

## Event Management System

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**Abstract** – Lot of events occur in institutes that might be academic, cultural etc. Success of event is not defined by just organising events but is defined by the level of participation also. Hence there is a need of effective medium for communication between the organisers and the willing participants. After the outbreak of covid-19 pandemic all the events such as cultural, technical and others in educational are being conducted virtually. These type of situations makes success of events challenging. there is a need to develop a effective medium of communication between and organizers of event and participants for success of events. Also to ensure digital cashless transactions for registering to events. In this paper we have described an android application which acts as a effective medium between the participant and organizer and has UPI integrated which ensures cashless transactions. We have also introduced about automatic text recognition for easy registration of participant.

**KeyWords:** Transactions, Eventmanagement, participant, organizers, UPIINDIA, Text recognition , etc

### 1. INTRODUCTION

Organising an event is not an easy task. Participation in an event is the thing which defines the success of event. After the outbreak of covid19 pandemic all the events such as cultural, technical and others in educational are being conducted virtually. Hence there is a requirement for effective medium of interaction between the organizers and the willing participants. In this paper we have described a cross-platform mobile application relating to a system to schedule and register for both free and paid technical or recreational events conducted by various college clubs or entities. The Application provides the user especially the participant, the reliability and ease in finding the schedule and information of upcoming and/or ongoing events and register for the same at a single destination without any hassle and effort. The app also features a personalized Home Feed which facilitates user engagement where the Organizers have the liberty to post event updates, announcements, messages and the users can interact with them. A user has the facility to resolve their queries regarding the event with the clubs or entities in the chatroom. Once registered for an event, the user is eligible to receive notifications and reminders regarding the event. The application is also enabled with the automatic verification of the account by recognition of the ID using the ML. The data of the users are stored in the Firestore firebase for real time update and manipulation. Many different and secured

payment gateways are also included for secure payments in the paid sections of the application.

### 1.1 Secure payment gateways

We have implemented UPI payment gateway in the application described in this paper to allow the participants to register easily to the paid events.

### 1.2 Automatic text recognition from the ID using the ML Toolkit

We have implemented automatic text recognition in the application described in this paper to allow the participants to register easily to application just by scanning their ID.

## 2. Literature review

Many researchers have described about different approaches for event management system. Mahalakshmi, S.Gomathi and S.Krithika [1] presented a paper on Event Management System. The paper told about maintaining the College Event information and organizing the event and to send the Student Registration time through sums with verification code to the student using mobile application based on Android App.

Mr. J Nagesh Babu, Ms. Srujana J M, Ms. Srusti U M, Ms. Sushma Kulkarni [2] presented a paper on Event Management System. The paper describes about building an event management app that is controlled by admin and has android as platform and SQL as backend.

The users have to make profiles and then accordingly can participate in registrations and as such. The rates would have to be verified by admin. The design is simple so that even a layman can use it easily.

Sachin AjayKumar Pasi, Prof Altaf Taher Shah, Prof Dr Amol B Kasture [3] described about implementing a web app as an event management system with backend as SQL. The users have to make a profile for access to events and this whole thing could be used to colleges, marriages, parties etc.

A Khan, A Pundalik, T Shinde, S Gupta, SJ Patil [4] presented a paper Event Management System. This paper proposes an Event management system specifically made for school where it is administered by HOD and an admin entity. It proposes changes in existing system to make it more efficient and safer to use.

### 3. Methodology

In this, application there are two roles Participants and organizers.

Participants can register, login, verification, update information/details about self, view events, register in an event, pay for a paid event, ask queries from organizers, view organizers info, receive notifications.

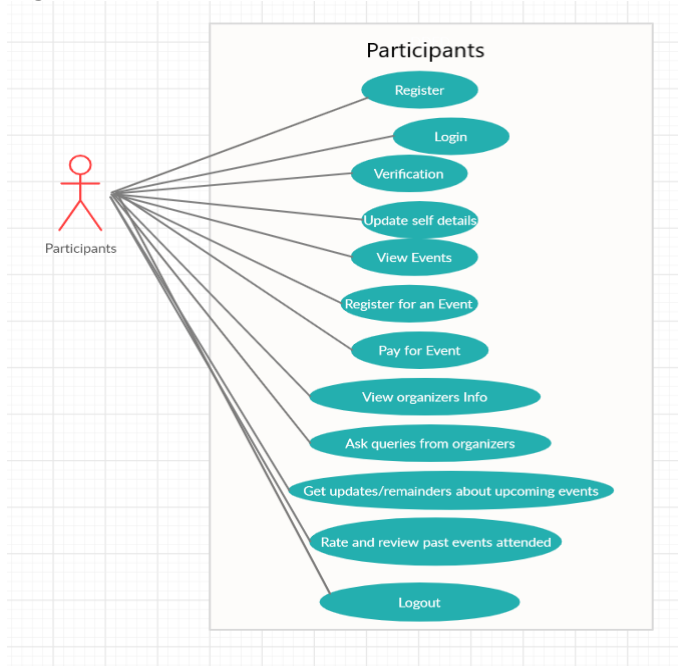


Figure 1:Usecase diagram of participant

Organizers can login, update info about self, add event, update event, delete event, get registered participants list, post messages/announcements, answer queries.

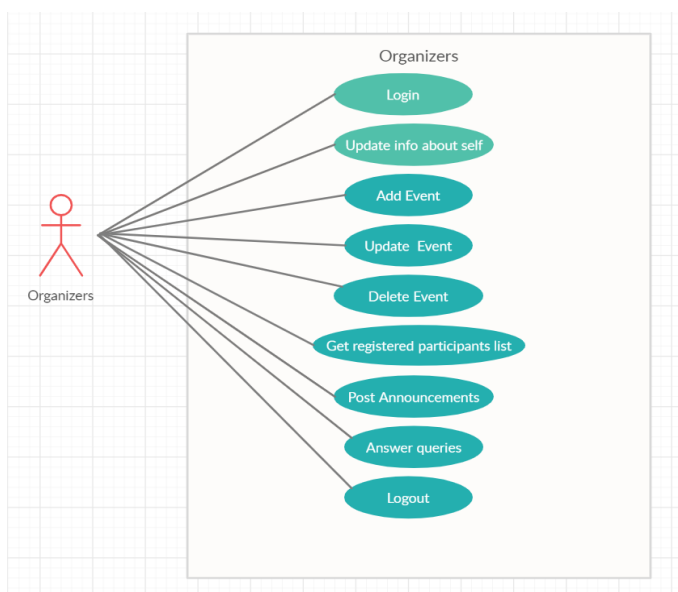


Figure 2:Usecase diagram of organizers

### 3.1 Secure payment gateways

Unified Payments Interface (UPI) is a system that combines multiple bank accounts into a single mobile app, merging several banking features, Seamless fund routing & merchant payments into one hood.

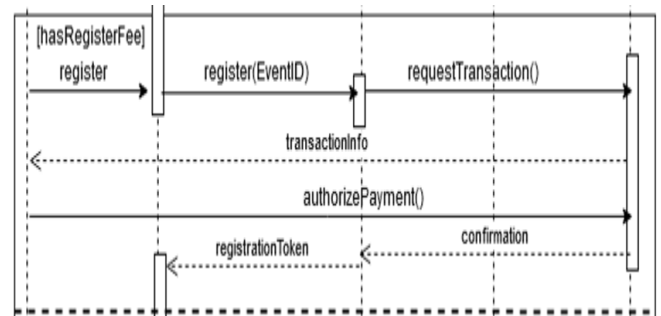


Figure 3: Architecture diagram for USER of UPI

It also allows for “Peer to Peer” collect request which can be scheduled according to need and paid as per requirement and convenience.

#### 3.1.1 UPI payment:

UPI payment gateway has been implemented in the application described in this paper to allow the participants to register easily to the paid events using UPI Pay plugin. This plugin is used to integrate UPI Options in Android app. We can use this plugin to perform transaction to any UPI ID or to any Account number.

#### 3.1.2 Classes to know for integrating UPI with android (FLUTTER) applications

1. **UpiIndia** - It is the main class containing two methods:
  - a. **getAllUpiApps()** - It takes:
    - i. bool allowNonVerifiedApps: This includes apps whose verification are nor verified yet.
    - ii. List[UpiApp] includeOnly: List of UpiApps which should be shown by hiding others.
    - iii. bool mandatoryTransactionId: Should include those apps which do not return Transaction ID or not.
  - b. **startTransaction()** - It takes:
    - i. double amount: Amount to transfer (in ₹)
    - ii. UpiApp app: Which app to use to do the transaction
    - iii. String currency: Presently only supports INR
    - iv. bool flexibleAmount: Should be Set to true to allow user to fill the amount
    - v. String merchantId: Merchant code if present

- vi. String receiverId: ID of the receiver
- vii. String receiverName: Name of receiver
- viii. String transactionNote: A note about the transaction
- ix. String transactionRefId: Reference Id of transaction
- x. String url: For some extra information

2. **UpiApp** - It has supported apps. It is also the model class for the apps returned by the method `getAllUpiApps()`.
3. **UpiResponse** - We use this to get response from the requested app.
4. **UpiPaymentStatus** - Use this to check if transaction was a success or not.

### 3.2 Automatic text recognition from the ID using the ML Toolkit

Every application asks for credentials while creating a new application. So does the application described in this paper as shown in Figure 4.

However we have added one more way of providing credentials through the ID card using automatic text recognition as shown in Figure 5.

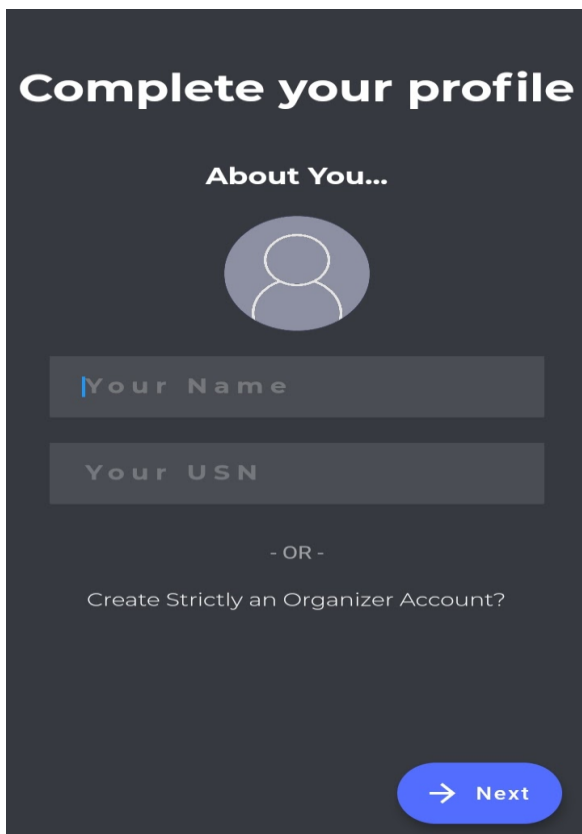


Figure 4 : Credentials asked in application

Our application uses ML Kit's text recognition APIs to recognize text in any Latin-based character set. These APIs can also be used to automate data-entry tasks such as processing credit cards, receipts, and business cards.

#### ML kit

ML Kit consists of both a general-purpose API which can be used for recognizing text in images, such as the text of a street sign, and one more optimized API for recognizing the text of documents. The general-purpose API consists of both on-device and cloud-based models. However Document text recognition is available only as a cloud-based model.

The text recognition API uses an unbundled model which has to be downloaded. We can even perform the download when the app is installed or when it is first launched.

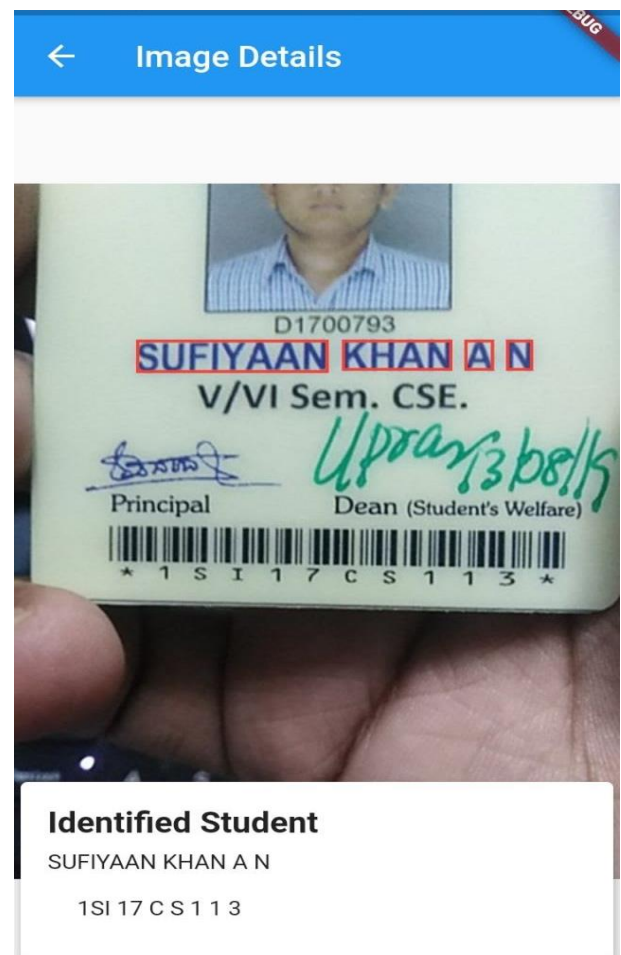


Figure 5: Text recognition

Figure 5 Shows how the application recognizes the text from an ID and respective details are displayed below which can be used in the place where the application required credentials.

Similarly the text recognition from ML kit can be used specifically for any project, based on the specific credentials required we can use the ML kit to recognize and extract those credentials from IDs.

We have to keep few guidelines about image for accurate working of this feature some are mentioned below.

### Input image guidelines

1. For ML Kit to accurately recognize text, input images must contain text that have pixel range of atleast 16x16. But also there is generally no accuracy benefit for characters to be larger than 24x24 pixels.
2. Image focus can also affect text recognition accuracy. We should ask user to recapture image if results are not as expected.
3. Image should be captured under sufficient light otherwise it may affect the result accuracy.
4. If we are recognizing text in a real-time application, we should consider the overall dimensions of the input images. Smaller images can be processed faster. To reduce the latency, we have to ensure that the text present in image occupies as much of the image as possible, and we have to capture images at lower resolutions.

### Recognize text in images

To recognize text in an image, run the text recognizer as described in below steps briefly.

1. Prepare the input image  
We can create input image from different sources such as Bitmap, file URI, ByteBuffer or Byte array or media.Image. The prepared image is passed to the text recognizer.
2. Get an instance of TextRecognizer
3. Process the image
4. Extract text from blocks of recognized text

When the text recognition operation succeeds, we will get a text object. A Text object contains the full text recognized in the image and contains zero or more TextBlock objects.

Each TextBlock represents a rectangular block of text, which contain zero or more line object which intern have element object which represent words and word-like entities such as dates and numbers.

For each TextBlock, Line, and Element object, we will get the text recognized in the region and the bounding coordinates of the region.

### 4. CONCLUSIONS AND FUTURE WORKS

Events management not only means organizing the events but also to make sure that the participation is good enough. The project described is an approach to act as a medium of communicating and notifying the willing participants. We have developed the project hassle free i.e the participant can register easily by just scanning his ID and their credentials will reach the organizers.

Similar to that of text recognition we can use image recognition and recognized image can be used as a profile picture or for authentication of the user.

UPI payment is integrated with the application which allows the users to pay for the premium events using any of there applications like googlepay, phonepay etc. The callback added ensures the user gets registered to event soon after payment is successful.

So our future work will be on image recognition from the ID of user and triggering notification of new events according to user interest with the help of similarity learning.

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