# CIVIL ENGINEERING DEPARTMENT WOOD BASE TECHNOLOGY PROGRAMME DCW 50243 WOOD-BASED TECHNOLOGY PROJECT 

## CABINET FOR CAT LOVER

## GROUP 7

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## CIVIL ENGINEERING DEPARTMENT

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#### Abstract

Cabinet for Cat Lover is an innovation of the existing cat cage to a multi-functional cabinet. The objective of this project was to produce a unit cabinet for cat lovers. In addition, several research scopes have been set in this project, namely finding problems, designing tables that have multiple functions, and being able to solve problems. All of these are set to solve some problems that arise such as no appropriate place for a cat, no place to store cat stuff, and the probability of cats destroying household items is high. The materials for this project also need to have special characteristics such as the use of high-quality wood such as rubber wood, plywood, and MDF. While for the component formation process, methodological studies are used to plan the project production process by using flow charts as a guide for production planning and project testing. As a result, this entire project was successfully produced and was able to provide convenience not only to pet cats but also to cat lovers. Based on these results, the results of the analysis, and discussions that have been carried out, it can be concluded that the Cabinet for Cat Lover has achieved the objectives that have been discussed.


Keywords: Cabinet, Cat Lover, Multi-function


#### Abstract

ABSTRAK

Kabinet untuk Pencinta Kucing ialah inovasi sangkar kucing sedia ada kepada kabinet pelbagai fungsi. Objektif projek ini adalah untuk menghasilkan kabinet unit untuk pencinta kucing. Selain itu, terdapat beberapa skop kajian yang telah ditetapkan dalam projek ini iaitu mencari masalah, mereka bentuk jadual yang mempunyai pelbagai fungsi, dan mampu menyelesaikan masalah. Semua ini ditetapkan untuk menyelesaikan beberapa masalah yang timbul seperti tiada tempat yang sesuai untuk kucing, tiada tempat menyimpan barangan kucing, dan, kebarangkalian kucing memusnahkan barangan rumah adalah tinggi. Bahan untuk projek ini juga perlu mempunyai ciri khas seperti penggunaan kayu yang berkualiti tinggi seperti kayu getah, papan lapis, dan MDF. Manakala bagi proses pembentukan komponen, kajian metodologi digunakan untuk merancang proses penghasilan projek dengan menggunakan carta alir sebagai panduan perancangan pengeluaran dan pengujian projek. Hasilnya, keseluruhan projek ini berjaya dihasilkan dan mampu memberi kemudahan bukan sahaja kepada kucing peliharaan tetapi juga kepada pencinta kucing. Berdasarkan keputusan tersebut, hasil analisis, dan perbincangan yang telah dijalankan, dapat disimpulkan bahawa Kabinet Pencinta Kucing telah mencapai objektif yang telah dibincangkan.


Kata kunci: Kabinet, Pecinta Kucing, Pelbagai fungsi

## CHAPTER 1

## INTRODUCTION

The goal of the study was to improve the functionality of the single-purpose cabinet for flat homes and to address issues like the lack of a suitable area or location for cats to scratch within the home. The market's current cabinets only serve one purpose for a human user. The cabinet in this project will be created as multifunctional furniture to meet the needs of both the owner and the pet.

A case or cupboard with shelves and/or drawers for holding or displaying objects is called a cabinet. While some cabinets are built into walls or linked to them like medicine cabinets, others are freestanding. Usually, cabinets are built of coated steel (popular for medicine cabinets), synthetic materials, or solid wood with veneers or other man-made surfaces. Commercial-grade cabinets often feature melamineparticleboard substrates and are finished with Wilsonart or Formica, a high-pressure decorative laminate.

By offering a haven in a calm area of the house, owners who wish the cat to avoid the bed and other furnishings might persuade the cat to sleep elsewhere. A cat has access to all the basics, including a bed, food, water, a litter box, a scratching post, a perch, and a toy, in a refuge, which is a section of the house that is less frequently used or out of the way.

The versatile cabinet is a contemporary trend that combines several clever elements to offer the most convenience in compact areas. People are paying attention to the many distinctively designed cabinets that are currently available on the market. A piece of furniture for the interior with multiple uses is called a multipurpose cabinet. Unlike a straightforward cabinet with a flat surface, a multipurpose cabinet includes many features.

### 1.1 Problem statement

Cats prefer to rest in an environment where they feel safe and comfortable since they are most vulnerable while they are asleep. The best places to relax are often calm, cozy spots where the cat can hide from the rest of the household. The cat may prefer to sleep in her cat tree, on your bed or sofa, or out of the way by sleeping on top of the kitchen cabinets or beneath the bed. To avoid cats sleeping in the corners of the house, a cat needs a proper area to relax.

Second, the owner had not created a proper spot for the cat to scratch. Cats pull their front claws downward, either on a horizontal or vertical surface, to scratch. Stropping is the process of releasing the claw's outer covering and removing it to show a newly sharpened surface. This explains why cat claws can be found on mattresses and sofas.

Cats play a lot to get their owners' attention. The market is filled with cat toys. The typical cupboard is ill-organized and unsuitable for storing cat toys.

### 1.2 Signification of the Study

The goal of this research is to create a multipurpose cabinet for cat lovers. The information gathered from this study includes a wide range of topics, including cat behavior, standards, and the multipurpose idea. The results of this study are utilized to design multifunctional and well-organized cabinets that will meet the needs of the owner and domestic cat.

### 1.3 Objectives

The objectives of this project are:
I. to produce a one-unit cabinet for cat lovers.

### 1.4 Scope of the Study

This study will be implemented at the Polytechnic Sultan Salahuddin Abdul Aziz Shah Woodworking Workshop. The purpose cabinet design will include components of the carcass, shelve, doors, drawer, and leg. The purpose cabinet also has two moveable part that is cabinet door and a drawer. A combination of wood base materials will be used such as solid wood and wood composite to complete this project.

### 1.5 Chapter of Summary

The concepts that serve as the project's foundation and direction have been clarified and expanded upon in this chapter. The project's problem statement, project objective, project importance, and project scope are all covered in this chapter's first section. has been expanded upon. Based on the difficulties that have been considered, the project's goals are also established. To make this project realistic to complete and to ensure that it stays true to its original goals and objectives, it is also given constraints. Finally, it is envisaged that many parties will gain from this project, particularly the students and instructors from the Department of Civil Engineering during the practical work

This study will be implemented at the Polytechnic Sultan Salahuddin Abdul Aziz Shah Woodworking Workshop. The purpose cabinet design will include components of the carcass, shelve, doors, drawer, and leg. The purpose cabinet also has two moveable part that is cabinet door and a drawer. A combination of wood base materials will be used such as solid wood and wood composite to complete this project.

## CHAPTER 2 <br> LITERATURE REVIEW

### 2.1 Introduction

For many years, wood has been utilized to create furniture. Furniture constructed of materials like steel, aluminum, glass, and plastic started to appear with the industrial revolution. Wood is unquestionably still the material of choice when producing furniture, even though these materials have revolutionized the furniture industry. In addition to being durable, trustworthy, adaptable, and simple to use, it is also abundant and renewable.

Wood is not only indestructible; it is also timeless. Today's furniture manufacturing sector also offers engineered wood as an option. Engineered wood is a composite material created by joining sheets, particles, fibers, veneers, or thin wood boards with adhesives to create a variety of goods including plywood, fiberboard, block board, and so on. Affordable, simple to make, and durable furniture can be found constructed of engineered wood.

### 2.2 Rubberwood



Figure 2.1 Show pictures of rubberwood.
(Source: https://www.homedit.com/rubberwood/)

The Amazon rainforest is the natural habitat of the hardwood species known as rubberwood. Rubber trees, which are usually found in areas with low elevations, are the source of this wood. Furniture and other wood products are frequently made from this type of wood. It is understandable why rubber trees should not be cultivated close to dwellings given their propensity to grow as tall as 100 feet and develop large, powerful roots. The Pará rubber tree, often from trees grown in rubber plantations, yields rubberwood, a medium-density, light-colored tropical hardwood. Because rubberwood is made from plantation trees that have already performed a useful purpose, it is frequently marketed as an "environmentally friendly" wood.
(Emily Medlock | Updated on Nov 3, 2022)

### 2.3 Assembly

### 2.3.1 Wood dowel



Figure 2.2 Show a picture of a wood dowel.
(Source: http://surl.li/gxxzu)

A dowel is a "cylindrical rod, usually made from wood, plastic, or metal" that is used for holding together components of a structure. Dowels are much thicker and sturdier than screws or nails, which as a result makes them perfect for furniture or cabinet making.

To join two or more pieces of wood together, dowels are inserted into both pieces of wood being joined which provides an overall stronger joint than gluing alone would. The dowels are usually dipped into glue before being inserted into the wood as this creates a tighter wood-to-wood contact. (Katy | Toolstop on 29th Apr 2021)

### 2.3.2 Biscuit Dowel



Figure 2.3 Show a picture of a biscuit dowel.
(Source:https://startwoodworkingnow.com/what-is-wood-dowel/)

Flat dowels are lenticular wooden plates, mostly made of beech wood or wood fibers, and perform the same function as round dowels. Flat dowels are also called lamellar dowels because they have small lamellae pressed into the surface, which ensure better absorption of wood glue. This type of dowel can be used for both butt and miter joints.

The big advantage is the much larger area compared to round dowels, which ensures a more robust connection that can usually withstand slightly higher loads.

However, this in turn also has a decisive disadvantage for the do-it-yourself: the narrow grooves for the lamella dowels cannot be milled in without the appropriate milling machine.

The disadvantage is that you need a milling machine to use the flat dowels, with which you can cut workpieces into which the dowel is then sunk.
(Start woodworking now | biscuit dowel)

### 2.3.3 Screws



Figure 2.4 Show a picture of screws.
(Source: https://expertcivil.com/screw)

Screws are a common type of fastener used to connect various materials. A screw is a basic device consisting of an inclined plane. It has been twisted and wrapped with ridges around the cylinder. The screw has a sharp tip. The screw tip is used to drill into stone, metal, wood, and plastic.

Deck screws are the same as wood screws. Deck screws have a few other differences compared to wood screws. Deck screws are used to fasten battens to a composite deck or deck frame. On average, this type of screw can be drilled directly into the material. Corrosion resistance makes it more durable for outdoor use. Deck screw heads are also made for countersinking. This means they can either sit flush with the board or sink slightly into it. (Screw vs Nails for Furniture, Expert Civil)

### 2.3.4 Wood glue



Figure 2.5 Show picture of wood glue
(Source: https://craftsmanprotools)

Wood glue is one of the most important materials needed to carry out a woodworking or carpentry project. It is a form of adhesive to fasten or join two or more pieces of wood together. Whether it's furniture making, cabinetry, or home remodeling, wood glue is one adhesive we use a lot during our projects. Although there are many other ways to join pieces of wood such as using nails and screws, the use of glue still produces the strongest and strongest bond if done correctly.

The strong chemical bond that is created is the result of the glue seeping into the wood fibers, thus creating an inseparable connection. The bond created is stronger than the wood itself, so any attempt to break the joint or separate pieces of wood usually results in the wood breaking instead of the joint. When carrying out our projects, not every connection or assembly process requires the use of glue. On the other hand, when building cabinets or furniture, it is very necessary to use them.

### 2.4 Design, size, and prices of the table in the market.

### 2.4.1 Environment

Cats love to get themselves into small spaces like drawers, sinks, under beds, and cabinets because those places make them feel warm, safe, and secure.

Curling up in a small space lets cats conserve body heat and hide from potential threats. Considering that cats spend much of their day snoozing, it makes sense that they would want a comfy, private place to rest. Cats sometimes choose places to hide that may seem perfectly suitable to them but that can be quite dangerous.

Cats may choose to conceal themselves in places such as in cabinets, clothes dryers, washing machines, inside reclining chairs, behind electrical appliances (such as the refrigerator or television), and if allowed access to the outside under cars. Be sure to check these places if your cat has decided to make themselves scarce.

Providing cats with safe, suitable places to relax will assist in minimizing the chance they will find a place of their own. This is even more important in multi-pet families. Cats often love being up high so think secure shelves, a comfortable bed on a table, or in a cupboard as these are often places cats will like.

### 2.5 Finishing

### 2.5.1 KCC Eva gloss Black Interior Oil Paint



Figure 2.6 Show pictures of wood oil paint.

Oil paints are preferred by many because they are durable and leave you with a smooth surface after it dries, which can be either gloss or matte depending on the paint you choose. Oil-based paints contain solvents that usually have a high level of Volatile Organic Compounds (VOCs) and need to be applied in a safe well-ventilated area.

Oil-based paints contain a ground-colored pigment that is mixed with oil. The quality of your paint will be subject to the quality of the pigments used. If you mix more oil into the paint, you can make it more fluid, and adding some solvent will weaken the paint. Oil-based paints are also a lot thicker and take much longer to dry and require a solvent or spirits to clean up afterward. To attain the desired finish, you need to apply oil paints with high-quality paintbrushes, rather than using a paint roller to apply the paint.
(What is wood oil paint, acrylgiessen)

### 2.5.2 Wood Varnish



Figure 2.7 Examples of wood varnish.
(Source: https://en.wikipedia.org/wiki/Varnish)

Varnish is a clear transparent hard protective coating or film. It is not a stain. It usually has a yellowish shade due to the manufacturing process and materials used, but it may also be pigmented as desired. It is sold commercially in various shades.

Varnish is primarily used as a wood finish where, stained or not, the distinctive tones and grains in the wood are intended to be visible. Varnish finishes are naturally glossy, but satin/semi-gloss and flat sheets are available. (Varnish by Wikipedia)

## CHAPTER 3 <br> METHODOLOGY

### 3.1 INTRODUCTION

A crucial aspect of the research that needs to be addressed is the methodology. This is because it is important to produce the commodity with the best results available. To ensure that the methods employed in this study are well investigated and organized the aspects addressed include analytic strategies, data collection methods, study protocols, and hypotheses.

### 3.1.1 Early research

To address the issue of cat lovers at home, research is now being done. Our household furniture, particularly couches and soft surfaces, is frequently damaged. Additionally, because there is no way to put cat toys in one location, objects like cat toys are not organized.

We also give cat lovers who experience these issues a questionnaire so we can learn more about their circumstances. According to the Cabinet for Cat Lover survey results, $92.3 \%$ of respondents thought that this design was necessary and should be in their homes. Therefore, our idea makes sure that a multipurpose table can be placed in the space's limited configuration. Sultan Salahuddin Abdul Aziz Shah Polytechnic's woodworking shop will be the site of our project's execution.

Among the processes involved in producing this product are:
i. Observation for the cat lover
ii. Design and distribution of questionnaires
iii. Design planning and costing
iv. Prepare budgets and costs

### 3.1.2 Flow chart process



Figure 3.1 Flow chart process

### 3.2 Location

Our project activities are completed in the Sultan Salahuddin Abdul Aziz Shah Polytechnic Wood workshop. We have all the essential equipment in the workshop. In the end, this helped us finish our final year project work.

### 3.3 Process involved

### 3.3.1 Observation of Cat Lover

An essential initial step in gathering data for design or estimation to finish simple tasks for outdoor activities is observation. It can determine where the obstacle is and the best layout for it. The kind of site evaluation and best practices needed will change depending on the project.

An issue that cat lovers experience is the initial stage of our endeavor. We collected some information for our research. We discovered that damage to household furnishings is a problem for cat enthusiasts.

### 3.3.2 Design and Distribution of the Questionnaire

A questionnaire is a research tool consisting of a series of questions used to collect data from respondents. The design and distribution of the questionnaire is the next step of the project. The questionnaire focused on the respondent's opinions about having a cabinet multi-function for their respective homes.

### 3.4 Design

Our proposal is a comfortable furniture size with geomatic features for cat lovers and cats to utilize. The ergonomic design can maintain the comfort of cats and cat lovers while decorating their home or cat room. This Cat Lover's Cabinet is likewise made by the medulla concept and the height of the competition. Our project cabinet's size design allows for space savings, and it also has multiple uses.

### 3.4.1 Size



Figure 3.2 Cabinet for Cat Lover (Top view)


Figure 3.3 Cabinet for Cat Lover (Front view)


Figure 3.4 Cabinet for Cat Lover (Side view)

To ensure user comfort, dimensions are a crucial component of furniture design. Our multi-function cabinet is $400 \mathrm{~mm} \times 400 \mathrm{~mm}$ in size, so we need to know what size is best for the user. Due to its suitability for users of all sizes and its ability to provide a comfortable table height, we opt for the 400 mm long dimension. Since our project's goal was to minimize space and make the table portable, we decided on a width of 400 mm .

### 3.4.2 Bill of Materials

| Bill Sheet of One No. |  |  | Bill of Material |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Part No | Part Per Article | Part Name | Length | Width | Thickness | Species | Molder |
| A | 2 | Tabletop | 400 | 400 | 18 mm | Rubberwood |  |
| B | 2 | Base | 418 | 400 | 18 mm | Rubberwood |  |
| C | 2 | Door | 364 | 400 | 18 mm | Rubberwood |  |
| D | 2 | Side M1 | 400 | 400 | 18 mm | Rubberwood |  |
| E | 2 | Side M2 | 400 | 400 | 18 mm | Rubberwood |  |
| F | 2 | Shelf | 364 | 386 | 18 mm | Rubberwood |  |
| G | 2 | Baking | 373 | 373 | 6 mm | Plywood |  |
| H | 8 | Leg | 50 | 50 | 18 mm | Rubberwood |  |
| I | 1 | Face Drawer | 78 | 358 | 18 mm | Rubberwood | $\bullet$ |
| J | 1 | Back Drawer | 78 | 358 | 12 mm | Plywood |  |
| K | 2 | Side Drawer | 78 | 350 | 12 mm | Plywood | $\square$ |
| L | 1 | Base Drawer | 343 | 338 | 4 mm | Plywood | $\square$ |

Table 3.0 Show Bill of Materials

### 3.4.3 List of machines and tools



| 7. | CNC Machine | a manufacturing process in <br> which pre-programmed <br> computer software dictates <br> the movement of factory <br> tools and machinery. |  |
| :---: | :---: | :---: | :---: |
| 8. | L-square | checking an inside or outside <br> angle when assembling <br> workpieces, such as boxes. |  |
| 9. | Steel Ruler | measure an accurate <br> measurement. |  |
| 10. | Measuring Tape |  |  |

Table 3.1 Show list of machines and tool

### 3.4.5 Cutting list

| Part Name | Length | Width | Thickness | Quantity | Material |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Top | 400 mm | 400 mm | 18 mm | 2 | Rubberwood |
| Base | 418 mm | 400 mm | 18 mm | 2 | Rubberwood |
| Door | 364 mm | 400 mm | 18 mm | 2 | Rubberwood |
| Side M1 | 400 mm | 400 mm | 18 mm | 2 | Rubberwood |
| Side M2 | 400 mm | 400 mm | 18 mm | 2 | Rubberwood |
| Shelf | 364 mm | 386 mm | 18 mm | 2 | Rubberwood |
| Baking | 373 mm | 373 mm | 6 mm | 2 | Plywood |
| Leg | 50 mm | 50 mm | 18 mm | 8 | Rubberwood |
| Face drawer | 78 mm | 358 mm | 18 mm | 1 | Rubberwood |
| Back drawer | 78 mm | 358 mm | 12 mm | 1 | Plywood |
| Side drawer | 78 mm | 350 mm | 12 mm | 2 | Plywood |
| Base drawer | 343 mm | 338 mm | 4 mm | 1 | Plywood |

Table 3.2 Show cutting list

### 3.4.6 Preparing budget and costing

| No. | Item | Unit | Per / Unit | Total |
| :---: | :---: | :---: | :---: | :---: |
| 1. | Rubberwood | 4 "x 8 " | RM 250.00 | RM 250.00 |
| 2. | Screw | 30 pcs | RM 0.50 | RM 15.00 |
| 3. | Wood Varnish | 1 pcs | RM 28.90 | RM 14.45 |
| 4. | Wood Oil Paint | 1 pcs | RM 29.90 | RM 14.95 |
| 5. | Shelf Pin | 4 pcs | RM 0.15 | RM 0.60 |
| 6. | Wood Dowel | 16 pcs | RM 0.22 | RM 3.52 |
| 7. | Sandpaper | 3 pcs | RM 1.03 | RM 3.10 |
| 8. | Paint Brush | 5 pcs | RM 1.10 | RM 5.50 |
|  |  |  | TOTAL | RM 307.12 |

Table 3.3 Show the materials' cost

| No. | Item | Unit | Per / Unit | Total |
| :---: | :---: | :---: | :---: | :---: |
| 1. | Material |  |  |  |
|  | Rubberwood | $4{ }^{\prime} \times \mathrm{x} 8$ '" | RM 250.00 | RM 250.00 |
|  |  |  |  |  |
| 2. | Additional Material |  |  |  |
|  | Screw | 30 pcs | RM 0.50 | RM 15.00 |
|  | Wood Varnish | 1 liter | RM 28.90 | RM 14.45 |
|  | Wood Oil Paint | 1 liter | RM 29.90 | RM 14.95 |
|  | Shelf Pin | 4 pcs | RM 0.15 | RM 0.60 |
|  | Wood Dowel | 16 pcs | RM 0.22 | RM 3.25 |
|  | Sandpaper | 3 pcs | RM 1.03 | RM 3.10 |
|  | Paint Brush | 5 pcs | RM 1.10 | RM 5.50 |
|  |  |  |  |  |
| 3. | Mark- up 70\% | RM 70/100 x |  |  |
| RM 307.12 |  | RM 214.98 |  |  |
|  |  |  |  |  |
| 4. | Selling Price |  |  | RM 522.10 |

Table 3.4 Show mark-up price

### 3.5 Gantt chart report writing

$\square$

| NO | WEEKS | SESI 2: 2022/2023 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | ACTIVITY | W1 | W2 | W3 | W4 | W5 | W6 | W7 | W8 | W9 | W10 | W11 | W12 | W13 | W14 |
| 1 | Briefing Project |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2 | Chapter 1: Introduction |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 3 | Chapter 2: Literature Review |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4 | Chapter 3: Methodology |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 5 | Chapter 4: Result \& Discussion |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 6 | Draft Report 2 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 7 | Conclusion |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 8 | Final Report |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 9 | Logbook |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

Table 3.5 Gantt chart of report writing

### 3.5.1 Gantt chart working process

WORK PLANNING
IMPLEMENTATION

| NO. | WEEKS | SESI 2: 2022/2023 |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | ACTIVITY | W1 | W2 | W3 | W4 | W5 | W6 | W7 | W8 | W9 | W10 | W11 | W12 | W13 |
| 1. | Briefing Project |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2. | Presentation |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 3. | Material Preparation |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4. | Measuring <br> Material |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 5. | Cutting \& Trimming |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 6. | Sanding Process |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 7. | Assemble Process |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 8. | Finishing Process |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 9. | TBK <br> Presentation |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 10. | Department <br> Presentation |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

### 3.6 Working progress

Flow chart working process


Figure 3.2 Show flow chart working process

### 3.6.1 Cutting process

Several parts are required in the cutting process and must be cut accordingly cut list. A table Saw is a tool used in the process of cutting.


Figure 3.4: Cut the Rubberwood by using Table Saw

### 3.6.2 Marking Process

Some parts need to be marked for the process of transferring the design or pattern to the workpiece, as the first step in the manufacturing process.


Figure 3.5: make markings to get an accurate count.

### 3.6.3 Process of making dowel holes.

Dowel holes are precisely drilled to match the appropriate boards, and when glued in place, create a solid and long-lasting woodwork connection.


Figure 3.6: Making holes for wood dowels.

### 3.6.4 Process wood shaping.

using a CNC machine to mold this wood into the desired shape and a wood trimmer to complete it.


Figure 3.7: Making cat head shape.

### 3.6.5 Finishing

Various things are necessary for the finishing process to make this product look beautiful. Using a tape sander pad, this product will be sanded on every corner and surface to make it more aesthetically pleasing and softer. Use a paintbrush and black oil paint to paint the tabletop and cabinet legs, brushing the paint on the surfaces gradually to get rid of the unkempt wood appearance. Additionally, apply shellac to the surface of the door, the side of the cabinet, the cabinet drawer, and the surface within the cabinet to make it appear more lovely and organized since the wood grain is appealing.


Figure 3.8: Sanding cabinet to get smooth surfaces.


Figure 3.9: Applied black oil paint to tabletop and cabinet legs.


Figure 3.10: Applied shellac to all cabinet surfaces and drawers.

## CHAPTER 4 <br> FINDING \& DATA ANALYSIS

### 4.1 Introduction

Beginning with the concept for a multipurpose, transportable, and spacesaving table, Cabinet for Cat Lover underwent several stages before going into production. This product will be useful to cat lovers and will offer several functions for use in the home as well as comfort for the cat.


Picture 4.1 View with close Cabinet for Cat Lover


Picture 4.2 View with open Cabinet for Cat Lover

### 4.2 Result and Discussion of a Survey on Complete Cabinet for Cat Lovers.

An online survey was conducted to get feedback from users on the complete Cabinet for Cat Lover. It was answered by 49 respondents.

## 1. Adakah anda memiliki kucing atau tidak?



- YA
- TIDAK

2. Adakah anda menyediakan tempat yang khusus untuk kucing anda berehat?

3. Adakah kucing anda sering mencakar perabot dirumah?

4. Adakah anda menyediakan tempat yang khusus untuk menyimpan alat permainan kucing?

TIDAK

- YA

5. Adakah anda suka perabot yang boleh menjimatkan ruang di rumah anda? TIDAK.

6. Adakah anda memiliki "Cabinet" jenis pelbagai fungsi?

7. Adakah anda bersetuju dengan reka bentuk produk ini?

8. Adakah anda berminat untuk memiliki produk ini?

YA

TIDAK
9. Berapakah kadar harga yang sanggup dibayar untuk memiliki produk untuk haiwan peliharaan?

10. Adakah anda bersetuju produk ini dapat memenuhi keperluan pemilik kucing dan boleh dikomersialkan?


### 4.3 Final result

The Cabinet for Cat Lover concept integrates the Medulla concept, where this cabinet will be a multi-functional cabinet that makes life simple for cat lovers. This item is used in the living room, bedroom, or existing cat room to keep cat toys and can also be used to store books or the other way around. Rubber wood, a material that is frequently used to make cabinets, was used to create this Cat Lover's Cabinet.

## CHAPTER 5 CONCLUSION \& RECOMMENDATION

### 5.1 Introduction

The final chapter of the entire endeavor is covered in this one. The project's conclusions will be drawn, and this chapter will also explore recommendations and potential upgrades for upcoming developments that could increase system performance.

### 5.2 Conclusion

In conclusion, the lack of market demand for Cabinets for Cat Lovers is a result of the challenge of locating a cat-specific multi-functional cabinet. Respondents are interested in this product due to the different functionalities that are offered on the cabinet itself, as was covered in the previous chapter.

It can be positioned in a living room or cat room because of its geomatic design, which is ideal for a cat cabinet. Because it contains a bookshelf where the cat sleeps and a secret drawer where you can store cat toys or other items, this cabinet saves space for cat lovers. Finally, this project's goals were all successfully attained.

### 5.3 Recommendation

Changes can be made to this product's features in future suggestions to enhance its features. One of the improvements is the potential to utilize materials outside rubber wood and the possibility of using lighter wood. Additionally, to improve the cabinet so that it may be used in a more high-end and sophisticated manner, adding upgrades will make the cabinet more appealing. For further innovation, it is also possible to take into account the cabinet's size. B-wax is an option for finish improvement because it is certain to be secure for both kids and animals.

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## APPENDIX

GANTT CHART

CARTA GANTT : PERANCANGAN DAN PELAKSANAAN PROJEK PELAJAR
SESI : 2 : 2022/2023
JABATAN: JKA
KODKURSUS: DCW50243
TAJUK PROJEK : CABINET FOR CAT LOVER


## APPENDIX

## KAJI SELIDIK TENTANG CABINET FOR CAT LOVER

Kaji selidik ini adalah bagi memenuhi keperluan tugasan bagi mata pelajaran DCW 50243 Wood-Based Technology Programme. Soal selidik ini bertujuan untuk meningkat kualiti kabinet kucing.

1. Adakah anda memiliki kucing atau tidak?YATIDAK
2. Adakah anda menyediakan tempat yang khusus untuk kucing anda berehat?YA

TIDAK
3. Adakah kucing anda sering mencakar perabot dirumah?YATIDAK
4. Adakah anda menyediakan tempat yang khusus untuk menyimpan alat permainan kucing?YATIDAK
5. Adakah anda suka perabot yang boleh menjimatkan ruang di rumah anda? *YATIDAK
6. Adakah anda memiliki "Cabinet" jenis pelbagai fungsi? *YA

TIDAK
7. Adakah anda bersetuju dengan reka bentuk produk ini? *
YATIDAK
8. Adakah anda berminat untuk memiliki produk ini? *
YA

TIDAK
9. Berapakah kadar harga yang sanggup dibayar untuk memiliki produk untuk haiwan peliharaan?RM150 - RM250RM260 - RM300Other...
10. Adakah anda bersetuju produk ini dapat memenuhi keperluan pemilik kucing dan boleh dikomersialkan?YATIDAK

