EN - 2160 Electronic Design Realization

Expectations of Group Formation



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1. Introduction

During our group formation activity, we had a detailed discussion on several aspects related to the integration and collaboration required to develop our product. We shared our thoughts and ideas on how we can work together to create a comprehensive industrial solution that addresses a particular problem. The primary focus of our discussion was on identifying the key areas of collaboration and integration that can result in a successful product outcome. We explored various strategies and techniques that could help us integrate our products seamlessly, and we also discussed the importance of effective communication and cooperation among team members. Overall, it was a fruitful discussion, and everyone contributed their unique perspectives to the conversation.

* Identify a Suitable Design Model:

In this section, we'll discuss the choice of design model for the collaborative project. We'll explain why the Systems Engineering approach is suitable for managing the complexity of integrating multiple subsystems and ensuring the overall system meets the desired requirements and objectives. This aligns with the learning outcome of identifying a suitable design model for a given problem.

* Design Testable PCBs Complying with Industry Standards:

Here, we'll delve into the process of designing PCBs that are not only functional but also testable and compliant with industry standards. We'll discuss considerations such as component placement, signal routing, and grounding techniques to ensure optimal PCB performance. This aligns with the learning outcome of designing PCBs complying with industry standards.

* Explain Testing Methodologies Used in Electronic Manufacturing:

In this section, we'll outline the testing methodologies employed during the electronic manufacturing process. We'll discuss functional testing, environmental testing, and reliability testing, among others, and explain their importance in ensuring product quality and reliability. This aligns with the learning outcome of explaining testing methodologies used in electronic manufacturing.

* Design Product Enclosures Complying with Industry Standards:

Here, we'll discuss the design considerations for product enclosures, focusing on factors such as material selection, manufacturability, and compliance with industry standards for safety and environmental protection. We'll ensure that the final enclosure design not only meets functional requirements but also complies with relevant regulations. This aligns with the learning outcome of designing product enclosures complying with industry standards.

* Prepare Proper Documentation for Electronic Design:

In this section, we'll emphasize the importance of comprehensive documentation throughout the design process. We'll discuss the types of documentation required, such as design specifications, test procedures, and integration guidelines, and explain how proper documentation ensures transparency and facilitates knowledge transfer between team members. This aligns with the learning outcome of preparing proper documentation for electronic design.

* Apply the Knowledge Gained to a Commercial Design Project Resulting in a Working Prototype:

Finally, in this section, we'll tie everything together by highlighting how the collaborative efforts of both teams resulted in the development of a working prototype of the integrated battery management system with profiling capabilities. We'll emphasize how the application of knowledge gained throughout the course enables us to successfully navigate the design process and achieve the desired outcome. This aligns with the learning outcome of applying knowledge to a commercial design project resulting in a working prototype.

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