

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 45

Design and Fabrication of Garden Storage Tool Cart

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PROJECT DESCRIPTION

"Design and Fabrication of Garden Storage Tool Cart" is the title of this project. The goal of this project is to assist people who enjoy gardening in their backyards and small gardens in reducing the burden and back pain while gardening. This is because the main issue that these people face is that they use more energy, which can cause serious back pain, especially for the elderly who enjoy gardening. The project's objective is to fabricate and modify an existing storage box into a rolling garden storage box with a seater. Following that, determine the maximum applied load, focusing on a seater that can be accommodated by the storage gardening tool cart. This project will also include design, fabrication, and analysis. The drawings in this project are done using the 3D engineering software "Solidworks 2019." In this project, some calculations use the Strength of Material equation to calculate bending stress and force.

Keywords: Storage box, Garden, Seater, Trolley

PROTOTYPE



DESIGN PARAMETER

