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Overview

Thanks for considering Thirdwayv for your next employment opportunity. This assignment aims to assess your knowledge of fundamental Embedded system principles. There is no single correct answer, and the goal is to explore your approach to this assignment, which will also be used as a discussion subject during the interview process.

The contents of this document should be treated as Confidential. You are expected to prepare the assignment without consulting with other third parties. Please delete any physical copies of this document and the downloaded copy upon completing the task.

This assignment is meant to evaluate candidates of various levels of expertise. If you could not complete all tasks due to lack of time or experience in particular areas of the assignment, we still encourage you to submit the deliverable you can prepare. However, it may be incomplete, along with notes about what you could not complete. It will help us understand where you can best fit into our team and prepare for the live technical interview.

The candidate might consider that any of the details in this document contain ambiguous or incomplete requirements. In that case, the candidate shall use their best judgment to fill in the gaps with assumptions and interpretations, and those assumptions should be documented within the code where appropriate.

Task

kindly check the attached two files to the email "uart_msg_handler.c" and "app.c". It's a representation of a UART communication protocol between TWI devices.

The UART Hal "uart.c" calls the callback function "uart_recevied_msg_cb()" in the "uart_msg_handler.c" each time it receives a character. The "uart_recevied_msg_cb()" checks if the message is valid and then calls the callback function "print_msg_cb()" in the "app.c". Finally, The "print_msg_cb()" print the received message.

Your task is to:
Make sure to follow the TODO comments for the detailed steps of the task.
You will need to:

- Implement "uart_msg_handler.h" file.
- Implement a code to check whether the received message is valid inside "uart_received_msg_cb()".
- Define the 'tpf_uart_msg_handler_recv_cb' type.
- Implement the callback from "uart_msg_handler.c" to "app.c".

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