

# Multipurpose Turntable Shelf

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**Abstract:** We conducted a brief face to face interviews with family and friends to find out the problems that they have in their activities of daily living (ADL) which need immediate solutions. We identified many problems, but we chose the one that we are capable of and possible to solved. The target market for our project are the students and households. A rack or shelf which we can put various things inside such as shoes, books, decorative things, and others. To make it look more attractive and unique, the rack or shelf can be rotated 360 degrees. Nowadays, people are more concern on space and energy saving. A rack or shelf does not have its own lighting and it requires you to open the light of your room or in the store if you want to take something out from it. It will increase the usage of electricity. Therefore, we need to produce a rotating multipurpose shelf rack with its own light without using electricity. The multipurpose shelf rack facilitates the life of the students mainly who live in the hostels and the household's daily routine are easier.

**Keywords:** Activities of daily living (ADL); space and energy saving; students and households.



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## 1. INTRODUCTION

Activities of daily living (ADL) is a term used in healthcare to refer to daily self-care activities within an individual's place of residence, in outdoor environments, or both (Kristine, 2002). ADLs are defined as "the things we normally do such as feeding ourselves, bathing, dressing, grooming, work, homemaking, and leisure. We found out that most of the daily living problems are related to their daily routines. Therefore, we decided to focus on some common problems which are usually faced by the households and friends especially those students who lives in the hostels.

## 2. METHOD & MATERIAL

A brief face to face interviews with family and friends was conducted to find out the problems they have in their activities of daily living (ADL) which need immediate solutions. We identified many problems, but we chose the one that we are capable of and possible to solved. The target market for our project are the students and households.

After considering all the aspects, all the pros and cons as well as the possible solutions for the problems, we have come to decision where we choose to produce the multipurpose turntable shelf rack. It took a while for us to achieve consensus and to think on the materials to be use on producing the shelf. So, after all the discussions, we have finally decided on what to use and the materials needed are as follows; plywood, black and red paint, thinner, a hammer, sandpaper, LED lights,

batteries, screwdrivers, and double tape. We have calculated the overall costs involved. The total cost was almost RM300.00.

### 3. FINDINGS

After the survey has been conducted, we identified a few problems and challenges. We list down all the findings and the result are as in Table 1 below. Based on the findings, we found out that most of the respondents have some common problems which are difficulties to store/keep things in 1 place neatly and at the same time can save more space and energy. Therefore, we decided to innovate a product that we can put various things inside neatly and can reduce the usage of electricity. The name of our product is **Multipurpose Turntable Shelf**.

**Table 1.** Listing of Problems and Solutions

Problems	Suggested solutions	Frequency (N = 100)
1. Difficulties ironing clothes	Adjustable ironing board	72
2. Difficult to carry umbrella every time raining season	Fashionable 2 in 1 water resistance raincoat	70
3. Difficulties to store/keep things in 1 place neatly and at the same time can save space and energy.	Multipurpose turntable shelf	81
4. Dangerous environment	Safety electronic device	
5. Poisonous/ harmful food	A device that can detect poisonous/ harmful food – Food ingredients scanner	74
6. Lazy to fold clothes	Automatic folding machine	76

### 4. DISCUSSION AND CONCLUSION

ADLs are basic self-care tasks that are needed for basic functional living. The activities of daily living (ADLs) are a term used to collectively describe fundamental skills required to independently care for oneself, such as eating, bathing, and mobility (Katz, 1983; Bienkiewicz et al., 2014).

Furthermore, there are instrumental activities of daily living (IADLs) involve slightly more complicated duties that need more thinking and organisational skills than regular activities of daily living (ADLs). The activities include cooking, cleaning, doing your own shopping, managing your own transportation, and even handling your finances.

Since most activities of daily living revolve around being physically able, there is many assistive equipment that can help to complete these tasks with far more ease. Not only does this make the process of completing ADLs easier, but it also reduces the amount of time needed to complete them.

ADL is used as a sign of a person’s ability circumstances. The inability to perform ADLs lead to dependence of other individuals and/or practical devices. The inability to complete basic activities of daily routine may lead to insecure environments and low quality of life. Measurement of an individual’s ADL is important as these are the signs of the need for alternative living arrangements, hospitalization, admission to nursing homes, and even the needs of paid home care (Guidet et al., 2020; Costenoble et al., 2021; Cagle, 2020; Rosenberg et al., 2019).

After we did some research on ADLs, therefore, we came out with the idea of innovating the Multipurpose Turntable Shelf, hoping that this equipment may ease the daily life routine of those who need.

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