MOTOR Module

Name	Motor_rotateClockwise
Input	Void
Return	Void
Description	Makes the motor rotates in clockwise direction

Name	Motor_rotateAnticlockwise
Input	Void
Return	Void
Description	Make the motor rotates in anticlockwise direction

Name	Motor_init()
Input	Void
Return	Void
Description	Initialization for the motor and buttons

ADC Module

Name	ADC_SS3_In
Input	Void
Return	uint16_t
Description	Read from port and sample, return digital values

Name	ADC0_Init
Input	uint8_t channel
Return	Void
Description	Initialize Port E and activate ADC

Name	ADC0_SS3_Init
Input	uint8_t channel, uint16_t mode, uint8_t temp_en
Return	Void
Description	Initialize sample sequencer 3 with option to activate temperature sensor or disable it

UART Module

Name	UART_Init
Input	uint8_t index
Return	Void
Description	Initializes desired UART by activating the alternate function of the desired port and setting the baud rate

Name	UART_Available
Input	uint8_t index
Return	uint8_t
Description	Checks the availability of the register of desired UART

Name	UART_Read
Input	uint8_t index
Return	uint8_t
Description	Reads one character at a time of desired UART

Name	UART_Write
Input	uint8_t index,uint8_t data
Return	Void
Description	Writes one character at a time

Name	UART_sendString
Input	Pointer to a string
Return	Void
Description	Writes the whole string

Name	UART_receiveString
Input	Pointer to a string
Return	Void
Description	Reads the whole string

PWM Module

Name	pwm_setDutycycle
Input	uint8_t
Return	Void
Description	Control the density of led (output voltage)

Name	pwm_init
Input	Void
Return	Void
Description	Initialize PWM

Temp sensor Module

Name	ADC0_init()
Input	void
Return	void
Description	Initialize Analog to Digital converter 0. Configure ADC0 module to enable internal temperature sensor. For ADC0: Active ADC0, bit 16 of RCGC register, Make sequencer 3 triggered software, get input channel 0enable temperature measurement, set flag on EOC at 1st sample, and enable ADC0 sequencer 3 after finishing configuration.

Name	Tempsensor_read()
Input	void
Return	uint16_t
Description	Reading values from internal temperature sensor. For Sensor: First initialize sequencer 3, waiting for temperature converting complete, then read the temperature value, and finally clear completion flag.

LCD Module

Name	LCD_init
Input	Void
Return	Void
Description	Initialize Port B and 3 pins from Port A, set direction, enable digital pins For LCD: Enable 2 lines, display on cursor off, clear display screen, shift cursor to right.

Name	LCD_sendCommand
Input	uint8_t command
Return	Void
Description	Set enable pin, put data in DATA register, reset enable pin & RS pin.

Name	LCD_displayString
Input	const char *Str
Return	Void
Description	To allow LCD to print whole string at once.

Name	LCD_displayCharacter
Input	uint8_t data
Return	Void
Description	To print one character at a time .

Name	itoa1
Input	int, array of char
Return	*char
Description	To be able to print temperature degree on LCD we convert it to string this function has the ability to do so.

Name	LCD_intgerToString
Input	uint32_t
Return	Void
Description	itoa1is called in it to convert and print on LCD

Name	LCD_clearScreen
Input	void
Return	void
Description	To clear LCD

Name	LCD_goToRowColumn
Input	uint8_t row,uint8_t col
Return	void
Description	To make cursor go to specific row and column

Name	LCD_displayStringRowColumn
Input	uint8_t row,uint8_t col,const char *Str
Return	void
Description	print string starting from this row and column

Interrupt module

Name	`interrupt_init`
Input	void
Return	void
Description	To initiate interrupt and its ports

Name	`GPIOF_Handler`
Input	void
Return	void
Description	ISR

Timer module

Name	`Periodic_Timer_Init`
Input	`uint32_t TimerNo`
Return	void
Description	Initiate timer and its port

Systick module

Name	`systick_init`
Input	`void`
Return	void
Description	Initiate systick

Name	`systick_wait`
Input	`uint32_t delay`
Return	void
Description	Wait for certain period

Name	_delay_ms ()
Input	uint32_t time
Return	Void
Description	Delay for n milliseconds

Potentiometer Module

Name	Pot_Init ()
Input	uint8_t channel, uint16_t mode
Return	Void
Description	Initiate ADC and sequencer modules for potentiometer

Name	Pot_Read ()
Input	void
Return	uint16_t
Description	Return the read of ADC based on potentiometer