

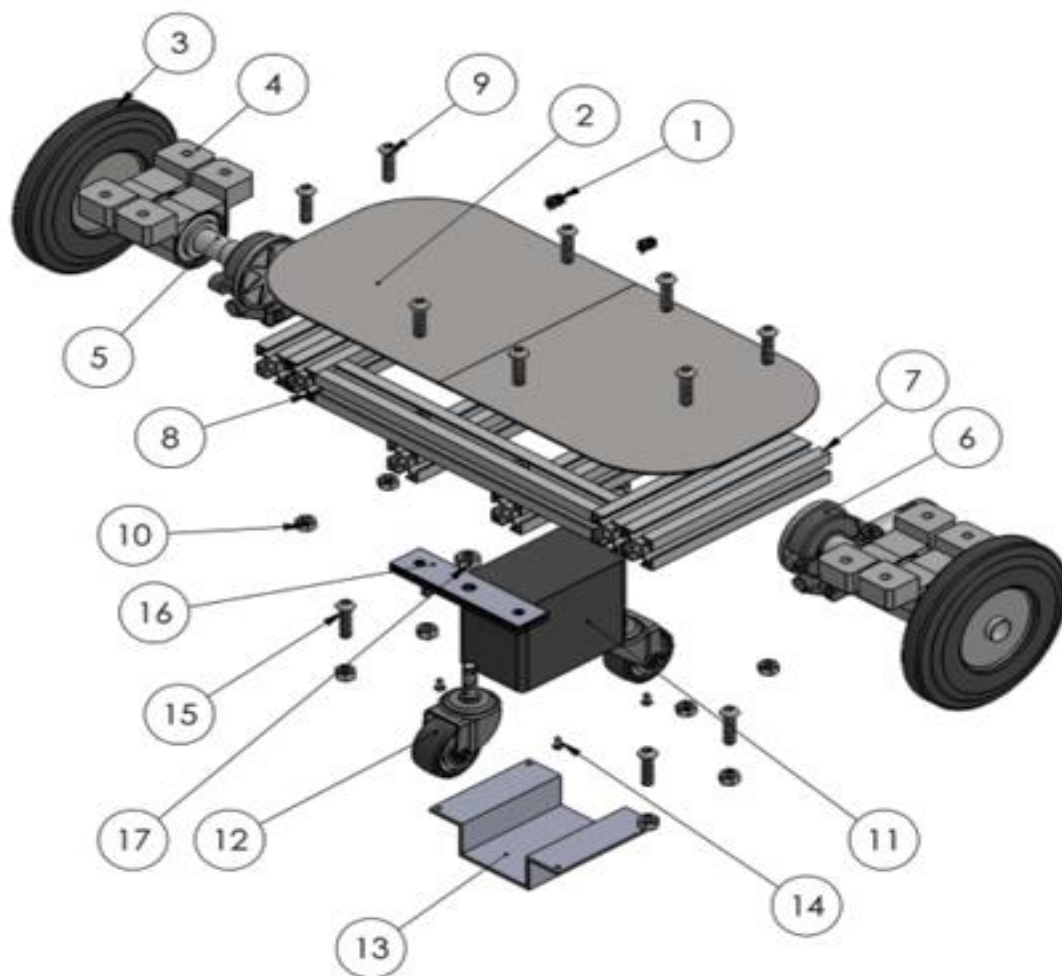
# PROTOTYPE DESIGN COLLECTION

## SERIES 2



# Prototype Design Collection

## Series 2



AHMAD NAJMIE RUSLI

UNIVERSITI TEKNOLOGI MARA CAWANGAN JOHOR  
KAMPUS PASIR GUDANG

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# FOREWORD

This digital book on Prototype Design Collection Series 2 (PDC Series 2) is published as a reference design for mechanical engineering students. The designs presented experience a few phases of analysis before fabrication of prototype. Each project summarises the project description, prototype, figures, and design parameter. The design products vary in tools or equipment for household, workshop, entrepreneur, etc. Suggested material and detail of prototype dimension are also mentioned in this book.

It is hoped that this book will assist the students to have more ideas on innovation design products in the future.

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## CHAPTER 7

### Design and Fabricate of Portable and Multifunction Shoe Rack

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#### PROJECT DESCRIPTION



Shoe racks are commonly used furniture storage units available in the market, featuring various designs. Previous studies indicate that most existing products are in good working condition, providing space or seating but lacking portability. However, there is a growing demand for shoe racks that offer multiple functions. This project aims to address this need by introducing innovative ideas for foldable and multi-purpose shelves. The primary objective is to develop versatile and portable shoe racks suitable for various users, with a particular focus on students living in hostels. The project aims to utilize cost-effective and readily available materials that can be efficiently manufactured and supervised. In summary, the product is designed to help customers organize their shoes effectively and exceed their expectations, providing a delightful user experience.

**Keywords:** *Shoe racks, Foldable and multi-purpose shelves, Portable and versatile*

#### PROTOTYPE



**DESIGN PARAMETER**

REVISION RECORD				
 FAKULTI KEJURUTERAAN MEKANIKAL (FKM) UITM JOHOR KAMPUS PASIR GUDANG COURSE NAME : MEC300 FINAL YEAR PROJECT 2 GROUP : J4EM1105L				
APPROVED :		CHECKED :	DRAW : 10/2/2023	
DRAWING TITLE :				
PART NAME : ASSEMBLY				
PART NO :				
REV 0	SCALE 1:8	PROJECTION 	WEIGHT	SHEET 1/12

ITEM NO.	PART NUMBER	DESCRIPTION	QTY
1	FRAME	1.2 mm thickness (345 x 288)mm	5
2	CUSHION	1.2 mm thickness (345 x 288)mm	1
3	LONG STAND	1.2 mm thickness (245 length)	6
4	CASTER WHEEL	-	4
5	SHORT STAND	1.2 thickness (150 mm length)	4

FAKULTI KEJURUTERAAN MEKANIKAL UITM PASIR GUDANG	
COURSE NAME	MEC300 : FYP 2
GROUP	J4EM1105L
DRAWING TITLE	PORTABLE AND MULTIFUNCTION SHOE RACK