Food-Scan: Food Monitoring Web Application by Scanning Groceries Receipts

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***Abstract*: In the cell phone market there is an enormous number of uses to assist individuals with checking allow or give ideas to get fit and deal with a sound eating routine. In any case, by far most of these applications devour a great deal of time by presenting food individually. This paper presents the work to create and direct test another Android application, Food Scan, focused on individuals more than 70, extraordinarily those from rustic conditions or with restricted specialized information, to deal with their food from the things that's how up on their staple receipts, keeping away from the commitment to present individually those food varieties, and creating suggestions. To accomplish this last level headed, explicit destinations have been finished as demonstrated in the techniques segment. We directed an audit of current calorie control applications to find out about their shortcomings and qualities. Various calculations were tried to assist the presentation of food into the application and the most appropriate for the Food Scan application was chosen. In like manner, a few choices were considered to make the information base of food, considering dietary proposals for individuals north of 70 years. When created, a pilot assessment was completed with a comfort test of 109 volunteers in country spaces of Caceres and Valladolid (Spain) and Alentejo (Portugal). They tried Food Scan for a month after which they finished a client fulfillment overview. 93 (101/109) trusted that the application was not difficult to download and introduce, 66 (72/109) imagined that it was not difficult to utilize, 47 51/109) noted clients found the application fairly accommodating for observing food admission, simple to download and simple to utilize.**

***Keywords*: Health, android, food intake monitoring, elderly, automatic dietary assessment, Web scraping, optical character recognition algorithm (OCR), user evaluation.**

INTRODUCTION

The guidelines to follow in any healthy diet are summarized in: (1) variety in foods; (2) reduce fat consumption; (3)increase the consumption of complex carbohydrates such as fruits and vitamins; (4) increase the consumption of fiber rich foods; (5) reduce sugar and salt; (6) maintain the intake of vitamin D and calcium; (7) hydrate; (8) moderate alcohol consumption; (9) make 4 or 5 meals a day reducing the amounts in each one; and (10) exercise regularly. Technology is a highly effective tool for controlling diet and physical activity [1], [2]. Overweight, which affects all age groups, has increased.to alarming levels as a consequence not only of excessive calorie intake but also of being more sedentary [3], [4].The increase in the production of processed foods, the rapid urbanization and the change in lifestyles have led to a change in eating habits. More and more people are far from their ideal weight, which is a serious health problem due to related heart diseases, diabetes, stroke, etc. Eating a healthy diet helps protect us from malnutrition in all its forms, as well as the diseases mentioned above. It is necessary to change people's lifestyles, controlling the amount of food we eat and start eating healthier.

1. PURPOSE

The purpose of this document is to present a detailed In the mobile device market there is a large number of applications to help people monitor intake or provide suggestions to lose weight and manage a healthy diet. However, the vast majority of these apps consume a lot of time by having to introduce food one by one.

EXISTING SYSTEM

Food packaging plays a major role in preserving food and maintaining the quality. Food packaging combines with antimicrobial activities are now in demand in food industry due to growing concerns on food quality. As some inorganic nano materials show extensive antimicrobial activity incorporation of them into food packaging exhibit enhanced food quality.

These studies have been focused on establishing methods for preparation of antibacterial Nano coating for polymer based food packaging. Nano silver has widely been used in antimicrobial films. For this study Nano silver based polyvinyl alcohol coating was prepared on polypropylene food packaging material.

1. DRAWBACKS OF EXISTING SYSTEM

- **Less User Friendly:** The existing system is not user friendly because the retrieval of day-to-day activities data/records is very slow and records are not maintained efficiently and effectively.

- **Complex for generating the report:** We require more calculations and efforts to generate the report so it is generated at the end of the session. And the student does not get a chance to improve their attendance.

- **Lengthy time:** Every work is done manually so we cannot generate report in the middle of the session or as per the requirement because it is very time consuming.

2. PROPOSED SYSTEM

- Detect Food Calories , Show output to user
- Proper alert system to the user
- Notification to Mobile application
- Automatic scan as well as typing features**.**

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FoodScan, aimed at people over 70, especially thosefrom rural environments or with limited technical knowledge, to manage their food from the items thatappear on their grocery receipts, avoiding the obligation to introduce one by one those foods, and generatingrecommendations. To achieve this final objective, specific objectives have been completed as indicated inthe methods section. We conducted a review of current calorie control applications to learn about theirweaknesses and strengths. Different algorithms were tested to expedite the introduction of food into theapplication and the most suitable for the FoodScan application was selected.

SYSTEM ARCHITECTURE

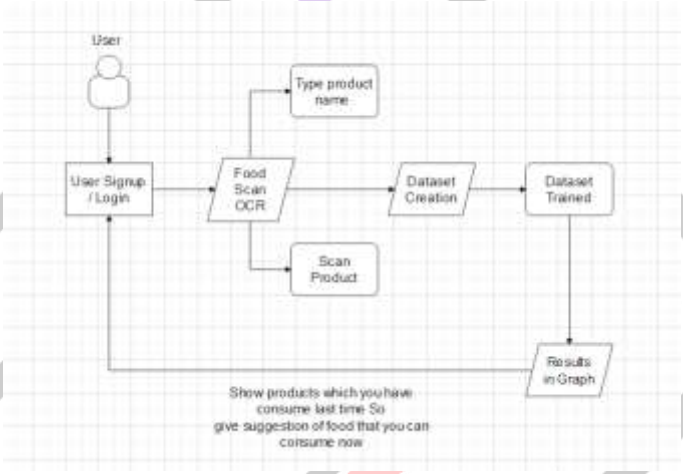


Fig -1: System Architecture Diagram

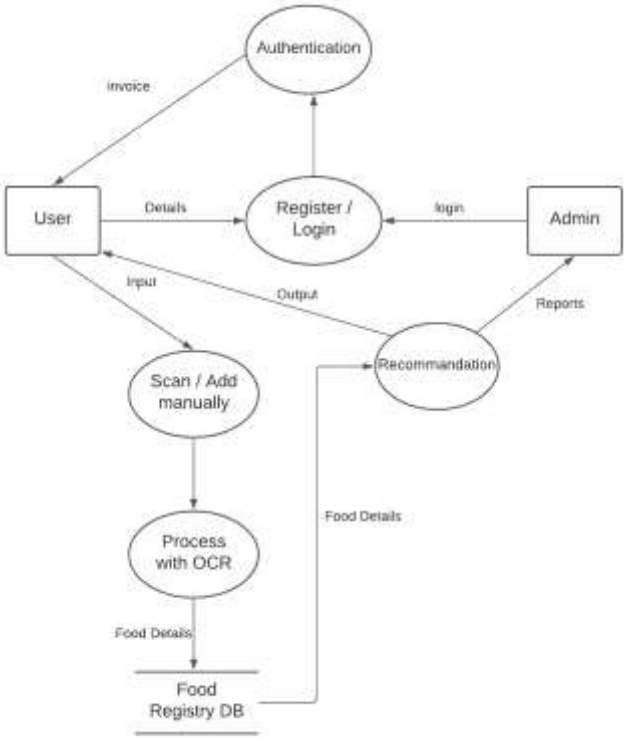
ADVANTAGES

1. Innovative.
3. Centralised Database.
4. Easy to use.
5. Efficient cost.

APPLICATION:

1. Education.
2. Research.
3. Organizations**.**

DATA FLOW DIAGRAM



METHODOLOGY

The single problem can be solved by different solutions. This considers the performance parameters for each approach. Thus considers the efficiency issues:

1. Problem Solving Methods are concerned with efficient realization of functionality. This is an important characteristics of Problem Solving Methods and should be deal with it explicitly.

2. Problem Solving Methods achieve this efficiency by making assumptions about resources provided by their context (such as domain knowledge) and by assumptions about the precise definition of the task. It is important to make these assumptions explicit as it give the reason about Problem Solving Methods

3. The process of constructing Problem Solving Methods is assumption-based. During this process assumptions are added that facilitate efficient ope rationalization of the desired functionality

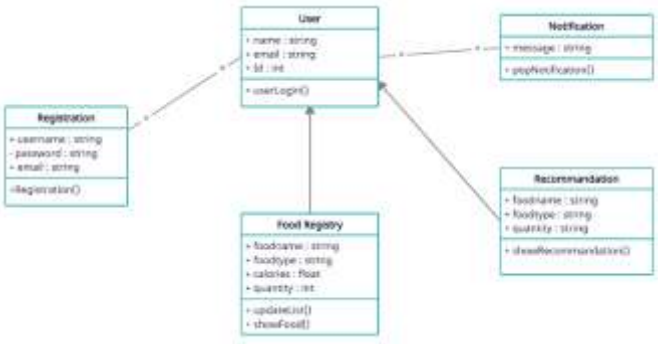
OCR PROCESSING

Post-OCR is an important processing step that follows optical character recognition (OCR) and is meant to improve the quality of OCR documents by detecting and correcting residual errors. This paper describes the results of a statistical analysis of OCR errors on four document collections. Five aspects related to general OCR errors are studied and compared with human-generated misspellings, including edit operations, length effects, erroneous character positions, real-word vs. non-word errors, and word boundaries. Based on the observations from the analysis we give several suggestions related to the design and implementation of effective OCR post-processing approaches.

A. Cross-OCR alignment descriptors Some transcription strategies are using a combination of OCR systems in order to improve the quality of OCR results. In our study, we imitate this recognition strategy to characterize OCR output via an alignment process between the results of the transcription to be qualified and the output of a secondary OCR (reference OCR). This cross-OCR alignment process starts by producing a second OCR result using the segmentation results achieved by the OCR provider. Consequently, we obtain two recognition results for each segmented word. In a second step, we align the characters of these two recognition results using edition operations (insertion, deletion, substitution). The alignment results provide a set of descriptors based on matched characters, inserted characters, omitted characters and substituted pairs of characters. The main advantage of such cross-OCR alignment descriptors is their relative invariability to typographic and linguistic characteristics of documents. The most important condition to make a good estimation is related to the stability of the OCRs. We expect that both systems will perform in a stable way when fed with similar images. Should one system have a better performance than the other (which surely occurs), we expect the confusions between the two systems to be stable over an homogeneous corpus, allowing the performance estimation to generalize over the whole corpus

Based on these alignment results, we extract two global descriptors that describe the OCR results at page/document level.

CLASS DIGRAM



5. CONCLUSION

The elderly who are not used to new technologies may find it difficult to use mobile applications to control their diet. The disadvantage of many of these applications is that they require a lot of time to introduce the food consumed throughout the day. From the user's point of view, it is not practical and, in the long run, most of them will abandon this control. Ourapp is useful and easily manageable and avoids the obligation to introduce one by one those foods. The analysis of the purchased food is offered through a bar graph with different colors, so it is simple and intuitive. The elderly, or the people in their care, can control how they are eating or what food deficiencies they may have. It can be used by all kinds of public, regardless of their technical knowledge. Although it is geared towards serving people over the age of 70, we hope that it will also be used by anyone in their daily lives and that they will be loyal in the long term. Only by adopting healthy habits we can improve our quality of life. FoodScan is an application that we have just developed and will continue to improve thanks to the contributions of users.
We will regularly monitor the 109 people who completed the survey on the regular use of Food Scan to control their diet...

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