Team 15

REPORT

Team members:

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Port Driver:

Name	Port_PinDirectionType
Type	Enum
Values	PORT_PIN_IN
	PORT_PIN_OUT

Name	Port_Init	
Input	uint8	port_index
Return	void	
Description	Initialize port based on selected port_index (0 to 5) by enabling the clock, unlocking the port, and making the selected mode digital	

Name	Port_SetPinDirection	
Input	uint8	port_index
	uint8	pins_mask
	Port_PinDirectionType	pins_direction
Return	void	
Description	Change the direction of the selected pins by pins_mask in the port selected by port_index	

ADC Driver:

Name	ADC_init	
Input	uint8_t	port_index
	uint8_t	pin_num
	uint8_t	module_num
	uint8_t	chanl_num
Return	void	
Description	Enable ADC	

Name	temp_init
Input	No inputs
Return	void
Description	Initialize the temperature sensor to be ready for reading

Name	temp_read
Input	No inputs
Return	uint32_t
Description	Read the temperature by this equation: temp = 147 - (247 * ADC0_SSFIFO3_R)/4096

Interrupt Driver:

Name	Gpio_interrupt_init	
Input	uint8_t	port_index
	uint8_t	en_mask
	uint8_t	priorty
Return	void	
Description	Enable interrupt mode for tm4c1236pm	

LCD Driver:

Name	__delay_us	
Input	uint32_t	x
Return	void	
Description	Delay in micro seconds	

Name	lcd_initt
Input	No inputs
Return	void
Description	Enable and initialize LCD

Name	lcd_command	
Input	uint8_t	comm
Return	void	
Description	Control the LCD	

Name	lcd_out	
Input	uint8_t	data
Return	void	
Description	Print on the Screen	

Name	lcd_print	
Input	uint8_t	*str
Return	Void	
Description	Print Words on the screen	

Name	lcd_print_num	
Input	uint16_t	num
Return	void	
Description	Print numbers on the screen	

Timer Driver:

Name	Systic_init
Input	No inputs
Return	void
Description	Enable timer

Name	Systic_wait	
Input	uint32_t	delay
Return	void	
Description	Using timer to count the delay value until it finishes	

Name	Systic_wait_10ms	
Input	uint32_t	delay
Return	void	
Description	Delay every 10 msec	

UART Driver:

Name	Uart0_init
Input	No inputs
Return	void
Description	Enable UART0

Name	Uart0_tx	
Input	uint8_t	data
Return	void	
Description	Transmitter for UART0	

Name	Uart0_rx
Input	No inputs
Return	uint8_t
Description	Receiver for UART0

Name	Uart2_init
Input	No inputs
Return	void
Description	Enable UART2

Name	Uart2_tx	
Input	uint8_t	data
Return	void	
Description	Transmitter for UART2	

Name	Uart2_rx
Input	No inputs
Return	uint8_t
Description	Receiver for UART2

Name	Uart5_init
Input	No inputs
Return	void
Description	Enable UART5

Name	Uart5_tx	
Input	uint8_t	data
Return	void	
Description	Transmitter for UART5	

Name	Uart5_rx
Input	No inputs
Return	uint8_t
Description	Receiver for UART5

PWM Driver:

Name	pwm_init	
Input	uint8_t	port_index
	uint8_t	module_num
	uint8_t	pin_num
	uint8_t	chanl_num
	uint32_t	load
	uint32_t	comp
Return	Void	
Description	Enable PWM mode	

Stepper Motor:

Name	motor_run	
Input	uint8_t	port_index
Return	Void	
Description	Rotate the motor	

Name	motor_30_left	
Input	uint8_t	port_index
Return	Void	
Description	Rotate the motor 30 degrees clockwise	

Name	motor_30_right	
Input	uint8_t	port_index
Return	Void	
Description	Rotate the motor 30 degrees anti-clockwise	