**K.J.Somaiya College Of Engineering**
**(Autonomous College Affiliated to University of Mumbai)**

# Progress Report Project B

*Text in italics is explanatory and should be deleted in completed documents.*

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|---|---|
| **Project Name** | Kisaan Bandhu - A farmer grain assistant application |
| **Project Members** | 1711005 - Meet Bhanushali |
| | 1711038 – Govinda Patel |
| | 1711055 – Parth Sheth |
| | 1711061 – Shailesh Upadhyay |
| **Reporting period** | Jan-March 2021 |

## Section One: Summary

In this reporting period we have completed work of about 85% of the scope we had defined in our problem definition.

We have completed the farmer side module where we have completed tasks such as getting the location co-ordinates of the farmer during registration, use of CNN model for identifying the product category, successful listing of the product for sale.

From the buyer side we have completed work such as listing down of all the products available over application for sale, functionality of add to cart, tracking of the current status of the product already bought.

From the Driver side we have completed implementation and embedding of maps in the application for route tracking for pickup and delivery, use of modified Knapsack and routing algorithm for best and most efficient route which will maximise the profit for the farmers.

## Section Two: Activities and Progress

| **Activities** | **Status** |
|---|---|
| • Successful registration of user's location using GPS services on android device. | **Complete** |
| • Capturing image of the product to be sold by the farmer. | **Complete** |
| • Generating dataset of products using Web Scarping and Selenium model as input in our CNN model. | **Complete** |
| • Application of CNN (machine learning) model to identify the product category. | **Complete** |
| • Listing and display of the product over application for sale. | **Complete** |
| • Use of Firebase for persistent image upload and retrieval. | **Complete** |
| • Buying and final billing of the products bought. | **Partial** |

| | | | |
|---|---|---|---|
| | • Use of modified Knapsack algorithm to track the pickup and delivery route. | **Complete** | |
| | • Identifying all the co-ordinates of nearest APMC's using Web Scrapping. | **Complete** | |
| | • Embedding of Maps in the application for route tracking purpose. | **Complete** | |
| | • Optimising the route for driver for best profit for the farmer. | **Complete** | |
| | • Validation – such as number input,password etc. | **Partial** | |

## Section Three: Institutional & Project Partner Issues

NA

## Section Four: Outputs and Deliverables

https://drive.google.com/drive/folders/1xrH4iCGStB4T-_rFhb4q9t3Zught3wzJ?usp=sharing
https://github.com/meetb007/kissan-bandhu

## Section Five: Outcomes and Lessons Learned

- CNN model
- Selenium for Automation
- Mapbox implementation
- API hosting using different platforms
- Integration of different languages such as python, Dart(flutter) and Nodejs
- Image resizing for faster uploads and response.
- Use of firebase for persistent image upload and retrieval
- Web Scraping for APMC data

## Section Six: Usage of Tools

**Frontend**

- Flutter
- Mapbox

**Backend**

- Nodejs
- Python
- Mongodb
- Postman
- Firebase
- Heroku
- Repl
- Google Colab

## Section Six: Evaluation

- On implementing CNN model, we found that the image size matters a lot when we need fast response. Hence some image resizing techniques must be used for efficient use of application and faster response.
- Image stored on hosting platform cannot be persistent. i.e. if the server is restarted all the images are lost. For this there needs to be alternative which can be used as a persistent image storer. For this reason we have used Firebase to store our images which are uploaded in the application. Also Firebase provides a faster retrieval of images thus reducing the response time.

## Section Seven: Dissemination

NA

## Section Eight: Risks, Issues and Challenges

● **Risk** :

- Sensitive and personal information must be only accessed by authorised personnel. For example while buying some product over application care should be taken such that confidential data of other users in the system isn't revealed. Hence we have to devise a mechanism to ensure this as confidentiality is most important in a database system.

● **Issues :**

- Farming has become a secondary profession looked as a symbol of primitiveness and people practicing it leaving it at a very alarming rate, soon this project will become obsolete as none will be left to use it.
- After amendment of the agriculture act 2020 protest may impose heavy taxes on deals outside of APMCS to make balance between deals in APMCS and deals outside it. That will make this project financially infeasible.
- Since in future, as we have mentioned in future scope, we will try to predict the future demand of the seasonal produce and try to channelize their production to avoid price crash, we may face some environmental and societal hindrance from those who do not try change for the benefit of others as well but would rather stay with the primitive methods and activities.

● **Challenges :**

- The main challenge is single/multiple JOINS in the database which may or may not give high accuracy.
- A challenge which we will face is to gain a good hold in the current market situation where people tend to generally avoid using some new application if it is not friendly and easy to use.
- Use of Travelling salesman problem for routing will not be able to give the most efficient route if the nodes are of extreme values.
- Another obstruction which we will face would be by the current dealers as we tend to remove this dealer cycle and hence they will try to hinder our smooth implementation.

● **Constraints :**

- Currently supports only english language.
- Another technical constraint of our application will be that it will be majorly using GPS (Location services) for best working, so the users of our application must be having some source to update their location (if not by using GPS).

**Section Nine: Collaboration and Support**

NA

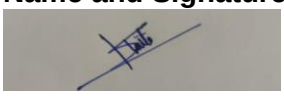
**Section Ten: Next Steps**

- Complete integration of the codes.
- Completing of the billing part left.
- Important validation for fields such as passwords etc.

**Comments by Examiner (s):**

Payment gateway if possible
Complete integration with final Billing
Sell product & image validation (edit option)
Remaining Validation

**Name and Signature of Examiner(s):**



**Prof.SMITA R SANKHE.**

Rajni Pamnani