UNIVERSITI TEKNOLOGI MARA

DESIGN AND FABRICATION OF HYDROPONIC SYSTEM FOR INDOOR GARDENING

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ABSTRACT

There are so many people living in apartments these days, especially people who live in urban areas. Most of these people neither have enough space nor have space at all in their homes to do some simple gardening. So, the objective of this project is to make a hydroponic system for indoor gardening. This project is mainly for simple vegetable planting that can grow without any soil used. This project is planned to be a small and portable one which can fit in their balcony or any space near the sunlight. This project is also supposed to be a reusable system because the only thing that is getting replaced is the fertilizer which is a nutrient-rich water solution. This solution is used to replace the soil. The system typically consists of a reservoir for the nutrient solution, a pump to circulate the solution, and a growing tray or medium for the plants. The components can be made from a variety of materials, including plastics and metals. The system can be further optimized by adding features such as lighting, temperature control, and pH monitoring. By doing this project, people that living in urban areas to don't need to worry about gardening anymore.

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INTRODUCTION

1.1 Background of Study

Nowadays, people who live in urban areas especially in flats, apartments, and condominium. Living in such an urban area may have a higher living cost. To reduce their monthly expenses, they might want to have a side income for their groceries. They have a very limited space in their home. So, to prevent these problems the residents need to have a hydroponic system in their house. The aim for this project is to help the residents to reduce their living costs and have a mini gardening system. By having this system in their home, they can do some gardening in their home. This system also isn't. taking up a lot of space so they can put it on their balcony. This system is also light and portable.

1.2 Problem Statement

Hydroponic systems offer urban residents a space-efficient and safe solution for home gardening. With limited space in urban areas, residents can set up hydroponic systems on their balconies or indoors, reducing their living costs by growing their own produce. These systems are light, portable, and require minimal space, allowing residents to enjoy the benefits of gardening and fresh produce even in small urban homes.