International Journal of Engineering and Advanced Technology (IJEAT)
ISSN: 2249-8958 (Online), Volume-3 Issue-5, June 2014

Krishi Sahyog: Image based Cognitive E-Learning

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Abstract*— Krishi Sahyog is a web-based solution developed to provide basic education about farming techniques and usage of tools. The uniqueness of this project lies in the fact that it takes into account the present day farming scenario. Krishi Sahyog will help the farmers to understand various farming techniques and will acquaint them with the latest tools and technologies by means of video tutorials in regional languages. This Human Computer Interaction project, an e-learning website, is to help them get a hang of the latest technologies and the latest tools albeit not having any basic technical education, which will also make them aware of the market rate, owing to which they will be aware of the current rate of their product as compared to current market scenario. Also, the weather forecast feature will help them plan their crop accordingly.

***Index Terms*—Human Computer Interaction, image based e-learning, video tutorials, optimization, regional languages.**

I. INTRODUCTION

This project details the development of an e-learning website for farmers providing them basic technical education. The method used to do this is image based cognitive e-learning, wherein the information is provided in the form of images and videos in regional languages so that it reaches the masses. The uniqueness of this project lies in the fact that it takes into account the present day scenario. The farmer is not only provided with systematic organized education by video tutorials and audio recordings but also prediction of the weather conditions of the following year. Besides, the project includes additional modules for weather prediction, current market rate and product management.

II. LITERATURE SURVEY

The survey research revealed that the best measure to solve the problem of lack of technical education was to impart basic technical education to the farmers. And the most feasible way of doing this was deciphered to be via internet, reaching to the masses in a single handed approach. Thus, e-learning was decided to be the medium via which the masses were to be educated. Cognition means the mental action or process of acquiring knowledge and understanding through thought, experience, and the senses. Image based cognitive e-learning is exactly the need of the hour, because, not all the farmers are educated enough to read through the website. This is exactly where images and videos solve the problem.

Manuscript published on 30 June 2014.
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III. PREVIOUS WORK

Today, 75% of our population is somehow related to the agriculture and allied activities but still contribution of agriculture to our economy is just 21%. We have attained overall growth of 8% but the growth in agricultural sector is not even 3.5%. One major reason for the poor condition of farmers is – lack of education. The most feasible way of imparting technical education was deciphered to be via internet, reaching to the masses in a single handed approach. Thus, e-learning was decided to be the medium via which the masses were to be educated. There are various projects undertaken which facilitate the e-learning for peasants but the main problem which is not taken into consideration is that farmers may not be able to decipher the information provided by reading, majorly owing to the high illiteracy rate that prevails in the country.

IV. PROPOSED APPROACH

Uniqueness of Krishi Sahyog is that it tackles the problem by following image based and audio based learning. Most farmers are illiterate but can easily understand information in the form of video or audio, provided in regional language. Krishi Sahyog, by the means of audio and video tutorials, helps farmers to understand about various farming techniques. The website is robust, user friendly and uses flexible system architecture support as shown in Figure 1.

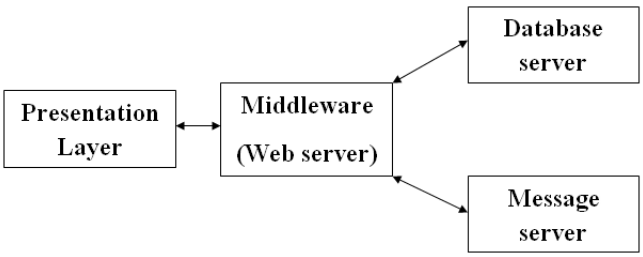

Figure 1: Flexible System Architecture Support.

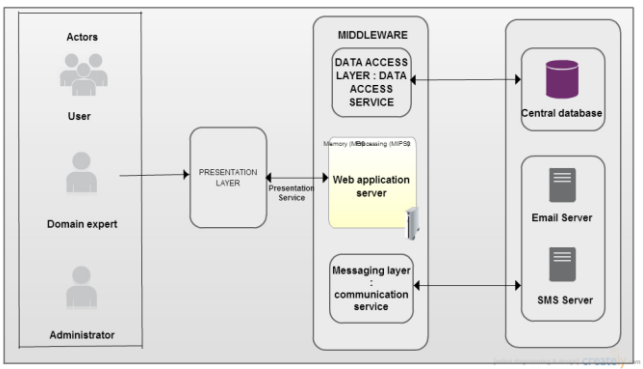

Figure 2 : System Design Workflow

Published By:
Blue Eyes Intelligence Engineering and Sciences Publication (BEIESP)

V. FOUR-FOLD CHARACTERISTICS

A. Profile Properties

Krishi Sahyog provides a feature called profile properties, which allows admin to store user-specific data. This feature is similar to session state, except that the profile data is not lost when a user's session expires. The profile-properties feature uses a profile, which is stored in a persistent format and associated with an individual user. The information is managed by avoiding the creation of a new database altogether. In addition, the profile makes the user information available using a strongly format that can be accessed from anywhere in the application. This also provides a generic storage system that allows admin to define and maintain almost any kind of data while still making the data available in a type-safe manner.

B. Clear and User-Friendly Navigation

Krishi Sahyog's web design contains a user-friendly navigation scheme that allows visitors to quickly find the information needed. Important links are easy to find and given logical, simple, and include easy-to-understand labels. Calls to action are placed in conspicuous spots within the navigation's scheme. To search appropriately from a plethora of content, a search box is created to make it faster to reach more specific pages within the website.

C. Search Engine Optimization and Web Compatibility

Krishi Sahyog website's SEO entails the insertion of search keywords in website content, an appropriate link profile and social media signals. The site caters to variety of web browsers and can easily be rendered on various resolutions, screen sizes; and with the increasing popularity of mobile devices, websites functions properly on the plethora of these types of devices.

D. Security Goals

The goal of system security is to have controlled access to resources.

- Integrity: It ensures safety and aggregation on content and data.
- Authorization: It ensures secure authorization model to maintain security.
- Availability: It ensures that services are available whenever required.
- Resilience to attacks: It is required to sustain the functionalities when a part of secure information is compromised.
- Freshness: It ensures that malicious content is filtered through preventing loss of resources and maintaining the accuracy of the system.
- Anonymity: This service helps for data confidentiality and privacy.
- Access control: It prevents unauthorised access to a resource.

VI. CONCLUSION

Krishi Sahyog consists of a 'Navigation Video' which will guide the user as to how to use the web site. The site consists of video tutorials that will teach the farmers about the modern techniques of farming and irrigation. Another important feature is that of Market Rate and Current Rate. This feature will help the farmers in deciding the Best Price of their commodity congruous with the current market trend. So in totality the project aims at targeting the farmers, educating them through video and audio tutorials. A dynamic mobile application using Android programming is the future scope which will contain similar features but with few extra add-ons which will notify the farmers about the new trends. The app will also consist of a messaging portal that will notify the farmers about the climatic condition and weather forecast.

VII. ACKNOWLEDGMENT

We are grateful to Vivekanand Education Society's Institute of Technology for providing continuous support throughout the work.

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