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SOIL MOISTURE ANALYSIS BY NOVEL IMAGE RECONSTUCTION ALGORITHM

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Abstract *Surface soil moisture is an important environment variable that is dominant in a variety of research and application areas. Acquiring spatiotemporal continuous soil moisture observations is therefore of great importance. Weather conditions can contaminate optical remote sensing observations on soil moisture, and the absence of remote sensors causes gaps in regional soil moisture observation time series. Therefore, reconstruction is highly motivated to overcome such contamination and to fill in such gaps. In this paper, we propose a novel image reconstruction algorithm that improved upon the Satellite and In situ sensor Collaborated Reconstruction (SICR) algorithm provided by our previous publication. Taking artificial neural networks as a model, complex and highly variable relationships between in situ observations and remote sensing soil moisture is better projected. With historical data for the network training, feed forward neural networks (FNNs) project in situ soil moisture to remote sensing soil moisture at better performances than conventional models. Consequently, regional soil moisture observations can be reconstructed under full cloud contamination or under a total absence of remote sensors. Experiments confirmed better reconstruction accuracy and precision with this improvement than with SICR. The new algorithm enhances the temporal resolution of high spatial resolution remote sensing regional soil moisture observations with good quality and can benefit multiple soil moisture-based applications and research.*

I. INTRODUCTION

Our ultimate goal is to prevent from the earth quake by analyzing a soil texture using novel image reconstruction algorithm.It also provide techniques to solve the location prediction problem and collect disaster data from server.

1.1 EXISTING SYSTEM

Identify and incorporate into the construction plans appropriate or remedial measures that will address potential problem areas that were identified in the site assessment and data collection phase. In situations where remedial action is delayed or it is impossible to correct or eliminate problem areas, allow for epicenter provisions to work around the area(s).Today, owners and constructors are bound to clearly defined duties and liabilities regarding the environment.Nearly all segments and sectors of the industry are affected by one or more environmental issues.Richter's scale is based on the maximum amplitude of certain seismic waves recorded on a standard seismograph at a distance of 100 kilometers (km) from the earthquake.

1.2 PROPOSED SYSYTEM

To address this issue, we propose System find the location which we are choose in mobile devices mutually generate location proofs and collect location details from server. The solution in relies on the fact that nothing is faster than the speed of light in order to compute an upper bound of a user's distance. Given a set of user location preferences, problem is to determine a location among the proposed ones such that the prediction of current place. Our goal is to provide techniques to solve the location prediction problem and collect disaster data from server.

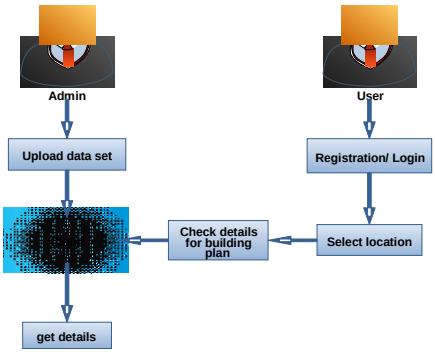
ADVANTAGES:

- Quick time to find the appropriate place.
- Easy to get lat and lag value.
- Time reduce.
- Overhead reduce.
- Easy to find details by fast searching result

2. OBJECTIVE

To determine whether the ground conditions in the area are suitable for the proposed development and evaluate the suitability of spoil for re-use in the construction of earth embankments and other earthworks at the site.

3. ARCHIETECTURAL DESIGN



4. REQUIREMENTS

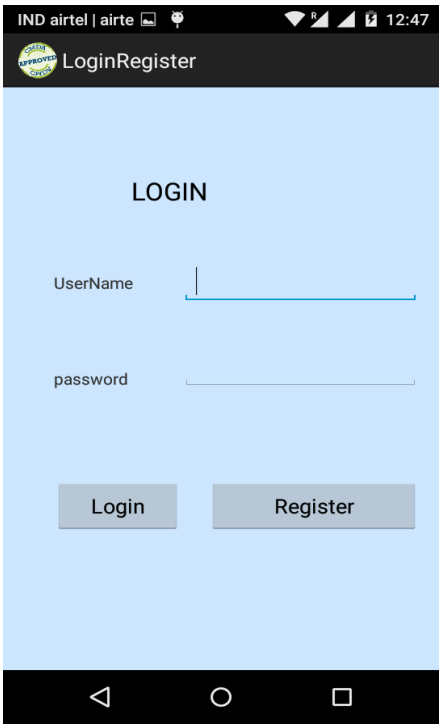
SOFTWARE:

- Operating System : Windows family
- Pages developed using : Java Server Pages and HTML.
- Techniques : Apache Tomcat Web Server 5.0, JDK 1.6 or higher
- Web Browser : Microsoft Internet Explorer.
- Data Base : MySQL

6. MODULES NEEDED

6.1 REGISTET AND LOGIN MODULE:

The aim of this phase is to allow a user and a server to negotiate a shared secret to authenticate succeeding logins for this user. Store the uset information in cloud server.



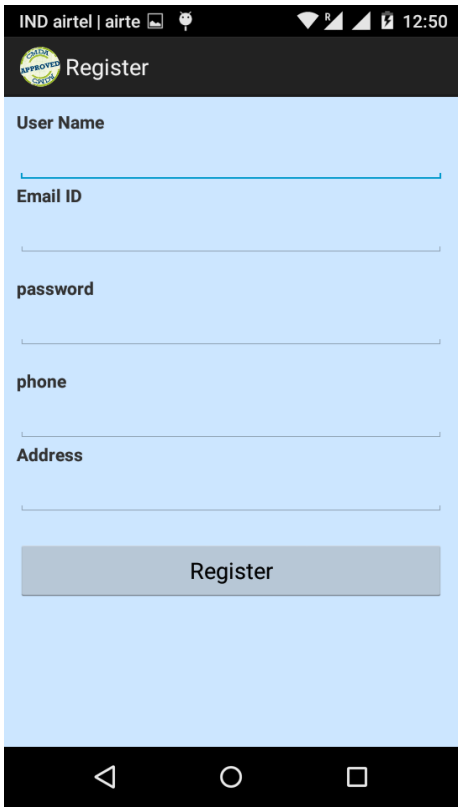


Fig. 2

6.2 UPLOADING COLLECTE DATASET:

For each new builder they need to know the details of places. So all users can check the details in corporation are difficult. So we can get all those place details and store the details to the server.

User can easily search the place and get those details (collect Chennai building plans and data's we collect and store in server.

6.3 ANDROID PERMISSION SETUP:

The Android permission system controls which application has the privilege of accessing certain device resources and data. The Android permission system does not allow users to grant or deny only some of the requested permissions, which limits the user's control of application's accessibility. we describe the core policy constructs that compose our CBAC policies. The Context Provider (CP) collects the physical location parameters (GPS, Cell IDs, Wi-Fi parameters) through the device sensors and stores them in its own database, linking each physical location to a user-defined logical location. It also verifies and updates those parameters whenever the device is re-located. The Access Controller (AC) controls the authorizations of applications and prevents unauthorized usage of device resources or services.

6.4 SEARCH BY LOCATION:

The Global Position System (GPS) is a positioning tool available in most smartphones which uses data signals from satellites to compute the position of the device. Data received from satellites contains the time stamp of sending, the orbital information, and the position of satellites. With at least three different satellite signals, the GPS uses the trilateration method to calculate the device's location by measuring the satellite signals time difference or their received signal strengths.

The location information provided from the GPS includes the latitude, longitude, altitude, and time. The accuracy of this method is estimated to be in the range of 50 to 100 meters.

We can give the lat, lat valur or provide teh area name to get the details. those will be search a the DB and send back to our search place.

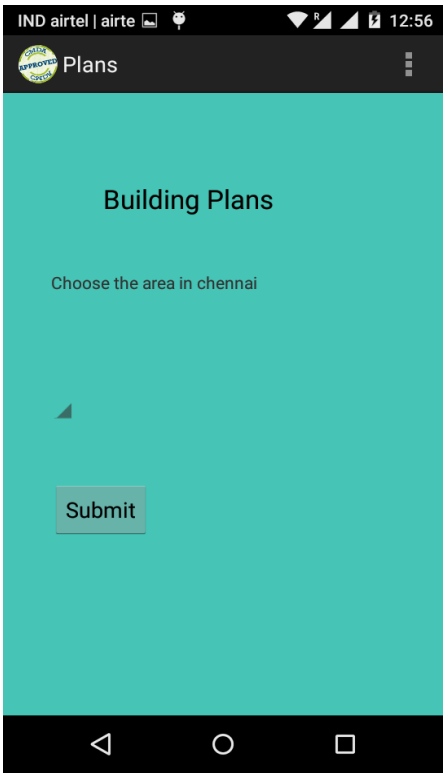


Fig. 4

6.5 AREA PLANNING DETAILS:

The Chennai Metropolitan Development Authority regulates developments in Chennai Metropolitan Area through issue of Planning Permission (PP) under section 49 of the Tamil Nadu Townand Country Planning Act 1971.
Chennai Metropolitan Development Authority has delegated powers to the Local Bodies within the Chennai Metropolitan Area to issue planning permission for ordinary buildings and buildings under normally permissible categories of Industrial, Residential, Institutional and Commercial use zones and also sub-divisions & small layouts. Chennai Metropolitan Development Authority issues planning permissions to major developments like Special buildings and Group Developments and other buildings under special sanction of the Authority by itself, layouts for which powers were not delegated to Local Bodies and for Multi-storeyed / IT Buildings (MSB) with Government's approval.

7. SYSTEM IMPLETATION

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System Implementation is the stage in the project where the theoretical design is turned into a working system. The most critical stage is achieving a successful system and in giving confidence on the new system for the user that it will work efficiently and effectively.
The existing system was long time process. The proposed system was developed using C#.NET. The existing system caused long time transmission process but the system developed now has a very good user-friendly tool, which has a menu-based interface, graphical interface for the end user.
After coding and testing, the project is to be installed on the necessary system. The executable file is to be created and loaded in the system. Again the code is tested in the installed system. Installing the developed code in system in the form of executable file is implementation.

PROTOCOL:

Initialization Factor:

k ------->System's security
C -------> client [user]
S -------> server (server donated by s)
Sm -------> system generate password
Pw -------> user password
Bo -------> user's biometrics data
SK -------> user's total credential

Factor registration:

The server (denoted by S) it is stored all user's credential and kept secret .The client (denoted by C), with an initial password PW, biometrics data and system password, registers on the system by running this interactive protocol with S. An execution of this protocol is denoted by

Factor-Reg
C [PW, BO, SM] <==========>S [SK] -------> {1, 0}

The information in square brackets indicates the secret value(s) known by the corresponding party. The output of this protocol is "1" (if the registration is successful) or "0" (Error message).

Factor Login Athentication:

This is another interactive protocol between the client C and the server S, which enables the client to login successfully using PW, BO, SM An execution of this protocol is denoted by

Factor-login-auth
C [PW, BO, SM] <==========>S [SK] **-------> {1, 0}**

The output of this protocol is "1" (if the authentication is successful) or "0" (otherwise).

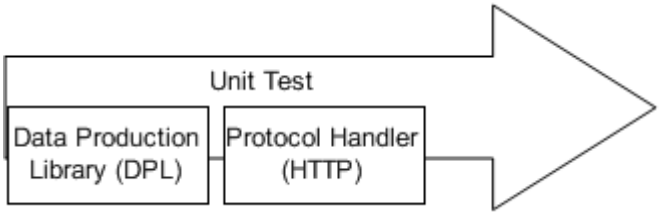
8. TESTING AND IMPLEMENTATION

PROCESS:

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/or a finished product it is the process of exercising software with the intent of ensuring 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 a specific testing requirement.

UNIT TESTING:

Unit testing involves the design of test cases that validate that the internal program logic is functioning properly, and that program input produces valid outputs. All decision branches and internal code flow should be validated. It is the testing of individual software units of the application .it is done after the completion of an individual unit before integration. This is a structural testing, that relies on knowledge of its construction and is invasive. Unit tests perform basic tests at component level and test a specific business process, application, and/or system configuration. Unit tests ensure that each unique path of a business process performs accurately to the documented specifications and contains clearly defined inputs and expected results.



INTEGRATION TESTING:

Integration tests are designed to test integrated software components to determine if they actually run as one program. Testing is event driven and is more concerned with the basic outcome of screens or fields. Integration tests demonstrate that although the components were individually satisfaction, as shown by successfully unit testing, the combination of components is correct and consistent. Integration testing is specifically aimed at exposing the problems that arise from the combination of components.

FUNCTIONAL TESTING:

Functional tests provide systematic demonstrations that functions tested are available as specified by the business and technical requirements, system documentation and user manuals.

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

SYSYTEM TESTING:

System testing ensures that the entire integrated software system meets requirements. It tests a configuration to ensure known and predictable results. An example of system testing is the configuration oriented system integration test. System testing is based on process descriptions and flows, emphasizing pre-driven process links and integration points.

CONCLUSION:

This paper is to determine whether the ground conditions in the area are suitable for the proposed development and evaluate the suitability of soil for re-use in the construction of earth embankments and other earthworks at the site.

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