2019

Sprints

Ahmed Wael

[STATIC DESIGN]

Microcontroller1 static design for architecture layers

Dio Driver

Function name	U8 Dio_init(void)		
Arguments	Name	Type	Description
I/P	-	-	-
O/P	-	-	-
I/O	-	-	-
Return	Function has a return u8, which is an unsigned char returning the status of function for checking.		
Description	Function Dio_init is used to initialize the Dio driver with the configurations we used and all the configurations are pre configurations. Function returning character and having no arguments.		

Function name	U8 Dio_read(u8 port,u8 pin,u8 *val)		
Arguments	Name	Type	Description
I/P	-port -pin	-unsigned character -unsigned character	-input for choosing the port -input for choosing the pin number
O/P	-val	-pointer to an unsigned character	-output from function to get the read of specific pin.
I/O	-	-	-
Return	Function has a return u8, which is an unsigned char returning the status of function for checking.		
Description	Function Dio_read is used to read a value from a specific pin in a specific port. Function returning character and gets three arguments.		

Dio Driver

Function name	U8 Dio_write(u8 port,u8 pin,u8 val)		
Arguments	Name	Type	Description
I/P	-port -pin -val	-unsigned character -unsigned character -unsigned character	-input for choosing the port -input for choosing the pin number -input value of the pin
O/P	-	-	-
I/O	-	-	-
Return	Function has a return u8, which is an unsigned char returning the status of function for checking.		
Description	Function Dio_write is used to write a value on a specific pin in a specific port, which can be high or low value. Function returning character and gets three arguments.		

Function name	void Dio_Deinit(void)		
Arguments	Name	Type	Description
I/P	-	-	-
O/P	-	-	-
I/O	-	-	-
Return	-		
Description	Function is used to de-initialize the Dio driver.		

Timer Driver

Function name	U8 Timer_init(void)		
Arguments	Name	Type	Description
I/P	-	-	-
O/P	-	-	-
I/O	-	-	-
Return	Function has a return u8, which is an unsigned char returning the status of function for checking.		
Description	Function Timer_init is used to initialize the Timer driver with the configurations we used and all the configurations are pre configurations. Function returning character and having no arguments.		

Function name	U8 Timer_start(u8 ID)		
Arguments	Name	Type	Description
I/P	-ID	-unsigned character	-input used to choose the timer type to be started
O/P	-	-	-
I/O	-	-	-
Return	Function has a return u8, which is an unsigned char returning the status of function for checking.		
Description	Function Timer_start is used to start the counts of the timer with using the arguments to choose which type of a timer is going to be started. Function returns an unsigned character and having one argument.		

Timer Driver

Function name	U8 Timer_stop(u8 ID)		
Arguments	Name	Type	Description
I/P	-ID	-unsigned character	-input used to choose the timer type to be stopped.
O/P	-	-	-
I/O	-	-	-
Return	Function has a return u8, which is an unsigned char returning the status of function for checking.		
Description	Function Timer_stop is used to stop the counts of the time with using the arguments to choose which type of a timer is going to be stopped. Function returns an unsigned character and having one argument.		

Function name	void Timer_count(u16 delay)		
Arguments	Name	Type	Description
I/P	-delay	-unsigned short	-input used to enter the delay of time wanted by the timer
O/P	-	-	-
I/O	-	-	-
Return	-		
Description	Function Timer_count is used to count the time with the configurations we used in Timer driver and all the configurations are pre configurations. Function returning void and having one argument.		

Timer Driver

Function name	void Timer_Deinit(void)		
Arguments	Name	Type	Description
I/P	-	-	-
O/P	-	-	-
I/O	-	-	-
Return	-		
Description	Function is used to de-initialize the Timer driver.		

SPI Driver

Function name	U8 SPI_init(u8 type)		
Arguments	Name	Type	Description
I/P	-type	-unsigned character	-input to function to detect if it was a master or slave
O/P	-	-	-
I/O	-	-	-
Return Description	Function has a return u8, which is an unsigned char returning the status of function for checking.		
	Function SPI_init is used to initialize the SPI peripheral whichever it was a master or slave which is known by the argument. Function returning an unsigned character and having one argument.		

Function name	U8 SPI_sendData(const u8 data)		
Arguments	Name	Type	Description
I/P	-data	-constant unsigned character	-constant variable carrying the data needs to be sent
O/P	-	-	-
I/O	-	-	-
Return Description	Function has a return u8, which is an unsigned char returning the status of function for checking		
	Function SPI_sendData is used to send data to another device by SPI protocol. Function returning unsigned character and having one argument.		

SPI Driver

Function name	U8 SPI_sendString(conts u8 *data)		
Arguments	Name	Type	Description
I/P	-data	-pointer to a constant unsigned character	-pointer carrying the data to be sent on SPI
O/P	-	-	-
I/O	-	-	-
Return	Function has a return u8, which is an unsigned char returning the status of function for checking.		
Description	Function SPI_sendString is used to send a string using the SPI_snedData function. Function returning an unsigned character and having one argument.		

Function name	U8 SPI_receiveData(u8 *data)		
Arguments	Name	Type	Description
I/P	-	-	-
O/P	-data	-pointer to an unsigned character	-pointer carrying the address where the data will be received
I/O	-	-	-
Return	Function has a return u8, which is an unsigned char returning the status of function for checking		
Description	Function SPI_recieveData is used to receive data from another device by SPI protocol. Function returning unsigned character and having one argument.		

SPI Driver

Function name	U8 SPI_receiveString(u8 *data)		
Arguments	Name	Type	Description
I/P	-data	-pointer to an unsigned character	-pointer carrying the address where the string will be received
O/P	-	-	-
I/O	-	-	-
Return	Function has a return u8, which is an unsigned char returning the status of function for checking.		
Description	Function SPI_receiveString is used to receive a string using the SPI_receiveData function. Function returning an unsigned character and having one argument.		

Function name	void SPI_Deinit(void)		
Arguments	Name	Type	Description
I/P	-	-	-
O/P	-	-	-
I/O	-	-	-
Return	-		
Description	Function SPI_Deinit is used to de-initialize the SPI protocol. Function returning void and having no arguments.		

UART Driver

Function name	U8 UART_init(void)		
Arguments	Name	Type	Description
I/P	-	-	-
O/P	-	-	-
I/O	-	-	-
Return	Function has a return u8, which is an unsigned char returning the status of function for checking.		
Description	Function UART_init is used to initialize the UART module with the configurations. Function returning an unsigned character and having no arguments.		

Function name	U8 UART_sendData(const u8 data)		
Arguments	Name	Type	Description
I/P	-data	-constant unsigned character	-constant variable carrying the data needs to be sent
O/P	-	-	-
I/O	-	-	-
Return	Function has a return u8, which is an unsigned char returning the status of function for checking		
Description	Function UART_sendData is used to send data to another device by UART protocol. Function returning unsigned character and having one argument.		

UART Driver

Function name	U8 UART_sendString(const u8 *data)		
Arguments	Name	Type	Description
I/P	-data	-pointer to a constant unsigned character	-pointer carrying the data to be sent on UART
O/P	-	-	-
I/O	-	-	-
Return	Function has a return u8, which is an unsigned char returning the status of function for checking.		
Description	Function UART_sendString is used to send a string using the UART_sendData function. Function returning an unsigned character and having one argument.		

Function name	U8 UART_receiveData(u8 *data)		
Arguments	Name	Type	Description
I/P	-	-	-
O/P	-data	-pointer to an unsigned character	-pointer carrying the address where the data will be received
I/O	-	-	-
Return	Function has a return u8, which is an unsigned char returning the status of function for checking		
Description	Function UART_recieveData is used to receive data from another device by UART protocol. Function returning unsigned character and having one argument.		

UART Driver

Function name	U8 UART_receiveString(u8 *data)		
Arguments	Name	Type	Description
I/P	-	-	-
O/P	-data	-pointer to an unsigned character	-pointer carrying the address where the string will be received
I/O	-	-	-
Return	Function has a return u8, which is an unsigned char returning the status of function for checking.		
Description	Function UART_receiveString is used to receive a string using the UART_receiveData function. Function returning an unsigned character and having one argument.		

Function name	void UART_Deinit(void)		
Arguments	Name	Type	Description
I/P	-	-	-
O/P	-	-	-
I/O	-	-	-
Return	-		
Description	Function UART_Deinit is used to de-initialize the UART protocol. Function returning void and having no arguments.		

Communication Manager Driver

Function name	U8 CommManager_init(u8 type)		
Arguments	Name	Type	Description
I/P	-type	-unsigned character	-input to make the manager specify which protocol will take
O/P	-	-	-
I/O	-	-	-
Return	Function has a return u8, which is an unsigned char returning the status of function for checking.		
Description	Function CommManage_init is used to initialize the manager with the specific protocol and functions. Function returning an unsigned character and having one argument.		

Function name	U8 sendData(const u8 data)		
Arguments	Name	Type	Description
I/P	-data	-constant unsigned character	-constant variable carrying the data needs to be sent
O/P	-	-	-
I/O	-	-	-
Return	Function has a return u8, which is an unsigned char returning the status of function for checking.		
Description	Function sendData is used to send a byte to devices. Function returning an unsigned character and having one argument.		

Communication Manager Driver

Function name	U8 sendString(const u8 *data)		
Arguments	Name	Type	Description
I/P	-data	-pointer to a constant unsigned character	-pointer carrying the address of data needs to be sent on SPI
O/P	-	-	-
I/O	-	-	-
Return	Function has a return u8, which is an unsigned char returning the status of function for checking.		
Description	Function sendString is used to send a string to another device. Function returning an unsigned character and having one argument.		

Function name	U8 receiveData(u8 *data)		
Arguments	Name	Type	Description
I/P	-	-	-
O/P	-data	-pointer to an unsigned character	- pointer carrying the address of data needs to be received
I/O	-	-	-
Return	Function has a return u8, which is an unsigned char returning the status of function for checking.		
Description	Function receiveData is used to receive a byte from devices. Function returning an unsigned character and having one argument.		

Communication Manager Driver

Function name	U8 receiveString(u8 *data)		
Arguments	Name	Type	Description
I/P	-data	-pointer to an unsigned character	-pointer carrying the address of data to be received by SPI
O/P	-	-	-
I/O	-	-	-
Return	Function has a return u8, which is an unsigned char returning the status of function for checking.		
Description	Function receiveString is used to receive a string from another device. Function returning an unsigned character and having one argument.		

Function name	void CommManager_Deinit (u8 type)		
Arguments	Name	Type	Description
I/P	-type	-unsigned character	-input used to specify which protocol is going to be de-inialized
O/P	-	-	-
I/O	-	-	-
Return	-		
Description	Function CommManager_Deinit is used to de-initialize a specific protocol of communications. Function returning void and having one argument.		