CHAPTER 1

INTRODUCTION

1.1   Background

Hydroponic comes from Greek word, *Hydro* which means water and *Ponos* which means is power. Today we know hydroponic is farming with water nutrition without using soil. Water usage to do hydroponic is less than common soil farm. This method are very popular lately because hydroponic farm is more efficient and easy for people who busy all day but want to do some mini gardening or for farmer because hydroponic plants grow faster than soil method.

Using arduino uno, breadboard and servo we can make some tools that can help people doing hydroponic farm without worry. Arduino as microcontroller and servo as tool that serves as roof. This combination become automatic roof depends on weather and sunlight intensity. Sensor that use in here is sensor ldr and rain drop sensor.

All of this combinations become one tool can help farmer or people who had hobby farming hydroponic can do farm efficiently. Theres a way to care hydroponic plant without beside the plant all day, because hydroponic farm need more care than other planting method. Thats why we do this research to help hydroponic farmer and other people farm more efficiently. beside all these,growing plant in hydroponic method always faster than other method this is because the habit of hydroponic method are using nutrient water and got right ammount of sunlight instesity.

1.2   Problem Formulation

A common hydroponic farm using pipe or used bottle ussualy placed in garden with canopy or greenhouse.but this will make farmer spent more money doing this. Theres common problem for hydroponic farming;

1. How to care hydroponic plants without watch them all days.

2. Recently weather hard to predict makes nutrient change and makes plants grow slower.

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3. Several places have extreme sunlight intensity can make vessel of the plants hot, this is will ruin nutrient water inside, not only water nutrient but the leaf also can be withered because of the heat.

1.3 Scope

This project only discuss about automatic rooftop effect for efficiency usage and to compare with common hydroponic method. this project will not discuss to control the tools manualy from from mobile phone or using internet connection.

1.4 Objective

Objective from this project is to make automatic rooftop for hydroponic farming and compare it to common hydroponic farm. All the plants are treated the same start from seeds and water nutrient.