

Web Enabled Water Monitoring System

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Abstract—Now a day's government is facing a problem of corruption in water circulation process, in drought affected regions. With the existing system government is unable to monitor and control the distribution of water in such areas. We propose a new system which will circulate water in those drought regions without corruption.

In our system when the water tanks reach the drought areas the presence of the water tank is registered. Moreover system also uses 'light emitting diodes' to assure that the water tank has poured the water into the well. All this information will be also displayed on a website. So whenever the water tank fails to supply the water, the output will be automatically generated on the web page that the water tank hasn't reached the area and which helps authorities to take legal actions immediately. Therefore the system results in timely water supply, accuracy and perfection due to digitization and with no corruption at all.

Keywords— Radio Frequency, Light Emitting Diode, Random Access Memory, Hard Disk Drive, Monitoring

I. INTRODUCTION:

1. NEED OF SYSTEM:

India suffers a lot from a disaster called 'Drought'. Indian government puts on large amount of money for the drought affected region. But corruption takes place and the water is not properly supplied to the drought affected area. Instead of supplying more water to the region less amount of water is supplied due to corruption and people there are forced to suffer lot. The money just goes into the pockets of corrupt Ministers. There are human efforts required to register the number of tanks supplied for the drought affected region. Water is not timely supplied to the people suffering from the disaster and even sometimes water is not at all supplied to drought affected region and poor people suffer a lot. Due to this corruption also takes place at higher extent. The money of Indian government goes waste. Hence, a proper system is required to handle all this things. The system should care that the water is being properly reached to its destination i.e. the drought affected areas. If the water is properly supplied to the region then the system will also ensure that the money of

Indian government is being utilized properly for the welfare of people in drought affected area.

2. DETAILED PROBLEM DEFINITION

System is used for tracking the water tanks reaching the drought affected region. The aim behind this is Digitizing the whole system and minimizes human dedication for removing the corruption being done at human level.

II. FEASIBILITY OF SYSTEM:

1. TECHNICAL FEASIBILITY:

The assessment is based on an outline design of system requirement in terms of input, output fields and programs. This can be quantified in terms of volume of data, trends, frequency of updating, etc. In order to whether the new system will perform adequately or not, technical feasibility is carried out to determine the capability.

2. RELIABILITY:

As this system is web based, so it will be available to the user on 24*7. If any maintenance or update is necessary it will be performed weekly. Any server hardware related

downtime should be resolved and the service should be resolved within a two time period. External service should be resolved within three hour time period.

3. CRITICALBUG:

A complete loss of data or the inability to use certain parts of the system is considered as critical bug. It will be tried to resolve within a 24 hrs.Period using daily backup system.

4. SIGNIFICANT BUG:

Ability to view information that is supposed to be inaccessible to a user is considered a significant bug and the bug will be resolved within 11hrs period.

5. MINOR BUG:

If the information displayed on a user's screen is not correct information that is consider a minor bug and should be resolve in 6hrs period.

III. REQUIREMENT ANALYSIS

1. SOFTWARE SCOPE:

Requirement analysis helps software engineers to better understand the problem they will work to solve. It includes set of task that leads to an understanding of:-

1. What customers need..?
2. How end user will interact with the software....?

Therefore it is necessary to understand therequirement of customers.

2. RESOURCES:

SOFTWARE REQUIREMENTS:

Front end:

1. Visual studio 2005 and above.
2. Scriptinglanguage: VBScript
3. ASP.NET framework 3.0 and above

Backend:

- MSSQL server 2005 and above.
Operating system: windows XP and above.

HARDWARE REQUIREMENTS:

Ram:2 GB or more.

HDD:40 GB or more.

Processor: Pentium processor with 1 MHZ and above processing speed.

Components:

RF Transmitter and Receiver.

LPT port required.

IV. RISKMANAGEMENT

Risk concern future happenings; hence before embarking on the project it is necessary to receiver all risk that might be involve in it. These risks under each separate module have been documented before coding for the project was started. Although, there has been a considerable debate about the proper definition for the software risk, there is general agreement that risk always involves two characteristics.

Uncertainty:

The event that characterizes the risk may or may not happen; that is there is no 100% probable risks

Loss:

If the risk becomes a reality, unwanted consequences or loss will occur. Whenrisk areanalysed, it is important to quantify the level of uncertainty and degree loss associated with each risk.

To accomplish the effects of risk on the system,it mustbe categories as follows:

1. Performance risk
2. Business risk
3. Cost risk
4. Project risk
5. Technical risk
6. Predictable risk
7. Unpredictable risk

V. USE CASE DIAGRAM

Use Case Diagram demonstrates an arrangement of utilization cases and on-screen characters (an uncommon sort of class and their relationships).Use case outline address the static use case perspective of the framework. There graphs are particularly vital in arranging and demonstrating the conduct of the framework.

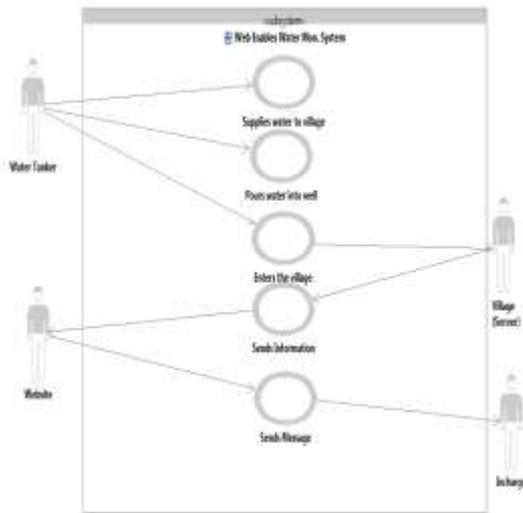


Figure 1: Use case Diagram

VI. ACTIVITY DIAGRAM

Movement outlines are graphical representations of work processes of stepwise exercises and activity with backing for decision, emphasis and simultaneousness. In the Unified Modeling Language, action necessities, framework documentation, client. Movement chart are expected to display computational and hierarchical procedure.

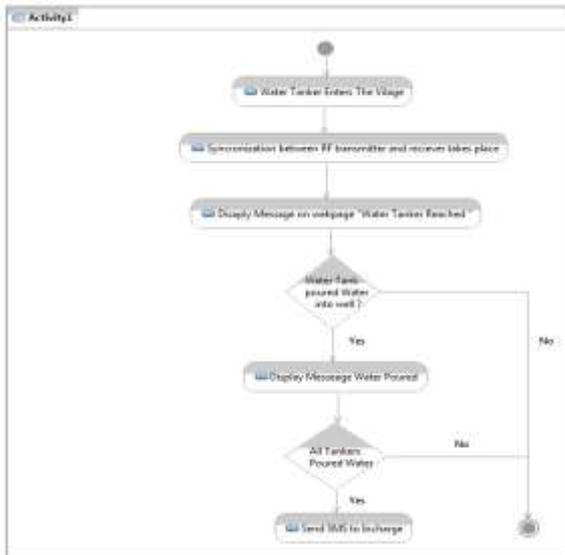


Figure 2: Activity Diagram

VII. TESTING

Testing is process of typing to discover every conceivable fault or weakness in a network product. In general, testing proves the presence of errors. Sufficient testing reduces the likelihood of existing, not discovered error conditions

within the test object. It does not verify that no more bugs exit, even if no more errors can be found. Testing is not approved that the system is free of errors.

1. TESTING OBJECTIVE:

The purpose of testing is to discover errors. Testing is the process of trying to discover every conceivable fault or weakness in a work product. It provides a way to check the functionality of components, sub-assemblies, assemblies and a finish product it is a process of exercising software with the intent of insuring that the software system meets its requirements and user expectations and does not fail in an unacceptable manner. There are various types of test,. Each test type addresses specific testing requirements.

2. TESTING PRINCIPLES:

Functional tests provide systematic demonstration that functions tested are available as specified by the business by technical manuals. Functional testing is centred on the following items:

- valid input:
Identified classes of valid input must be accepted.
- Invalid input:
Identified classes of invalid input mustbe rejected.
- Functions :
Identified functions must be exercised.
- Output:
Identified classes of application output must beexercised.
- Systems :
Interfacing systems or procedures must be invoked.

Organization and preparation of functional tests is focused on requirements, key functions or special test cases.in addition,systematics coverage pertaining to identify business process flows; data fields, predefined processes and successive process must be considered for testing. Before functional testing iscomplete, additional tests are identified and the effective value of current tests is determined.

3. SYSTEMTESTING:

System testing ensures that the entire integrated software systems meets requirements. It tests of configurations to ensure known and predicable results.an example of system testing is the configuration oriented system integration test.

System testing is based on process description and flows, emphasizing pre-driven process links and integration types.

4. WHITE BOX TESTING:

White box testing is a testing in which the software tester has knowledge of the inner working structure and language of the software, or at least its purpose. It is use to test areas that cannot be reach from a black box level.

5. BLACK BOX TESTING:

Black box testing is a testing in which the software tester has the knowledge of the inner workings, structure or language of the module being tested. Black box tests, as most other kinds of tests, must be written from a definitive source documents, such as specification or requirements documents.

6. TEST CONDUCTED:

Field testing will be performed manually and functional test will be written in detail.

a) SYSTEM TEST:

- 1 All field entries must work properly.
- 2 Pages must be activated from the identified link...
- 3 The entry screen, messages and responses must not be delayed.

b) FEATURES TO BE TESTED:

- 1 Verify that the entries are of the correct format.
- 2 No duplicate entries should be allowed.
- 3 All links should take the user to the correct page.

c) ACCEPTANCE TESTING:

User Acceptance Testing is a critical phase of any project and requires significant participation by the end user. It also ensures that the system meets the functional requirements.

VIII. ADVANTAGES

1. REDUCE HUMAN EFFORTS:

Due to total digitization in the system, human efforts required for calculating number for tanks supplied in drought affected area then, it is also simply known through website and quick action can be done for supplying the water.

2. ACCURECY AND PERFECTION:

Due to this system, it can be perfectly known that the water has been supplied or not. Also due to the accuracy of the system no one will even dare to take part in corruption.

3. NOCORRUPTION DUE TO DIGITIZATION:

As system is linked with website through internet, it can be immediately known anywhere and anytime that the water has been supplied or not. Hence there is no issue of corruption.

4. TIMELY WATER SUPPLY IN DROUGHT AFFECTED REGION:

Daily water supply in drought affected area is required .so this aim to supply water timely to the drought affected area is also achieve through the system. Feedback of this system will be satisfaction of people in drought affected area.

IX. DISADVANTAGES

1. HARDWARE NEEDS TO BE MAINTAINED:

Hardware used in the water Môn. System must be maintained properly for smooth functioning overall system.

X. APPLICATIONS

This system is applicable in drought affected region for proper and smooth distribution of water .this system reduces corruption and also ensures that a limitedlitter of water has been supplied in the region thus reducing wastage of water.

XI. CONCLUSION

Thus, our system is useful in drought affected region for proper circulation of water for benefit of people. The basic aim of our system is to reduce corruption as much possible. When all the water tankers supply the water properly a message is send to the supervisor in that area. That same system can be used for tracking the tankers that supply petrol, diesel and such things to their destination. In future scope this system can be used by the Indian government for welfare and betterment of poor people in India.

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