

UNIVERSITI TEKNOLOGI MARA

**DESIGN AND FABRICATION OF
KNIFE SHARPENER**

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ABSTRACT

Sharpening a knife nowadays can be a difficult and time-consuming task. People are currently employing the old way, such as slicing the blade with the sharpener stone. This conventional method necessitates a cyclic movement of the hand with added pressure. This action requires a lot of energy from the user all the time. The continual cyclic procedure occasionally resulted in damage to the user. Aside from that, users have difficulty determining whether the knife is sharp enough. Because of the problems mentioned, the goal of this project is to address all of them. This project will concentrate on developing a product that will ease the process, reduce the danger of injuries, and ensure that the knife is sharp enough after the sharpening process. Data from the user will be collected and analyzed in this project. The information gathered will be used to build the Product Design Specification (PDS). In terms of selecting the conceptual design, I used a Pugh chart to compare the concept designs generated based on several parameters. Each design will be rated based on numerous criteria, and the total number of points earned will determine the best design for this project. The chosen concept design will then be produced in Solidworks to be utilized as the final design. Later, the SolidWork analysis was used to the final design to forecast the product's real-world behaviour. Following this was the most essential step, fabrication, which is where the product production process takes place. Finally, the finished product must be tested to ensure that everything works as it should. It is expected that the device will be strong and safe, and that it will effectively assist the user in sharpening bl

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This project has been a significant learning experience, and I am grateful for the opportunity to work on it. I hope that the findings and outcomes of this project will be of value to the academic community and beyond. Thank you all for your support and encouragement.

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CHAPTER ONE INTRODUCTION

1.1 Background of Study

Knife sharpeners involve understanding the materials knives are made of. They also involve understanding the various types of tools available to sharpen knives, and the science behind how they work. One key aspect of the study is the metallurgy of knives, which affects the sharpness and durability of the blade. Sharpening's impact on the blade's edge and overall lifespan is also a crucial consideration. Additionally, studies might use honing rods, whetstones, and electric sharpeners as sharpeners. It is very crucial to understand the various techniques required to sharpen knives and how each type of sharpener affects the blade. The study of knife sharpening also involves understanding the user's needs. This includes the type of knife used, the level of expertise, and the frequency of use.

1.2 Problem Statement

- Dull knife is dangerous.
- Cutting food become slower.
- Hard for butcher to slaughter the animal.

1.3 Objectives

The main objectives of this project are:

- a) ...Design my Knife Sharpener in SolidWorks
- b) ...Fabricating my design of Knife Sharpener

1.4 Scope of Study