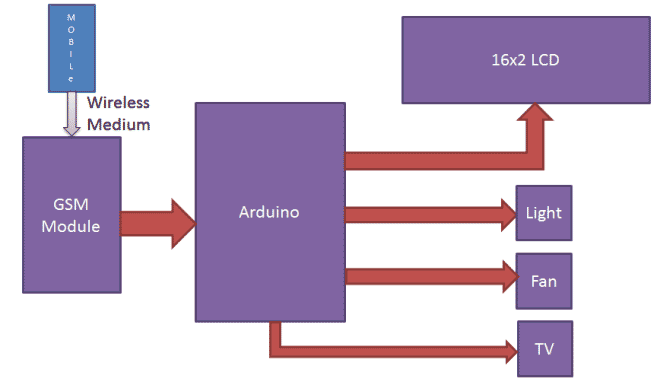
**Working of the circuit**

* Serial pin of PIC Microchip (RX and TX) is connected to the GSM module to control it via AT commands so as to receive SMS and set the mode.
* When the system is ON, PIC will initialize the GSM module and wait to receive SMS.
* 2×16 LCD display is connected to PORTB of PIC, it will display the status of the system (i.e. it will display what the system is doing).
* Initially GSM module is switched to Text mode by sending the AT command “AT+CMGF=1”. Here “1” indicates text mode and “0” is used to indicate PDU mode.
* After this setting, PIC will display that it’s waiting for SMS and will wait to receive SMS.
* The reception of SMS is detected by checking the received character; it will send all information about the SMS which starts with “+CMT”. Message text content will start after sending”\n” and ending with”\n”. This is the logic I have used here to receive SMS.
* I have used an infinite loop which continuously checks if a ‘+’ is received, followed by ‘C’, ‘M’ and ‘T’.
* Then the system understands that a massage is going to be received and waits for a $ (dollar sign), if done it will store the entire message on a buffer of size 33 named as INFO. It’s again split and stored on two separate buffers for further processing.
* After this, PIC will display “SMS IS RECEIVED” on first row and “DEVICE SWITCHING” in the second row. It also enables a buzzer for 2 seconds as an audio indication of SMS reception.
* A variable “count” is initiated as “1” and the received SMS information is now on the buffer named line1, the letter on line1[0] is skipped and takes line1[1] because the message for ON and OFF is sent as “$ON ABCDEFGH$” and “$OFF ABCDEFGH$”; in both cases Zeroth letter (“O”) is common, so I skipped it.
* The fist letter indicates that the message is for ON or OFF. Here I have used two ‘for’ loops, one to set PORTD bits (ON the devices) and other one to reset the PORTD bits(OFF the devices).
* ON and OFF detection is done by checking the first character of the message, “N” for ON and “F” for OFF.
* After detecting the message it will enter into the corresponding loop of SET or RESET pins. Then the relays connected to these pins activate or deactivate.
* For demonstration purposes I have used LEDs and in the circuit diagram I have mentioned how to connect relay in order to connect high current devices.
* To switch ON the devices, you may send SMS as “$ON ABC$” to ON A, B and C; “$OFF B$” to switch OFF B.
* We have designed this system to switch 8 individual devices and you can improve it through simple modification of the program and hardware.

**System View**

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