UART Driver for AVR Microcontrollers

Version: 1st **Date: 1/11/2023**

- **API specification**

1.1 Type definitions

Name:	UART_BitData
Type:	Enum
Element:	*FIVE_BIT_MODE* , *SIX_BIT_MODE* = 2, *SEVEN_BIT_MODE* = 4, *EIGHT_BIT_MODE* = 6
Description:	These are the return which num of bit mode you use

Name:	UART_Parity
Type:	Enum
Element:	*DISABLED_PARITY* ,*EVEN_PARITY* = 32 , *ODD_PARITY* = 48
Description:	These are the return which parity mode you use

Name:	UART_StopBit

Type:	Enum
Element:	*ONE_STOP_BIT* , *TWO_STOP_BIT* = 8
Description:	These are the return which num of stop bit mode you use

Name:	UART_ConfigType
Type:	struct
Element:	UART_BitData bit_data; UART_Parity parity; UART_StopBit stop_bit; uint32 baud_rate;
Description:	These are uart config (bit data,parity,stop_bit,baud_rate)

1.2 Function definitions

Service name:	UART_init
Syntax:	void UART_init(const UART_ConfigType * Config_Ptr)
Parameters (in):	const UART_ConfigType * Config_Ptr
Parameters (in/out):	NONE
Parameters (out):	NONE
Return value:	NONE

Description:	Functional responsible for Initialize the UART device by: * 1. Setup the Frame format like number of data bits, parity bit type and number of stop bits. * 2. Enable the UART. * 3. Setup the UART baud rate.
NUM:	

Service name:	UART_sendByte
Syntax:	void UART_sendByte(const uint8 data)
Parameters (in):	const uint8 data
Parameters (in/out):	None
Parameters (out):	None
Return value:	None
Description:	Functional responsible for send byte to another UART device.
NUM:	

Service name:	UART_recieveByte
Syntax:	uint8 UART_recieveByte(void)

Parameters (in):	NONE
Parameters (in/out):	None
Parameters (out):	UINT8
Return value:	UDR
Description:	Functional responsible for receive byte from another UART device.
NUM:	

Service name:	UART_sendString
Syntax:	void UART_sendString(const uint8 *Str);
Parameters (in):	const uint8 *str
Parameters (in/out):	None
Parameters (out):	None
Return value:	None
Description:	Send the required string through UART to the other UART device.
NUM:	

Service name:	UART_receiveString
Syntax:	void UART_receiveString(uint8 *Str)
Parameters (in):	uint8 *Str
Parameters (in/out):	None
Parameters (out):	None
Return value:	None
Description:	Receive the required string until the ' ' symbol through UART from the other UART device.
NUM:	