



**UNIVERSITI TEKNOLOGI MARA CAWANGAN
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MEC299

**DESIGN AND FABRICATION OF LAMP
STATIONERY RACK**

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SEM MARCH AUGUST 2022

Abstract

The notion of product creation is thriving daily in the realm of modern technology in an effort to satisfy college students. Products with several features have significantly altered the modern world. These goods serve as both an excellent indicator of the advancement of product development and a dependable tool for making college students daily lives easier. Today, college students are more inclined to purchase a product with several features in addition to its attractive appearance. Considering college students aspiration as a focal point, this paper will develop a concept of multipurpose lamp stationery rack. The improved lamp stationery rack will provide a facility of certain number of products. This paper shows the construction of a multipurpose lamp stationery rack by gathering knowledge from college students and expert consultations. Various product development tools have been used to implement the desired concepts. Finally, an economic analysis has been shown to justify the feasibility of the product in production

Keywords: Multi-featured product, lamp stationery rack, college student needs, product design and development, concept evaluation.

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CHAPTER 1

INTRODUCTION

1.1 Background of Study

Product development refers to the process of adaptation of the existing product by modifying its present feature or construction of a completely new product in order to meet changing college students need needs. It consists of the activities involving identification of market opportunities, analysis of technical feasibilities, and construction of manufacturing plan and validation of the plan in present market condition [1]. The prime objective of product development is to expand its market share considering all the college students' requirement. It is necessary for a product not only to fulfil college students need but also to cope up with target market specification.



Figure 1.1: Common study desk

1.2 Problem Statement

Most college students need a lamp stationery rack on a regular basis. Previously, industries were solely concerned with their visual appearance. However, in addition to its attractive appearance, multifunctional usage of a light has become a critical issue in recent years. College students today are more inclined to hold a device with several functionalities in one hand. Also, cost is a major element in this purpose. Our prime concern is to build a multipurpose lamp stationery rack in an optimum cost. The lamp stationery rack able to fold and easier too carrying it.

1.3 Objective

There are two objectives for this project:

- i) To design a lamp stationery rack using SolidWorks application.
- ii) To fabricate a develop lamp stationery rack using 3D printing machine.

1.4 Scope of Work

The scope of the project as limited to the below equipment, parameter and materials:

- i) Software that has been used to design the lamp stationery rack is SOLIDWORK and TINKERCAD for illustrate the circuit easier and detail.
- ii) Fabrication process will use all necessary manufacturing method including 3D printing.
- iii) Material that has been used to fabricate this lamp stationery rack are nylon and TPU (thermoplastic polyurethane).
- iv) The product target is too easier the college students.