cd interfacing

```
//Includes
#include <p18f4550.h>
#include "vector_relocate.h"
//Declarations
#define LCD_DATA PORTD //LCD data port to PORTD
#define ctrl PORTE //LCD control port to PORTE
#define rs PORTEbits.RE0 //register select signal to RE0
#define rw PORTEbits.RE1 //read/write signal to RE1
#define en PORTEbits.RE2 //enable signal to RE2
//Function Prototypes
void init_LCD(void); //Function to initialise the LCD
void LCD_command(unsigned char cmd); //Function to pass command to the LCD
void LCD_data(unsigned char data); //Function to write character to the LCD
void LCD_write_string(static char *str);//Function to write string to the LCD
void msdelay (unsigned int time); //Function to generate delay
//Start of Main Program
void main(void)
{
char var1[] = "PICT";//Declare message to be displayed
char var2[] = "COLLEGE";
ADCON1 = 0x0F; //Configuring the PORTE pins as digital I/O
TRISD = 0x00; //Configuring PORTD as output
TRISE = 0x00; //Configuring PORTE as output
init_LCD(); // call function to initialise of LCD
msdelay(50); // delay of 50 mili seconds
LCD_write_string(var1);//Display message on first line
msdelay(15);
LCD_command(0xC0); // initiate cursor to second line
```



```
LCD_write_string(var2);//Display message on second line
while (1); //Loop here
} //End of Main
//Function Definitions
void msdelay (unsigned int time) //Function to generate delay
{
unsigned int i, j;
for (i = 0; i < time; i++)
for (j = 0; j < 710; j++);//Calibrated for a 1 ms delay in MPLAB
}
void init_LCD(void) // Function to initialise the LCD
{
LCD_command(0x38); // initialization of 16X2 LCD in 8bit mode
msdelay(15);
LCD_command(0x01); // clear LCD
msdelay(15);
LCD_command(0x0C); // cursor off
msdelay(15);
LCD_command(0x80); // go to first line and 0th position
```

```
msdelay(15);
}
void LCD_command(unsigned char cmd) //Function to pass command to the LCD
{
LCD_DATA = cmd; //Send data on LCD data bus
rs = 0; //RS = 0 since command to LCD
rw = 0; //RW = 0 since writing to LCD
en = 1; //Generate High to low pulse on EN
msdelay(15);
en = 0;
}
void LCD_data(unsigned char data)//Function to write data to the LCD
{
LCD_DATA = data; //Send data on LCD data bus
rs = 1; //RS = 1 since data to LCD
```



```
rw = 0; //RW = 0 since writing to LCD
en = 1; //Generate High to low pulse on EN
msdelay(15);
en = 0;
}
//Function to write string to LCD
void LCD_write_string(static char *str)
{
int i = 0;
while (str[i] != 0)
{
LCD_data(str[i]); // sending data on LCD byte by byte
msdelay(15);
i++;
}
}
```