

Food Recommendation System

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Abstract - Analyzing the data from different perspectives and organizing it into useful information is quite known to be as data mining. Extraction is the process of drawing out useful relations and patterns from huge database where the data is stored. This approach works in same way as the methodology of data mining where finding relations and patterns among the database are concerned. By executing modern techniques in data mining the scope of the system will get escalated.

Key Words: Machine learning, barcode scanning (single dimensional), QR-code scanning (two dimensional), decision tree, firebase, mobile vision

1. INTRODUCTION

Machine learning and data mining is similar technologies where both the methodologies search for patterns and relations among huge database. Machine learning is further divided into two categories supervised and unsupervised [2]. Supervised learning is based on what has been learned in the past to new data. Where unsupervised learning mainly focuses on current datasets excluding past experiences. Machine learning has variety of algorithms. This system approach uses the decision tree algorithm for pattern finding. Finding the patterns and relations among data leads to knowledge discovery from databases [3].

2. DECISION TREE

[1] It is structural representation which includes a root node, branches and leaf nodes. Internal node denotes a test on an attribute, branch represents outcomes of test where leaf node is responsible to hold a class label. Top node of decision tree is consider to be as root node.

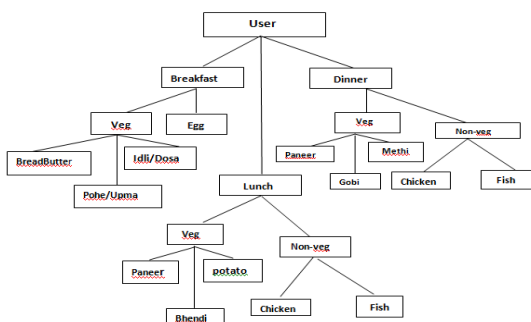


Fig -1: Decision tree for food recommendation system

3. FIREBASE IN FOOD RECOMMENDATION

Firestore delivers great set of functions which will be useful in implementation of various complicated functionalities when the authentication, storage, deep links are concern.

Firestore keeps it straight and simple as compared to databases like MySQL and other giant databases which makes it difficult for newbie to develop application and other mobile operating system. With firestore various applications can be designed with minimum memory requirements because of the real time database that it offers.

Firestore comes with a Json database which can be perfect for this system. JSON database works on the basis of Json tree which has one root and multiple branches and these branches can also contain multiple branches. Unstructured databases like mongo dB, Json proved to give better performance than many of the structured database.

| Email | Providers | Created | Signed In | User UID ↑ |
|----------------------------|-----------|-------------|-------------|------------------------------|
| manojkatkar27@gmail.com | | 31 Jan 2017 | 25 Mar 2017 | 6MdTQ59didHieW8owIapUH1... |
| aniketsalave@gmail.com | | 1 Feb 2017 | 14 Feb 2017 | BAMn7FUhChWfFy70ibkNsE... |
| yash.patil97.y@gmail.com | | 5 Feb 2017 | 5 Feb 2017 | Bm0s9e9shZkqGQfz2700RXd... |
| deshpande.anup24@gmail.com | | 31 Jan 2017 | 23 Mar 2017 | DrBh6mvTL7RY5Gf3M769aDpt... |
| pallavigeete99@gmail.com | | 24 Mar 2017 | 24 Mar 2017 | FxuMrBaXaAaPkfjBw1Ln9E2pZ... |
| nalwarg@gmail.com | | 15 Mar 2017 | 15 Mar 2017 | HuKlvuyDqkNHjHJF5WtpT2... |
| puneetpunamiya@gmail.com | | 23 Mar 2017 | 23 Mar 2017 | cNlAwOUv2uisjankKaTf6M2ix... |
| abcd@yahoo.com | | 14 Feb 2017 | 14 Feb 2017 | hAMAGIBAY3bqvMoN349Tjg4r... |

Fig -2: Authentication in firebase

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Units
├── 1: 'Kg'
├── 2: 'Dozens'
├── 3: 'Units'
└── 4: 'Litres'

Users
├── 6MdTQ59didHieW8owIapUH1Dsw2
│   ├── Inventory
│   │   ├── 1100: 14
│   │   ├── email: 'manojkatkar27@gmail.co
│   │   └── name: 'manoj katkar'
├── DrBh6mvTL7RY5Gf3M769aDptJH2
│   ├── Inventory
│   │   ├── 1100: 22
│   │   ├── email: 'deshpande.anup24@gmail.co
│   │   └── name: 'Anup Deshpande'
├── FxuMrBaXaAaPkfjBw1Ln9E2pZJq2
│   ├── Inventory
│   │   ├── 102: 11
│   │   ├── email: 'pallavigeete99@gmail.co
│   │   └── name: 'Pallavi Geete'

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Fig -3: Authentication in firebase

4. BARCODE SCANNING

Each system is build up in a way to reduce the maximum efforts of the user.

QR codes are much feasible when they are applied in this very system. QR codes are categorize in two types i.e. a one dimensional code and B two dimensional code. Two dimensional code has a advantage which is it can be scanned from any direction. QR code can be scanned from top to bottom or vice versa in terms of mobile scan and get the value stored into database perfectly. Recommendation system uses barcodes to store items into inventory. Advantage of QR code is it takes less space than the conventional one dimensional barcodes.

5. MOBILE VISION

Mobile vision is basically an API made for barcode scanners. With just simple addition of dependency one can use its powerful features.

QR codes can have different fields in it. Some of them can be stated as URL, text, email etc. They can be used in mixture also.

These various fields can be identified by the mobile vision API provided that user allow camera permission for that particular application.

This thing will help food recommendation system in many ways. Just to name a few it provides ability to attach expiry date of the particular item with the QR code and whenever that item is of no use anymore the system will let you know about it

6. EXISTING SYSTEM

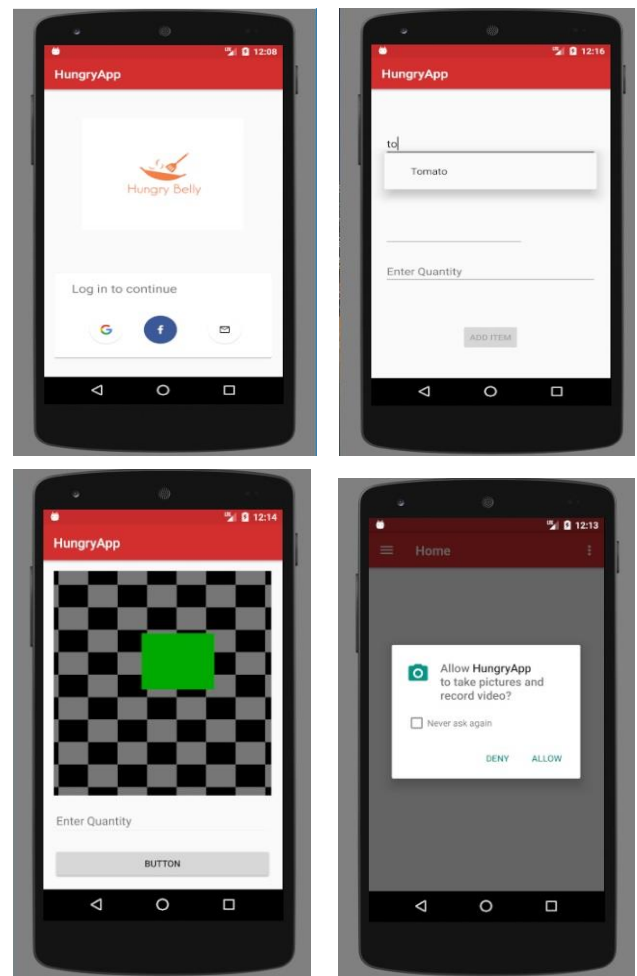
1. Today's system uses single dimensional scanning methodologies like barcode scanning

2. QR-code like technologies uses two dimensional scanning

7. PROPOSED SYSTEM

System uses two dimensional scanning methods for convenient scanning which is vertical and horizontal scanning. Two dimensional scanning solves problem of scanning which occur in single dimensional that is invalid barcode. With use of firebase application Json like databases are used for storing items given by user. It produces particular recipe depending on individuals taste. Recommender system make good use of decision tree so that to relate patterns in terms of calendar. Great advantage of system is it will remind the user for items which has less quantity or the particular item is about to end.

8. APPLICATION SAMPLE SHOTS



9. CONCLUSION

The system provides a user friendly interface which would interactively receive information from approached system which gives optimal solution for user.

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