

ROBOTIC LIBRARY SYSTEM

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Abstract

A library robot is a smart system that helps maintain and improve the efficiency of a library. It is equipped with various controllers that allow the users to monitor and control the library services. A robot that can handle the tasks of a library efficiently. It can also save human services time and reduce the load on the staff. It can also monitor the library's activities and provide feedback on its progress. Its goal is to help the libraries cut costs and improve their efficiency. To overcome this problem, we had suggested this project "**Robotic Library System**". In this project, we can organize the books in the racks and monitor the library activities this helps us to reduce the manual power and human errors.

Keywords-IR unit,Zigbee transceiver,Relay driver,Battery

1. INTRODUCTION

Our project is to make a '**Robotic Library System**', which helps us to organize the books in a library in an ordered way. To make the process of book finding and picking easier, we suggest a robot with an arm having some degrees of freedom which will be able to find books with the required tag and then pick up and place it on the table. Robotic arm is a mechanical arm which is manually controlled through wired or wireless systems to perform the desired task in various fields of application such as military tasks, hospital operations, dangerous environment and

agriculture. The main aim here is to build a robotic arm that is capable of picking the particular book and in case of any misplacement of the book the robotic arm should be capable of picking and.

2. RELATED WORK

Libraries provide a growing array of digital library services and resources and they continue to acquire large quantities of printed materials. The combination of providing electronic and printed based resources and services have led to severe space constraints for many libraries especially academic research libraries. The main aim of this project is to organize the books in the library in the allotted slots

and make the process easy. This helps the workers in the libraries and reduces the man power.

3. IMPLEMENTATION

It consists of Raspberry pi, mechanical gripper, servo motors, IR sensors, ultrasonic sensors, Linear actuator, Movable base. It is a simple prototype used to receive and return books more efficiently. It helps you to keep the books in an organized manner. This device helps reduce errors caused by human tiredness and also make the process of placing books easier.

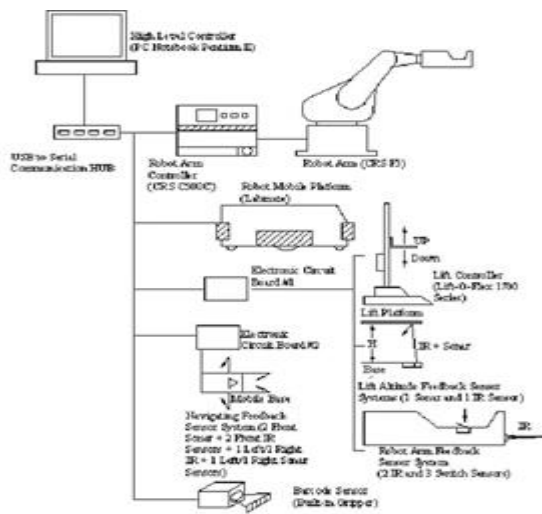


Figure 2: Diagram of the library robot controls.

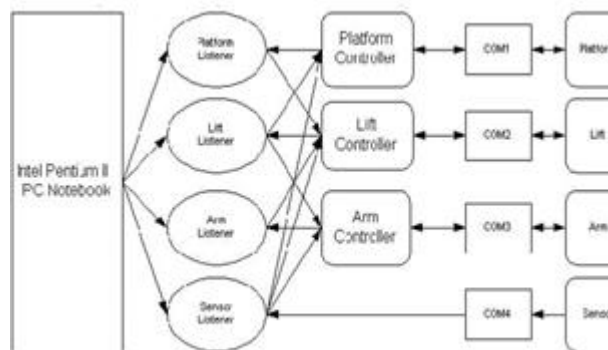
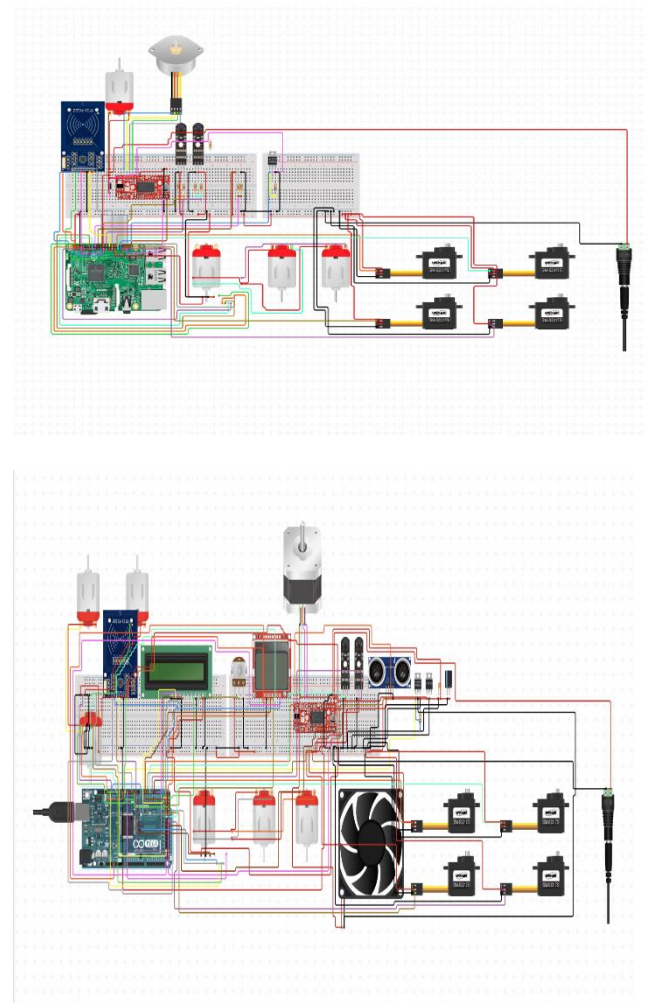


Figure 3: Software structure of the library robot

Conceptual design

The first step is to know the browse about the project and get a complete idea about the project. Then, we have to collect all the require items for the project. Then we have to attach all the materials and fix them accordingly. We have to check whether the device is working or not. Finally check if the device is working or not.

4. EXPERIMENT RESULT



5. RESULTS AND CONCLUSIONS

It makes taking books easier. It makes the process of finding books easier. The model helps correct the errors of human

limitations. Returning books has become quicker and easier. It works nonstop so it gives opportunities for librarians to take breaks.

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