Karnataka State Council for Science and Technology
Student Project Program-42nd Series
Project Proposal Reference no: 42S_BE_0489

TITLE OF THE PROJECT: INFORMATIVE REFRIGERATOR FOR THE USER.

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Introduction:

“TO EAT IS A NECESSARY, BUT TO INTELLIGENTLY IS AN ART”

Refrigerator is the most frequently used kitchen appliances all over the world for food storage. Informative refrigerator gives the information about the availability of food items present inside the refrigerator by capturing the image using camera. When user wants the image of refrigerator they have to send a request through the blynk app and by use of internet they can get image of refrigerator through the e-mail. From the image we can get idea about food items present inside the refrigerator.

Objectives:

1. Gives a brief idea about the food items present inside the refrigerator through image
2. Helps in managing the time by getting the details of the food or vegetables while purchasing
3. Converts a ordinary refrigerator into a information refrigerator

Methodology:

- The project consists of hardware and software layers. The hardware layer comprises of microcontroller(Raspberry pi 3), Camera, Relay, Tungsten bulb, Android mobile, refrigerator.
- The software layer comprises of python 3(IDLE) platform.
- Initially we have to send a request message to the system to send the captured image. Here we use two e-mail id, one for system and another for user.
- The blynk app create different authentication code for different users. Through blynk app user sends the request to system, when the authentication code matches, raspberry pi started processing and camera capture the image, then the captured image send to user email id.
Components used

<table>
<thead>
<tr>
<th>Components</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Raspberry pi 3</td>
<td>B+</td>
</tr>
<tr>
<td>2. Camera</td>
<td>Sony IMX2L219</td>
</tr>
<tr>
<td>3. Relay</td>
<td>2 channel USB relay</td>
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<tr>
<td>4. Mobile</td>
<td>-</td>
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<tr>
<td>5. Power supply</td>
<td>5V</td>
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Diagrams:

![Diagram](image)

Fig: Block diagram of informative refrigerator

Raspberry pi 3:
Camera (Raspberry Pi camera):
Relay:
Flowchart

mobile

Blink app

Autotition code match

Unmatch

error

match

Raspberry Pi processing

Camera on

Image capturing

Send to mail
Result and Conclusion

The project is completed successfully with excellent result. This paper presents the clear picture of a food item inside the smart refrigerator. The module allows the user to get the information about the food present in the refrigerators.

A smart fridge was proven to have greater accuracy when creating a shopping list. A fridge that uses a similar algorithm would be able to create shopping lists that are more useful to a user and could possibly make the user healthier and provide them with a more enjoyable shopping experience.

Scope for future work

1. By making further modification to recognize the quantity of goods inside the refrigerator.
2. RFID tag scanning system.
3. We may access the smart refrigerator using IOT.

Guide
Harshitha R