

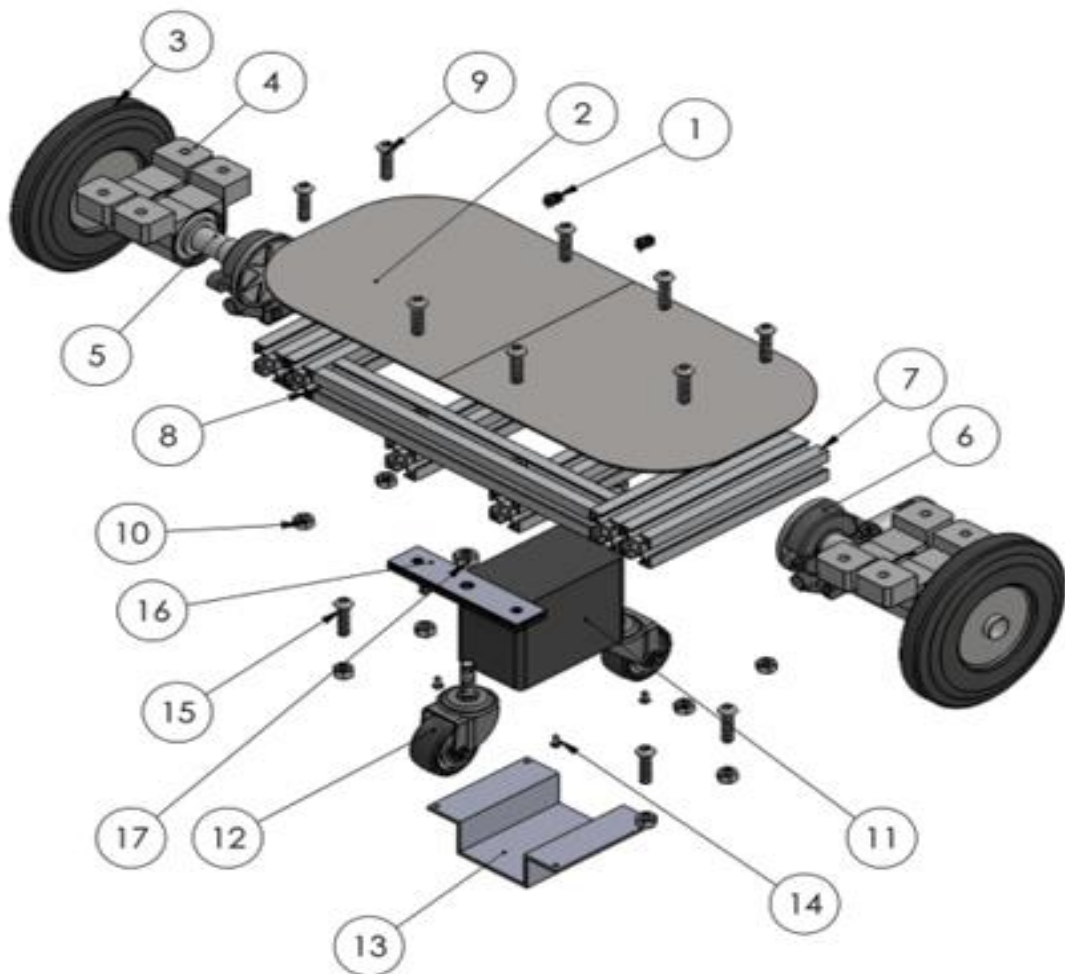
PROTOTYPE DESIGN COLLECTION

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 56

Coconut and Durian Skin Peelers Machine

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PROJECT DESCRIPTION

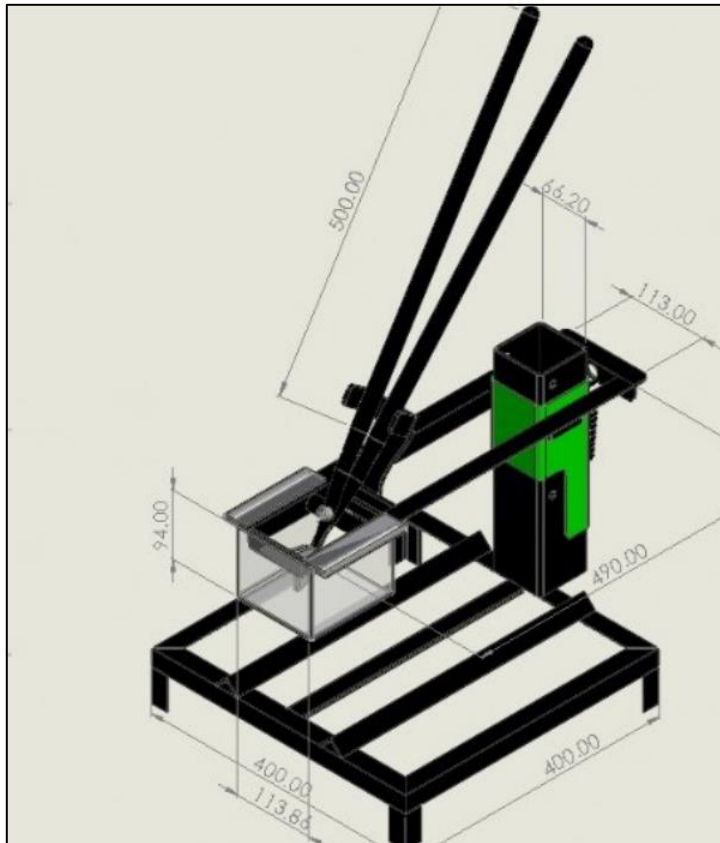
Durian and coconut are widely recognized as popular fruits in Malaysia, but peeling their skins can be a time-consuming task. Recognizing the challenges faced in peeling coconut and durian skins, this project aims to fabricate a machine specifically designed to peel off the skin easily and safely, surpassing the traditional methods. The primary focus of this project is to design, analyze, and fabricate a coconut and durian skin peeler machine that prioritizes safety, user-friendliness, and energy efficiency. The product incorporates a lever mechanism, consisting of a spring and an L-shaped stainless-steel component. It has compact dimensions of 400mm x 400mm x 300mm and is lightweight, making it portable. In conclusion, the fabrication of this product has been successfully accomplished, and it performs effectively. Results from product testing indicate that peeling the skin of a coconut requires at least 100N of human strength using this machine, taking approximately 150 seconds. Similarly, peeling the skin of a durian necessitates a minimum of 120N of human strength within approximately 180 seconds. This coconut and durian skin peeler machine is expected to benefit lower-income farmers and families, as it will be available at an affordable price.

Keywords: *Durian, Coconut, Peeler*

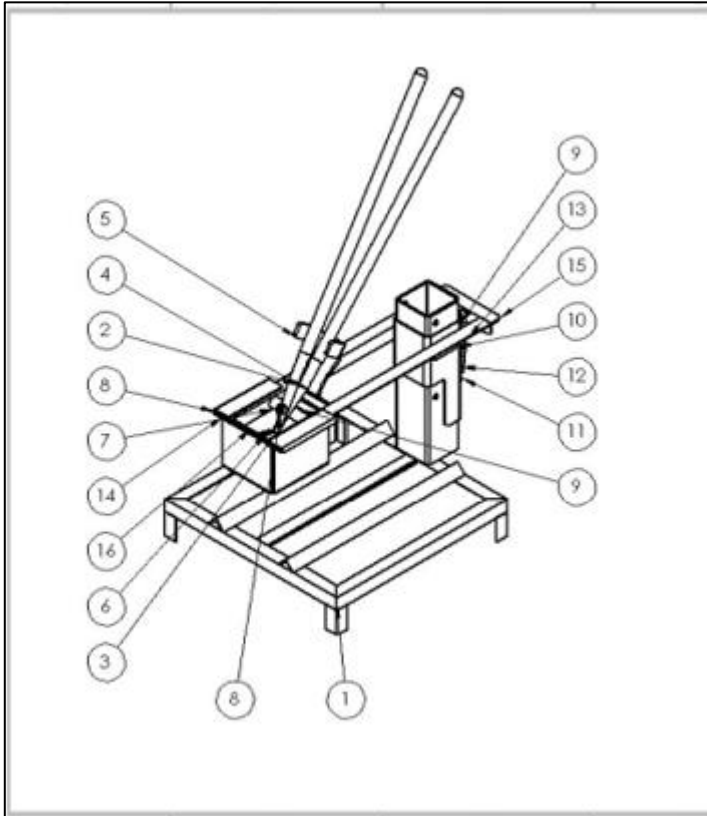
PROTOTYPE



DESIGN PARAMETER



FAKULTI KEJURUTERAAN MEKANIKAL UITM JOHOR KAMPUS PASIR GUDANG	
APPROVED:	CHECKED:
NAME: AKMAL DANIAL BIN MOHD ASRI	
STUDENT ID: 2020600828	
CLASS: J4EM1105H	
DRAWING TITLE: COCONUT AND DURIAN PEELER	
SCALE: 1:5	SHEET 1 OF 10



ITEM NO.	PART NUMBER	QTY.
1	structure	1
2	angle bar 7	1
3	handle	2
4	hang	1
5	hang 2	1
6	knife	2
7	nut	1
8	cover	1
9	stand cover	1
10	flork	1
11	spring bracket	1
12	spring	1
13	angle bar 4	1
14	angle bar 5	1
15	angle bar 6	1
16	flat bar 2	1

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CLASS: J4EM1104H	
DRAWING TITLE: COCONUT AND DURIAN PEELER	
SCALE 1:3	SHEET 1 OF 1