



APIS DOCUMENTATION

[Document subtitle]



Name: Mohamed Hafez Mohamed

Task: Task1_APIs Documentation

FEBRUARY 23, 2021

[COMPANY NAME]

[Company address]

1- DIO Module:

Function name	DIO_InitPin		
Arguments	Input	DioPin	Enumeration
		It's pin number	
		DioPinMode	Enumeration
		Define pin mode	
	Output	None	
	Input/Output	None	
Return	E_OK	0	
	E_NOK	1	
Description	Responsible for initializing pin mode		

Name:	Dio_Pin		
Type:	Enumeration		
Range	A0 : D0	32	Pin Number
Description:	Pin Number		

Name:	DioPinMode		
Type:	Enumeration		
Range	DIO_INPUT	0	Input pin
	DIO_PUSH_PULL	1	Output pin
Description:	Define Pin Mode		

Function name	DIO_Write		
Arguments	Input	DioPin	Enumeration
		It's pin number	
		Value	Enumeration
		Define pin value	
	Output	None	
	Input/Output	None	
Return	E_OK	0	
	E_NOK	1	
Description	Responsible for Writing value on physical pin		

Name:	Dio_Pin		
Type:	Enumeration		
Range	A0 : D0	32	Pin Number
Description:	Pin Number		

Name:	Value		
Type:	Enumeration		
Range	LOW	0	Low level volt
	HIGH	1	High level volt
Description:	Define Pin Value		

Function name	Dio_InitPin		
Arguments	Input	Dio_Pin	Enum
		It's pin number	
	Output	Pin_Level	U8 *
	Input/Output	None	
Return	E_OK	0	
	E_NOK	1	
Description	Get the value of pin and store it in the Pin_Level pointer		

Name:	Dio_Pin		
Type:	Enumeration		
Range	A0 : D0	32	Pin Number
Description:	Pin Number		

2- Timer Module:

Function name	Timer_Init		
Arguments	Input	None	None
	Output	None	None
	Input/Output	None	
Return	E_OK	0	
	E_NOK	1	
Description	Initialize timer peripheral based on array in configuration file		

Function name	Timer_Start		
Arguments	Input	Channel	Enumeration
		It's Channel number	
		Value	U16
		Define initial vlue	
	Output	None	
	Input/Output	None	
Return	E_OK	0	
	E_NOK	1	
Description	Responsible for starting timer		

Name:	Timer_Channels		
Type:	Enumeration		
Range	Channel0	0	Description
	Channel1	1	Description
	Channel2	2	Description
Description:	Define Number of channels		

Function name	Timer_Start		
Arguments	Input	Channel	Enumeration
		It's Channel number	
		Value	U16
		Define initial vlue	
	Output	None	
	Input/Output	None	
Return	E_OK	0	
	E_NOK	1	
Description	Responsible for stopping timer		

3- PWM Module:

4- Function name	Pwm_Init		
Arguments	Input	None	None
	Output	None	None
	Input/Output	None	
Return	E_OK	0	
	E_NOK	1	
Description	Initialize timer peripheral based on array in configuration file		

Function name	pwm_Start()		
Arguments	Input	Pin number	Enumeration
		Show the number of pin to write value on it.	
		value	U8
		It's the value written to pin.	
	Output	void	
	Input/Output	void	
Return	E_OK	0	
	E_NOK	1	
Description	Write value on the pin.		

Function name	pwm_Stop()		
Arguments	Input	Pin Number	Enumeration
		Show the number of pin to disconnect it from pwm channel.	
	Output	void	
	Input/Output	void	
Return	E_OK	0	
	E_NOK	1	
Description	Stop PWM Channel To Disconnect Pin.		

1-Motor Module:

Function name	Motor_Init()		
Arguments	Input	Array of Pin numbers	U8 *
		Show the number of pins for H bridge interface.	
		Array of Pin numbers	U8 *
		Show the number of pins for pwm.	
	Output	void	
	Input/Output	void	
Return	E_OK	0	
	E_NOK	1	
Description	Initialize H bridge pins and pwm pins.		

Function name	Motor_Start()		
Arguments	Input	Period	U16
		Number of milliseconds, the timer counts and sets the flag.	
	Output	void	
	Input/Output	void	
Return	E_OK	0	
	E_NOK	1	
Description	Determining direction and speed based on state machine and time elapsed.		

Function name	Motor_Stop()		
Arguments	Input	Array of Pin numbers	U8 *
		Show the number of pins for H bridge interface.	
		Array of Pin numbers	U8 *
		Show the number of pins for pwm.	
	Output	void	
	Input/Output	void	
Return	E_OK	0	
	E_NOK	1	
Description	Clear pwm pins and reset H bridge pins.		

2-Robot Module:

Function name	Robot_Init()		
	Inout	void	
	Output	void	
	Input/Output	void	
Return	E_OK	0	
	E_NOK	1	
Description	Use Motor_Init() to Initialize Robot Motors, Pins defined in configuration file.		

Function name	Robot_Update()		
Arguments	Input	Period	U16
		Number of milliseconds, the timer counts and sets the flag.	
	Output	void	
	Input/Output	void	
Return	E_OK	0	
	E_NOK	1	
Description	Use Motor_Start() to Clear pwm pins and reset H bridge pins.		

Function name	Robot_Start()		
	Inout	void	
	Output	void	
	Input/Output	void	
Return	E_OK	0	
	E_NOK	1	
Description	Put Robot in initial value, Pins defined in configuration file.		

Function name	Robot_Stop()		
	Inout	void	
	Output	void	
	Input/Output	void	
Return	E_OK	0	
	E_NOK	1	
Description	Use Motor_Stop() to Initialize Robot Motors, Pins defined in configuration file.		

3-Lcd Module:

Function name	Lcd_Init()		
Arguments	Input	Array of pins	U8
		Pins used by lcd to interface with Dio.	
	Output	void	
	Input/Output	void	
Return	E_OK	0	
	E_NOK	1	
Description	Initialize the pins.		

Function name	Lcd_Display()		
Arguments	Input	Array of pins	U8
		Pins used by lcd to interface with Dio.	
		string	U8 *
		It's the string written on lcd.	
	Output	void	
	Input/Output	void	
Return	E_OK	0	
	E_NOK	1	
Description	Display string on lcd		