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**PROJECT SYNOPSIS**

**OVERVIEW:**

Krishi Mandala is based on web-based application and it has been developed using python and sqlite. The objective of this project is to connect farmers with customers. Also to upload and maintain data of users and farmers with a content management system that would allow crops information to be updated securely. The web portal will have an online interface in the form of a content management system that will allow farmers to sell their crops, fruits, vegetables; admin to manage reports of crops, seeds, fertilizers; bloggers and farmers details, customer database and reporting of the sales, orders.

The Krishi Mandala website will have an E-commerce features that will allow users to order crops, check crops price dynamically and also view static data, payments, order tracking and they can gather information regarding crops by blogging.

**PROBLEM STATEMENT:**

India is an agricultural country with around 70% of its people depending directly or indirectly upon agriculture. The number of farmers who are committing suicide day by day is increasing.

The indebtedness of farmers is one of the main reasons driving them to commit suicide. Farmers will not get sufficient money for what they sell. This is because of many individuals who is responsible for transporting products from farmers to customers. Crop fluctuations may lead to confusion to farmers to grow the particular crop

**OBJECTIVE:**

The main objective of this project is to connect farmers directly with their customers.

This may help farmers to get sufficient money without any intermediates. And also helps customers to get fresh products and at low price directly from farmers.

Static data visualization helps farmers to predict the price of a particular crop from previous year and also helps farmers to grow crops more efficiently with the help of information (videos, blogs) provided.

**COMPONENTS:**

This project will be divided into following separate components:

* The content management system
* The e-commerce website/portal
* The crops, fruits, vegetables, fertilizers, seeds, farmer, customer and blogger database
* Reporting of the sales, orders, data visualisation
* The data security system.

**MODULAR DESCRIPTION :**

These are the main modules of the project:

* **Products Module**: we can create, read, update and delete products from this module
* **News feed Module:** Updates and current affairs related to farmers will be posted here.
* **Farmers Module:** Farmer’s can register and get access to sell and buy products.
* **Blogging Module:** Blogger’s can blog here with admin’s permission.
* **Customers Module**: All the operations related to customers operations, is managed by this module
* **Data Visualisation Module**: User and farmers can view the ups and downs in price throughout the year in pictorial representation(graph).
* **Shopping Module**: It has been developed for managing customer’s shopping.
* **Admin Module**:

**Requirement Analysis:**

**Hardware requirements**

* Processor: Pentium V, 2.1GHz and above.
* RAM: 4GB (minimum) or 8GB (recommended).
* Hard disk: 80GB or above.
* Monitor: 15” CRT or LCD monitor.
* Keyboard: Normal or Multimedia
* Mouse: Any compatible mouse.

**Software requirements**

* Operating System: Windows 10/ Linux Kernel (4.0 or later) operating system
* Front End: Bootstrap CSS 5
* Back End: Db Browser sqlite3
* Coding Language: Python
* Tools: Visual studiocodeEditor2019, git.

**FEASIBILITY REPORT**

**Technical Feasibility Study**

The system technically feasible because here we are using Python and sqlite database which is free to use for educational purposes. From the user’s point of view, it is feasible because it can fulfill user's requirements and maintain their records.

**Operational Feasibility Study**

Operational Feasibility is the measure of how well the proposed system solves the problem and specifies the requirements in the system development. degree of providing service to requirements is analyzed along with how much easy product will be to operate and maintenance after deployment.

This application is feasible as this as this system can be implemented in the organization there is adequate support from the management and users. Being developed in python so that the necessary operations are carried out automatically and it is user friendly.

**Economic Feasibility Study`**

Economic Feasibility study cost and benefit of the project is analyzed. Means under this feasibility study a detail analysis is carried out what will be cost of the project for development which includes all required cost for final development like hardware and software resource required, design and development cost and operational cost and so on.

**INTRODUCTION TO DBMS**

The database is a collection of inter-related data which is used to retrieve, insert and delete the data efficiently. It is also used to organize the data in the form of a table, schema, views, and reports, etc.

For example: The college Database organizes the data about the admin, staff, students and faculty etc.

**Advantages:**

* Controls database redundancy
* Data sharing
* Easy Maintenance
* Reduce time
* Multiple user interface

**INTRODUCTION TO RDBMS**

Relational database is most commonly used database. It contains number of tables and each table has its own primary key.

Due to a collection of organized set of tables, data can be accessed easily in RDBMS.

In a relational database, each row in the table is a record with a unique ID called the key. The columns of the table hold attributes of the data, and each record usually has a value for each attribute, making it easy to establish the relationships among data points.

**NORMALIZATION**

Normalization is the process of organizing the data in the database.

Normalization is used to minimize the redundancy from a relation or set of relations. It is also used to eliminate the undesirable characteristics like Insertion, Update and Deletion Anomalies.

Normalization divides the larger table into the smaller table and links them using relationship.

The normal form is used to reduce redundancy from the database table

**INTRODUCTION TO PYTHON**

Python was created by Guido van Rossum, and released in 1991.Python is an interpreted, object-oriented, high-level programming language with dynamic semantics. Its high-level built-in data structures, combined with dynamic typing and dynamic binding, make it very attractive for Rapid Application Development, as well as for use as a scripting or glue language to connect existing components together. Python's simple, easy to learn syntax emphasizes readability and therefore reduces the cost of program maintenance. Python supports modules and packages, which encourages program modularity and code reuse. The Python interpreter and the extensive standard library are available in source or binary form without charge for all major platforms, and can be freely distributed.

**Features of Python**

1.Easy to Learn and Use: Python is easy to learn as compared to other programming languages. Its syntax is straightforward and much the same as the English language.

2. Interpreted Language: Python is an interpreted language; it means the Python program is executed one line at a time. The advantage of being interpreted language, it makes debugging easy and portable.

3. Free and Open Source: Python is freely available for everyone. The open-source means, "Anyone can download its source code without paying money.

4. Object-Oriented Language: Python supports object-oriented language and concepts of classes and objects come into existence. It supports inheritance, polymorphism, and encapsulation, etc.

5. Extensible: It implies that other languages such as C/C++ can be used to compile the code and thus it can be used further in our Python code. It converts the program into byte code, and any platform can use that byte code.

6. Large Standard Library: It provides a vast range of libraries for the various fields such as machine learning, web developer, and also for the scripting

7. GUI Programming Support: Graphical User Interface is used for the developing Desktop application.

**WHY PYTHON?**

\*Python is an interpreted, object-oriented, high-level programming language with dynamic semantics. Python is compatible with different platforms like Windows, Mac, Linux, Raspberry Pi, etc.

\*Python has a simple syntax as compared to other languages.

\*Python allows a developer to write programs with fewer lines than some other programming languages. Python runs on an interpreter system, means that the code can be executed as soon as it is written. It helps to provide a prototype very quickly.

\*Python can be described as a procedural way, an object-orientated way or a functional way. The Python interpreter and the extensive standard library are available in source or binary form without charge for all major platforms, and can be freely distributed

The following are some reasons why Python is an ideal language to create websites.

* The vast collection of libraries
* Relatively easier to learn
* Budget-friendly
* Excellent data visualization capabilities
* Secure and scalable

REQUIREMENT ANALYSIS

All possible requirements of the system to be developed and captured in this phase. Requirements are a set of functions and constraints that the end user expects from the system. The requirements gathered from the end user at the start of the software development phase. These requirements are analysed for their validity, and the possibility of incorporating the requirements in the system to be developed is also studied. Finally, a requirement specification document is created which serves the purpose of guideline for the next phase of the model.

Requirements Analysis is the process of defining the expectations of the users that is to be built or modified. It involves all the tasks that are conducted to identify the needs of different stakeholders. Therefore, requirements analysis means to analyze, document, validate and manage software or system requirements.

Requirements are descriptions of the services that a software system must provide and the constraints under which it must operate. Requirements can range from high-level abstract statements of services or system constraints to detailed mathematical functions specifications.

Requirement may serve a dual function

\*May be the basis of for a bid for a contract- therefore must be open to interpretation

\*May be the basis for the contract itself-therefore must be defined in detail

Both the statements may be called requirements.

**REQUIREMENTS**

Requirement analysis phase is divided into:

* Hardware Requirements
* Software Requirements
* Functional Requirements
* Non-Functional Requirements

**Hardware Requirements:**

These requirements include the **minimum processor speed, memory, and disk space required to install Windows.** There is no rigorous restrictions on the machine configuration. The model should be capable of working on all machines capable of supporting recent versions of any version of Windows operating system.

* **Processor:** Pentium V, 2.1GHz and above.
* **RAM:** 4GB (minimum) or 8GB (recommended).
* **Hard disk:** 80GB or above.
* **Monitor:** 15” CRT or LCD monitor.
* **Keyboard:** Normal or Multimedia
* **Mouse:** Any compatible mouse.

**Software Requirements:**

The software requirements are description of features and functionalities of the target system. Requirements convey the expectations of users from the software product. The requirements can be obvious or hidden, known or unknown, expected or unexpected from client’s point of view.

* **Operating System**: Windows 7 Or More.
* **Front End:** Bootstrap CSS 5
* **Database:** Db Browser sqlite3
* **Back End:** Python
* **Tools:** Visual studiocodeEditor2019, Git Bash.

**Functional Requirements:**

Functional requirements capture the intended behavior of the system. This behavior may be expressed as services, tasks or functions the system is required to perform. It specifies actions that a system must be able to perform, without taking physical constraints into consideration. Functional requirements the specify the input and output behavior of a system.

**Non-Functional Requirements:**

A Non-functional requirement is a statement of how a system must behave; it is a constraint upon the systems behavior. Non-functional requirements specify all the remaining requirements not covered by the functional requirements. They specify criteria that judge the operation of a system, rather than specific behaviors.

* Accuracy: The system should perform it’s process in accuracy.
* Modifiability: The system should be easy to modify.
* Security: The system should be secure and saving student’s privacy.
* Usability: The system should be easy to deal with and simple to understand.
* Maintainability: The maintenance group should be able to fix any problem occur suddenly.
* Speed and responsiveness: Execution of operation should be fast.