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A19	Personal Development Skills for Computing (DipIT01)	A2	Group Report

FARMING AID

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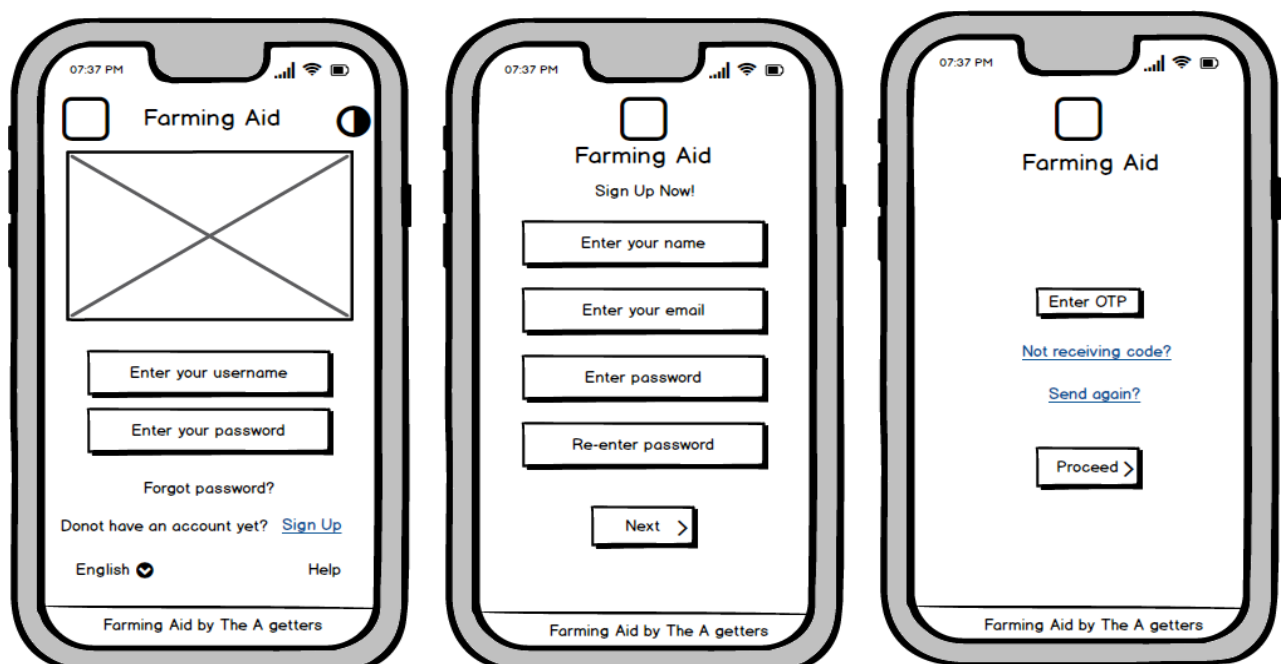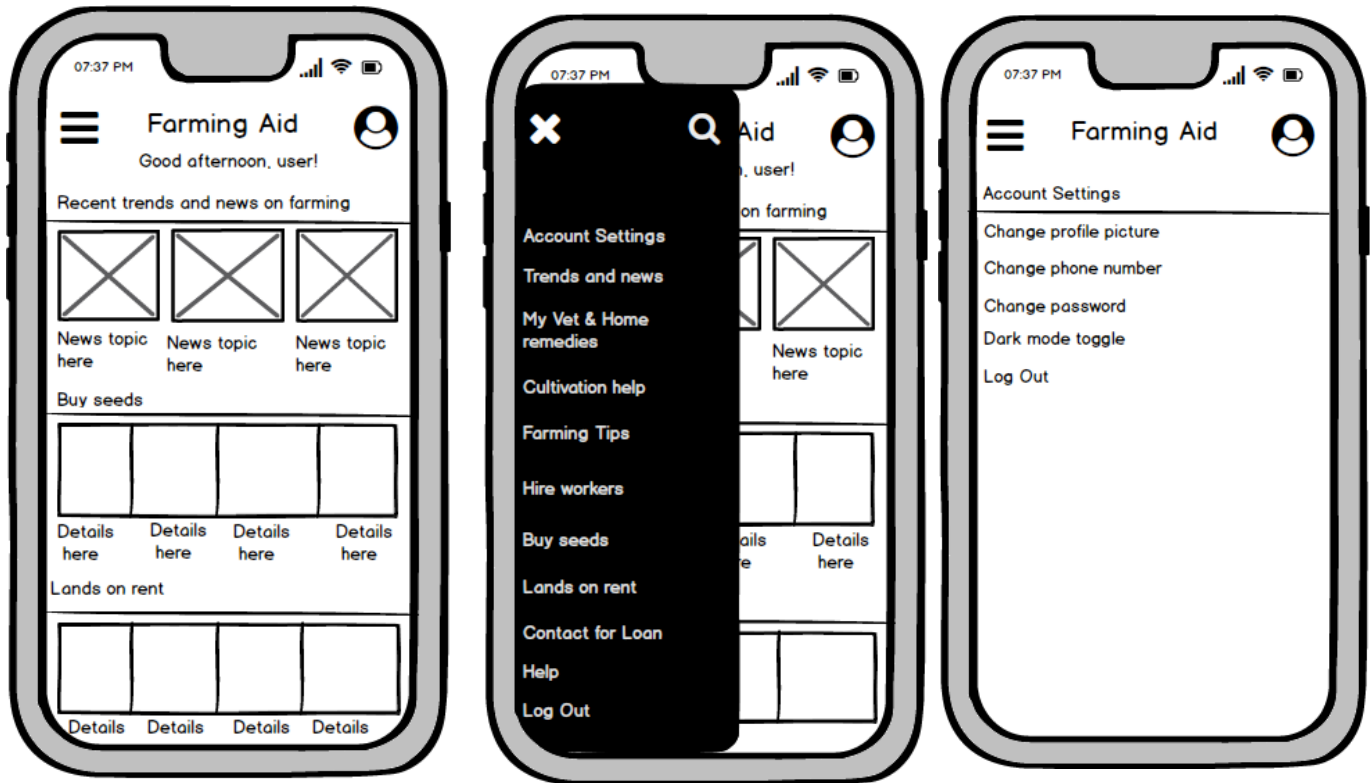
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Farming Aid

1. Introduction

"Farming Aid" is an application that is targeted towards farmers for their growth and development. With the help of this application, farmers can get properly informed about the cultivation process, seasons and other facts about vegetables, fruits, flowers and even be updated on recent trends, ideas & market strategies. This application is also linked with a bank to provide loans to farmers for making their ideas in farming come true. It will be beneficial for both the farmers and the bank. All the home remedies and some simple veterinary ideas for the cure of minor diseases seen in plants and animals are also provided in this app.

2. Working mechanism

First of all, the app should be downloaded from the play store or the app store. After installing, a new account should be registered and the user should be logged in. After that, the home screen loads up with the most used features. Users can see recent trends and news on farming at the home screen and click the story title to load the full story in a browser. Below the recent news and trends section there exists a section to buy different types of seeds for the purpose of farming and below that recent lands on rent are shown. These are the highlights of the home screen. Users can also update their profile information. There also exists a dark mode switcher on the settings page. More features like Hiring workers, home remedies, farming tips, cultivation help and seasons and many more features can be accessed through clicking the sidebar on the left.

3. Wireframe

Screen 1:

07:37 PM

Farming Aid

Good afternoon, user!

Recent trends and news on farming

| News topic here | News topic here | News topic here |

Buy seeds

| Details here | Details here | Details here | Details here |

Lands on rent

| Details | Details | Details | Details |

Screen 2 (menu):

07:37 PM

Aid

user!

on farming

Account Settings

Trends and news

My Vet & Home remedies

Cultivation help

Farming Tips

Hire workers

Buy seeds

Lands on rent

Contact for Loan

Help

Log Out

News topic here

ails   Details
e   here

Screen 3:

07:37 PM

Farming Aid

Account Settings

Change profile picture

Change phone number

Change password
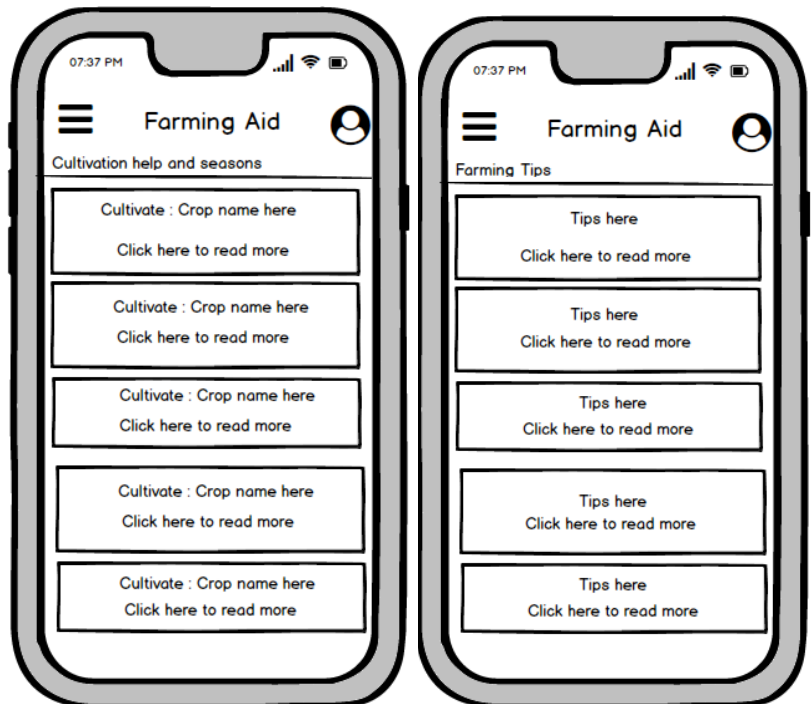
Dark mode toggle

Log Out

4. Problem Domain:

Although being an agricultural country, farmers in Nepal face many problems in farming. Some of them are included below:

i)   Farmers in Nepal believe in the traditional way of farming. They find it very difficult to cope up with technology and sometimes are not ready to accept changes. The development of technological systems in farming is at the pace of a tortoise.

ii)   Farmers are not getting systematic market systems and there is a huge difference in the amount between selling and buying the same item. Because of their lack of knowledge about the market system at present, they are forced to sell the items at a low-price enduring loss or very small profit.

iii)   In this technological era, everything keeps getting changed and updated at a rapid pace. Farmers are not able to understand and witness the change. Simply, they are unknown about the recent trends and news on farming.

iv)   Hiring workers is very difficult as of present because the shortage of workers is gradually increasing. Most of the youths today are disinterested in farming activities. Lack of knowledge in this sector also contributes to youth moving away from farming and agriculture.

v)   Lack of research activities and information about hybrid crops, good insecticides, pesticides & fertilizers. Farmers, being unknown about current affairs, can easily be brainwashed to use wrong products.

vi)   90 percent of vegetable seeds that are in use in Nepal are imported (Lama, 2019). On the other hand, export is negligible.

vii)   Taking out a loan is a very tedious job.

viii)   Difficulties in finding good land to rent for cultivation and lack of communication between lessee and landowner. Due to less communication, the needs of both parties remain unsatisfied.

ix)   Farmers are unknown about the remedies of small diseases seen in plants and animals. In addition, Veterinarians are also not easily accessible.
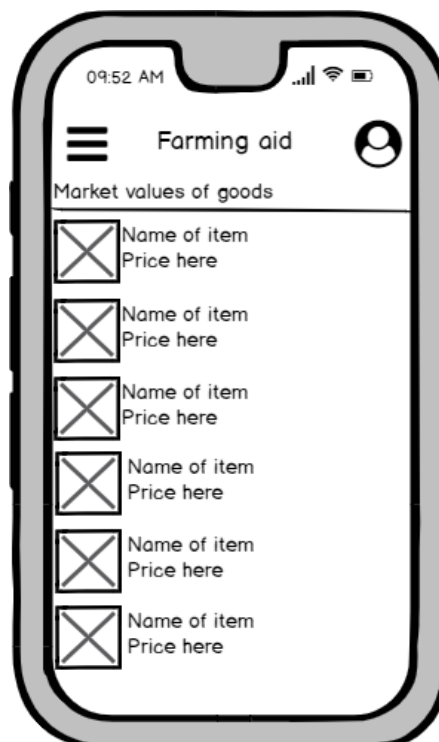
5. Solutions

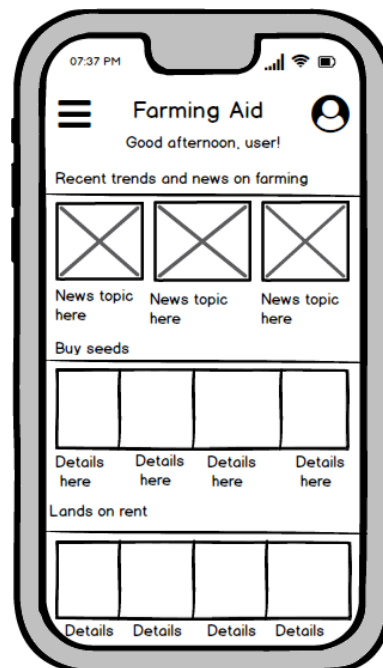The problems mentioned in the problem domain can be solved by the app in the following ways:

i) Awaring people about new farming techniques & technologies, farming tips and cultivation help along with the information about seasons of different goods. The application would be so easy to use and navigate to make farmers familiar with the rising use of technology.
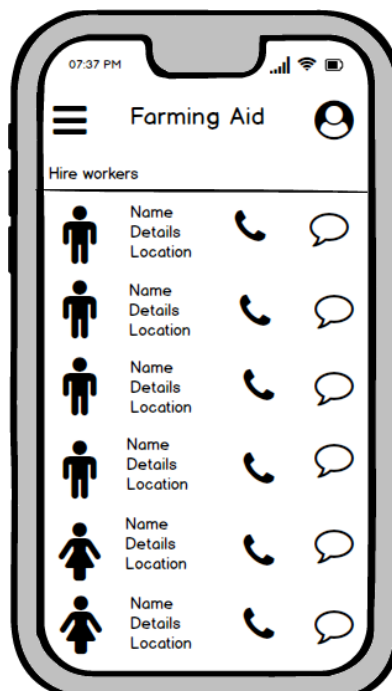
ii) With the help of this application, farmers are easily able to evaluate the market value of their production. Only precise information is kept in the app and is also updated daily.
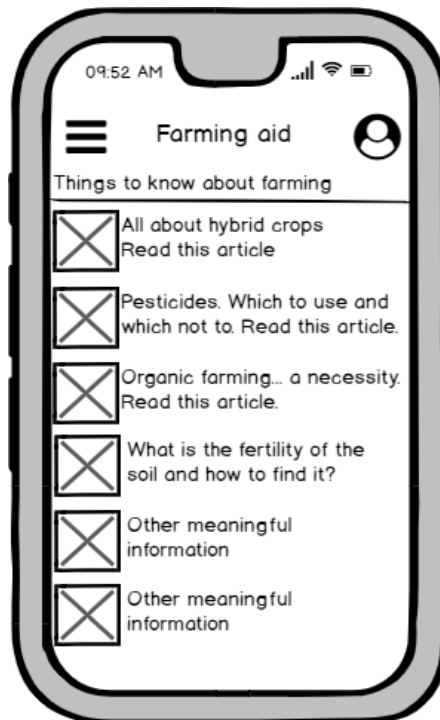
iii) Making people known about recent trends and news on farming and sharing information. The trends and news updated in the app are from various trusted news sources of Nepal.
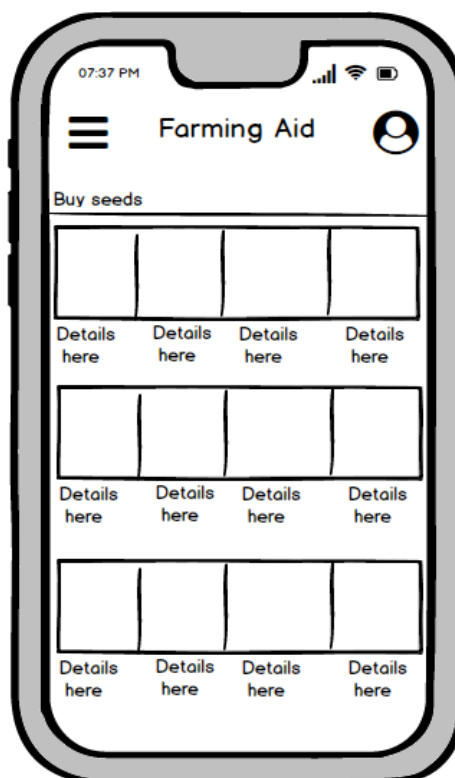

iv) Hiring workers is one-click away. Users can contact the worker through messages or directly through the phone. A complete description of workers is provided in the app. App also sorts the workers through the distance from the user.
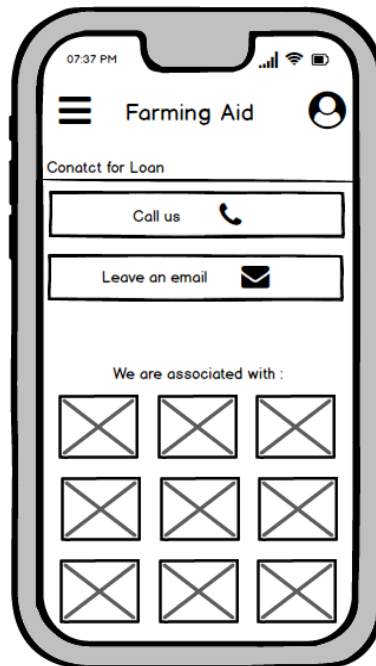
v) Awaring people about the fertility of the soil, hybrid crops, organic farming, harmful effects of pesticides along with their limitation and promotion of organic pesticides.
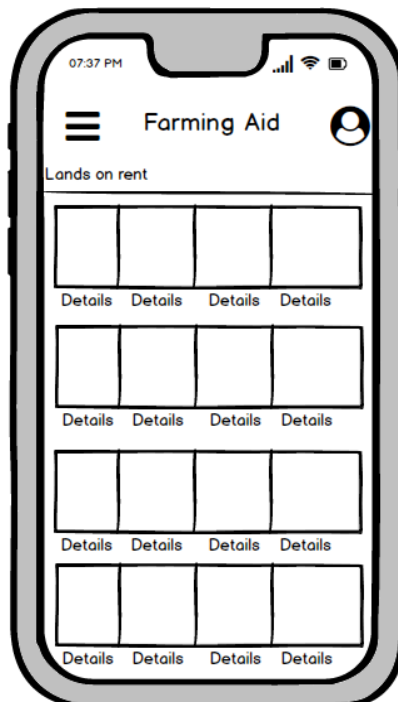

vi) Preserving local seeds, promoting and selling them to help in independence from other countries. Only national seeds are sold in the application.
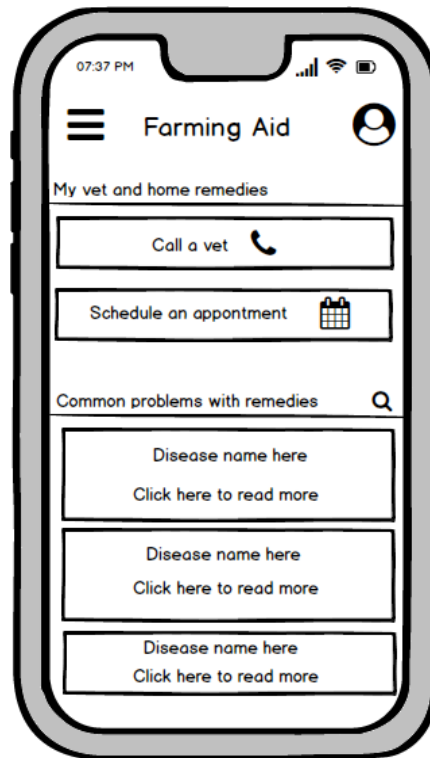
vii)   Having a good affiliation with Prabhu bank to act as a bridge between the user and the bank so that the farmers could express their idea and based on it, receive a good amount of loan to implement the idea.

viii)   Users who want their land to be rented can post the details and pictures of their land on the app and other users can directly contact the landowner if interested.

ix)   The app makes it easier for people to contact a vet in need and also contains the description of common problems seen in animals and plants along with their remedies.

6. Technical skills and resources

6.1. Human resources:

Javascript developers

The application would be using an open-sourced framework of Javascript i.e. React Native for development. the application would be available for both platforms; Android and iOS. React Native have been chosen for development as it is mature, feature-complete tool with fast and high performance. Developing in React is also beneficial as the production cost is low because the same code works for both android and iOS devices. The app would have a visually attractive UI and good hardware integration. Both the frontend and backend parts would be handled by the developers.

Database Administrator (DBA)

A person who has central control over the system is called a database administrator (DBA). Risk and vulnerabilities arise when it comes to data. Since the data of users need to be stored on the server and data needs to secured, a DBA is needed to be hired for data integrity and database management (USNEWS, 2019).

Business Analyst (BA)

A business analyst supports companies with data analysis to improve processes, products, services, and software. A BA acts as a bridge between IT and the business (Pratt & White, 2019). A BA would be hired to understand the app from different perspectives and help in the overall growth of the application.

CEO

A CEO would also be needed to manage the overall operations and resources and plan and execute directives. Not only that, he/she would also be responsible for managing financial actions during the building of the application.

6.2. Hardware and software requirements

i) **Desktops or Laptops:**

At least 3 desktops or laptops would be necessary with minimum requirements of 4 GB RAM, i5 8th gen processor, and 250GB HDD.

ii) **A server:**

A server is required to store all the data. Amazon Web Services (AWS) is used for this purpose as it is cost-effective and one of the most secure web services.

iii) **Internet connection:**

Online accessibility for this project is also a crucial factor. Since this application operates on the Web, all events in the system must be registered, forwarded to the server and information should be collected. Minimum 60 Mbps of connection speed will be required for this application.

iv) **Software required:**

Since the application is made using React Native, any text editor could do the job. VSCode is preferred.

v) **OTP Verification:**

OTP Verification would be done by OTPSMSAPI or with Sparrow SMS. They are the cheap tools to integrate.

vi) **Time:**

The application is estimated to take around 7 months to develop up-to final build and publish. The time interval may differ according to the specifications and expertise of the programmers.

6.3. Legal Procedures

- Company registration
- Approval from Nepal Rastra Bank
- Tax registration
- Connecting with Prabhu Bank to easily act as a bridge between user and the bank itself.

6.4. Capital required for app development

For the successful development of the app, it is necessary to be financially capable. A fixed amount of capital is required to purchase the required hardware components as well as the software. The estimated cost is listed in the table below:

Cost headings	Estimated amount
Amazon Web Services (AWS)	Rs. 4,500-6,000 per month
Two Javascript developers	Rs.30,000 each per month
Desktops/ Laptops	Rs. 80,000 each
Internet Connection	Rs. 19,000 per year
Salary of a CEO	Rs. 70,000 per month
Salary of a Business Analyst	Rs. 40,000 per month
Salary of a Database Administrator	Rs. 50,000 per month
Apple Developers account	Rs. 11,300 per year
Google play store publishing cost	Rs. 3,000
Legal Cost (Company and tax registration and approval from Nepal Rastra Bank)	Rs. 20,000

Since the time duration for the development of this app is 7 months, the capital needed would be approximately Rs. 18,40,000.

7. Conclusion

"Farming Aid" is a solution to most of the problems faced by the farmers of Nepal. With its clean interface, it is a very easy tool to operate for farmers. This app helps its users to solve different kinds of problems related to farming and encourages people to engage in agricultural sectors. It can provide the necessary requirements for cultivation which helps the farmers to grow a large quantity of crops by using modern technology. It can play a vital role to change the economic condition of Nepal and all the farmers of Nepal.

8. References

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