Project Proposal

Project Title

Let's Agrii - A breakthrough for farmers.

Group member's Name and Enrollment Number

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Section 1: Proposal

DUMMY CUSTOMER

Our dummy customer is a 34-year-old man (farmer), ChunniLal.

On the Bundelkhand farm, a few kilometers northeast of Madhya Pradesh is where *Chunnilal* toils on the land making gradual progress as a small-scale farmer owning six-hectare land for farming. Every year he struggles for a better livelihood, expecting an excellent harvest despite lacking in knowledge of marketing, and wanna sell his products at a good price. Because of poverty, he is unable to purchase heavy machines, and sometimes natural calamities like heavy rain ruin all his crops. Unaware of weather forecasting he is unable to protect his harvest.

What he needs:

1. A platform where he can easily sell his product at a good price.
2. A market from where he can purchase good quality seeds and also lend heavy machines at a reasonable price.
3. A platform that is aware of the weather before everything gets ruined.

DESCRIPTION OF PROBLEMS SOLVED BY SYSTEM AND THEIR IMPORTANCE

The Indian Agricultural market does not have a clear pricing strategy for agricultural products. Farmers spend hours and days of hard effort in harvesting a crop to its yield. An inescapable monsoon season causes further damage to farmers' lives. After all this, farmers just have to sell their products to a mediator for a low price.
LET'S AGRII is fully based on farmer's needs and requirements, it fulfills all the basic needs of the farmers and also provides reasonable prices for their crops while still keeping the interface user friendly with next to zero training required.

- NO FARMER MANAGEMENT SYSTEM WHICH MEETS THEIR REQUIREMENT

  There are already many farmer management systems but all of them are based on farms like crop production, track and measure field activities, manage risk portfolios, etc..these all are dependent on how a farmer can maximize his crop production but there is no management system that is based on the basic needs of farmers.

- NO EXPLOITATION OF BOTH FARMERS AND CONSUMERS

  The biggest problem with farmers is they are not getting paid enough, and one of the major reasons is MIDDLE-MEN. The middlemen **provide quick funds for seeds and fertilizers**, and even for family emergencies, said the farmers. The agents also help grade, weigh, pack and sell harvests to buyers. The presence of Too Many Intermediates/Middlemen results in the exploitation of both farmers and consumers with the middlemen offering **lower prices to farmers** and charging higher prices from the consumers, results in a higher transaction cost and low price realization by the farmers in a regulated market here we provide direct communication between farmers and consumers. So this problem can be solved easily.

- NO EXTRA LABOUR REQUIRED

  Farm machinery helps farmers to produce the required kind of goods in the quantity demanded, unlike the traditional days where humans and horses were excessively used. It has reduced the farming time with ample work done in the stipulated time it improves the quality of goods and reduces labor and its cost. But many farmers of India are not so economically developed so that they can buy these expensive machines. Here we also provide solutions to these farmers as they can lend such machines for their use at a very reasonable price.

- USER FRIENDLY AND INTUITIVE

  LET'S AGRII. will entail a list of core features to be used and exploited by a user. However, unlike other agriculture tools, it will be easy to use right from the get-go and have little to no learning curve, making the whole process for farmers simple and practical.

DESCRIPTION OF WHAT THE SYSTEM WILL DO

This is a list of features that we plan to implement:

- Purchase seeds from the co-farmers.

  For the people who work independently, selling and investing can be easier and more reasonable through the synergy effects.

- Chatbot
  Directly ask questions and queries regarding the issues and the problems related to agriculture, and the experts out there can give instant advice and solutions to the farmers for their problems and customized seeds.

- Lend Heavy Machineries
  Without basic machinery and repair skills, farmers might waste valuable time and favorable weather conditions for important steps in farm production. Nobody can't afford downtime. The farmer knows that keeping the farm equipment in peak time is a top priority so here they can lend the heavy machinery to save time and money as well.

EASE OF PROPOSAL

Let's Agrii- A breakthrough for farmers, a web application consists of an immense number of functions that are not that easy but an essential part for the project and are required for the software to be considered useful. This enables us to ensure that the project becomes Neither too easy nor too ambitious. It is also not very difficult to be accomplished if made with proper planning and by using software engineering paradigms. The base functionality involves multi-user collaboration which is tricky enough for the project to be challenging. If the project proves to be too easy, there is a huge scope for special features that can be included. Since one of our main goals is to keep the interface user-friendly and not to over-engineer the product, we have a reasonable ceiling to additional features to keep the application from getting heavy or intimidating.
The team of 3 is committed to spending 6-8 hours per week working on the project and hence consider it to be doable in the timeframe of one semester.

Section 2: Feasibility Report

OUTLINE

1. INTRODUCTION

The majority of farmers in India still follow the traditional techniques in farming and face day-to-day problems due to the lack of information regarding weather forecasts, crops, fertilizers, new technologies, etc. The use of Information & Communication Technology (ICT) to solve these day-to-day problems of farmers, improve decision making, production, and efficiency of the agriculture sector has been regarded as an idea with immense potential.

Thus our product is an e-commerce application for farming and agricultural products for farmers, product suppliers, and even for the consumers to keep everything in place.
The purpose of the application is to provide a connection between different roles in the agriculture industry by creating intuitive and practical software, providing a user-friendly platform that generates market opportunity for farmers and industry buyers and allows farmers to complete the professional task with ease.

1.1 OVERVIEW OF THE EXISTING SYSTEM AND TECHNOLOGIES:

Digital Agriculture has led to the rise and development of many such web apps. These websites are very useful for the agriculture community to keep updated on the latest technology, latest market rates, weather forecasting, government policies and schemes for farmers, latest technology videos, news related to agriculture, ask from experts, etc. These sites provide help to Indian farmers by reducing the information gap between them and the government.

1.2 SCOPE OF THE PROJECT:

Main actors of the system:

1. Farmers
2. Agriculture Experts
3. Buyers

Use Cases for the actors of the system:

1. Farmers:

- Chat with Experts: Directly ask questions & queries regarding agriculture-related problems.
- Direct connection of farmers with supplier and Consumers
- News: Latest agriculture news and govt. policies & schemes

2. Agriculture Experts:

- Chat with Farmers: Share instant advice & solutions to farmers for their problems & customized needs.

3. Buyers:

- Buy the crop harvest which matches their expected range of quantity, price, and quality.

1.3 DELIVERABLES:

A web-based application with user interface made using ReactJs and backend done with Node js, MongoDB & Express, with integrated database. It'll be a small web application in terms of memory with an easy interface to use.

2. FEASIBILITY STUDIES

2.1 FINANCIAL FEASIBILITY

The web application has a relatively low cost of operation with the majority of the cost being associated with hosting fees. Since the bandwidth required is on the lower end, initially, a free hosting web service would be appropriate enough.
The software will be run on a freeware model which can be scaled up to a paid premium level for professional organizations and companies.
The main cost segments would be bug fixes and scaling maintenance if and when needed. Since, the software does not require any training, that negates training costs as well. Being a web app instead of installable software reduces the resource requirements and related costs on the user's end.
As a part of this, the costs and benefits associated with the proposed system are compared and the project is economically feasible only if intangible and tangible benefits of increased efficiency, productivity, organization
and effective collaboration far outweighs the costs.
Being a software-based system, which will be available as a prototype with certain cloud storage restrictions, it would take up minimal cost. Since the system consists of multimedia data transfer, there will be storage limitations of up to **5GB**. The development of the project is based on open-source software tools.

2.2 TECHNICAL FEASIBILITY:

The project is a complete web-based application. The main technologies and tools associated are:

- React
- CSS
- MongoDB
- Express
- Node js
- Web API

Software engineering paradigms
Each of the technologies is freely available and the technical skills required are manageable. Time limitations and the ease of implementing using these technologies are synchronized and are negligible. From this, it is pretty clear that this website is technically feasible. For now, we will host the website in a free website hosting space but for later it will host on paid hosting space according to appropriate bandwidth.

2.3 RESOURCE AND TIME FEASIBILITY:

Resources that are required for the proper implementation of this project are:

1. Programming devices like personal computers, workstations, or laptops.
2. Hosting space on the local domain (freely available)
3. Programming tools for building the
4. Web and Hosting services for client-server flow
5. Github as a collaboration tool and version control

The time required to store and process this information is negligible for modern-day processors which work at very high clock speed.
Thus, it's evident that this system has the required resource and time feasibility.

2.4 RISK FEASIBILITY:

Risk feasibility can be discussed in several contexts.

2.4.1 THE RISK ASSOCIATED WITH A SIZE **:**

- ESTIMATED SIZE OF THE PRODUCT IN THE LINE OF CODES:
  Being an application with many functionalities, the project will contain a significant amount of code lines. The file sizes and the complete project size will not exceed 250MB.

- ESTIMATED SIZE OF PRODUCT IN MANY PROGRAMS:
  It will be constructed as a single application with login for farmers, buyers, and experts. Depending on the access rights, the contents will be shown or hidden.

- SIZE OF THE DATABASE CREATED OR USED BY THE PRODUCT:
  Normalization would be done on the relational database to ensure the most efficient storage and avoid redundancy.

2.4.2 CUSTOMER-RELATED RISKS

- The site currently runs on the assumption that both the buyers and sellers are credible users. However, there is always a risk about their actual credibility.
- Though our project aims at an easy-to-use interface that requires the minimum technical knowledge, there may be users who are even less technically sound.

2.4.3 TECHNOLOGY-RELATED RISKS:

All the technologies involved are quite well established and have integrated well into regular user activities. While the team is new to the field of web development, due to the established nature of technologies involved there exists apt data and an active community available to aid problem resolution.
Do the system requirements demand the creation of new algorithms, input, or output technology? The application will have several algorithms for the transactions of the crop

details from farmers to buyers, and fetching the details of market price and daily news on agricultural activity.

2.4.4 NUMBER OF PROJECTED CHANGES TO THE REQUIREMENTS FOR THE PRODUCT? BEFORE DELIVERY? AFTER DELIVERY:

The requirements are identified before the implementation phase. Being a general product (not specific to a single user) the requirements will be changed only if new functionalities are added to the system.

2.5 SOCIAL/LEGAL FEASIBILITY:

The project uses freely available development tools, and the code will be widely available as a GNU- General Public License-based open source project to be further modified.

3. REFERENCES:

https://www.google.com/
https://www.livemint.com/industry/agriculture/middleman-matters-behind-indian-protests-against-farm-reforms-11606908597506.html
https://www.predictiveanalyticstoday.com/top-farm-management-software/#:~:text=Farm%20Management%20Software%20is%20used,streamlining%20production%20and%20work%20schedules.