Solution to Environment Disturbances using IoT (Making Alive)

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Abstract: ***The main aim of the project is provide solutions to the earth's major threats like Deforestation, Pollution, Population, and Starving and water lack, food lack. The GLOBE with all colours of Peace and happiness has the right place for life. All creatures in the world have the equal chances of living. HUMAN has the most dominance of all. Making one's human life easier has become the prime motto nowadays. Towards creating an easier life, Humans make environment polluted neither concentrating on other bio-diversities nor on the ambiance. Having a better life is more important than having easier life. This module has scrapped for making awareness to humans about their living. Main theme of the module is towards TREES, POLLUTION and Food lack. This module has taken Coimbatore, Tamil Nadu, India as the study area. The Population of a specific region is selected also Population count of trees in the same selected region is taken. The demand of oxygen in atmosphere in future is calculated by comparing the intake of oxygen by human and exhale of oxygen by trees. The comparisons are done by taking the rate of increase in population and rate of decrease in trees. This module also concentrates on the water wasted in an area than the water must be consumed. The comparisons are made with the water consumed by a normal human and with the strategy (by WHO) of water consumed by normal human. This module also concentrates in the pollution made in the environment. The pollution particles present in normal clean pure air is taken as base condition. This base condition is frequently Checked for deviation in the environment and analysed. All these deviations are plotted as graph and provided in a website as Cumulative results. Hoping a change, the results are manipulated for HUMANS.***

Keywords: Food scarcity, water scarcity, Trees welfare, wild life, biodiversity, human population.

I. OBJECTIVES

Leading an automated life, Technology has replaced the real features of nature and environment. Major natural factors is being vanished by the hand of science and technology.

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They bring causes that are more dangerous. Earthquake, Global warming, Climate change, Disappearance of bio-diversities and Species, Tsunamis are the some that come into list. Every life in the earth is important, it same for trees too. Deforestation brings many major problems that would destroy the earth atmosphere and the nature of living. Polluting the air and polluting the water has increased over a decade that resulted in loss of lakes, rivers even ground water. Water is the main source of living and it has started vanishing in the most of the places. It caused starving. India, the world's one of the super powers is constantly growing with pollution with the increase in number of births when compared with the number of deaths in a year. It would reach a peak at the end of the year 2020.Many children in the world lack the daily food. At other side, million people waste tons of food in a day. Water, an essential source for all the generations. If water got disappear from earth, all life gets affected. Usage of water is being increased in daily life. Usage of the water in daily life has to be reduced to make the next generation alive. All these problems are to be considered at the same time because we are the high times of saving life and earth. This project will analyse the environment, calculate the deviations and provide solutions to people over a web application developed. This will compare the past data, available data and predicts the future data for Analysing.

The resultant data is calculated and manipulated for the present situations to make people aware and to make the people save the environment and life. This project includes five modules. That includes,

- Orphans Alive
- Thirst Alive
- Environment Alive
- Population Alive
- Trees Alive

The proposed project work aims to design and develop a clean environment.

II. OBJECTIVES AND WORK FLOW

A. Tress and Environment

Making the environment cleaner is the gateway of greener globe. So, a tool is made to shape the environment using the data collected. The data is based on real factors. Example: For the count of trees, different species of trees in a region is counted. Every tree will have different rate of emitting oxygen. The difficulty of difference [4] is equalized to different ages of human who will have different rate of absorbing oxygen. The user is allowed to select the region and the result is provided in the website over an algorithm developed specially.

B. Water and Consumption

Water, a Precious natural made thing is becoming lack. Every creature in the world needs water to live. Earth holds 71% of water with it [1]. Out of whole water, 3.5% is held at Fresh water and frozen glaciers [1] and polar ice caps [1]. 69% takes higher percentage in glaciers and 31% at fresh water lakes. Consuming water has no restrictions for humans. This made the water to be shorted. Therefore, a tool is made to alert the human kind about the wasting of water. The user is allowed to select the region. The population for the selected region is considered. Along with, the strategy of water to be consumed by every human is taken for comparison. The deviated results are plotted with graph. The results are projected over website

C. Pollution and Deviations

Environment is meant for living. Human and Technology makes the environment dirt. The pollution comes to the environment as Air pollution, water pollution, noise pollution and many. Co2 occupies its major role here. A survey estimation says 5000 people die due to lack of pure air yearly. For the past year, Delhi is identified as polluted city all over the world. Therefore, a tool is developed where one can know the deviation of the atmosphere. The frequently collected pollution data is made available at the developed website where one is allowed to select the location. For the selected location, the deviation is plotted over graph and fed over website.

D. Greedy and Needy

Many People in the world waste food daily. Many people in the world need food daily. At a side, food is being wasted and on the other side, food is being needed. The people who waste food does not know the people who need food. Therefore, a tool is developed to map the people of greedy and the needy.

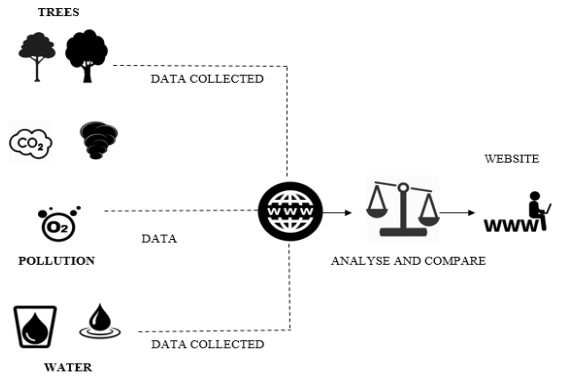

Fig. 1 Block Diagram (Trees, Pollution and Water)

III. PROPOSED SYSTEMS

The proposed system collects the real time data that are being streamed lively and updated using sensors. All these data are based on the present and calculated values. The data are directly fed into the servers for web processing and displays.

The web tool is purely developed using HTML,CSS,PHP, and JAVASCRIPT. For server applications, MySQL database is implemented. The processed results are calculated based on the location that a user selects. The manipulated results are displayed to the user and it will be sent to the user as NEWSLETTER/MESSAGE.

It uses UI (User Experience) for user selection and result

- User is given with an UI where he can select desired location
- User will be shown the results according to the selected location
- The results will be viewed in the form of graph UI
- Also the results are being sent as message / Newsletter

A. Trees and Data

- Analysing data of count of trees in a desired selected region
- Collecting data of Population in the same region
- Analysing the oxygen releasing capability of different trees
- Developing an algorithm for calculating Oxygen content
- Deriving rate of increase in population and rate of decrease in trees
- Comparing the strategy and providing result. Oxygen emitted by a normal average tree-48 pounds/year.

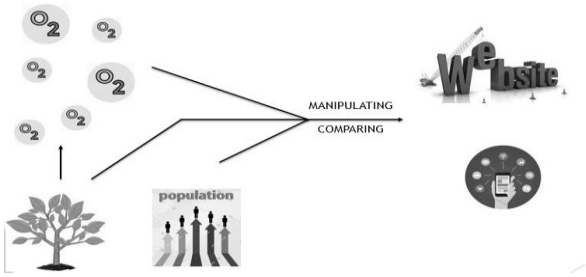

Fig. 2 Block Diagram of Collection of Data

B. Water and Data

- Analysing population in an area
- Calculating the water consumption of normal average human
- Checking the strategy of usage of water
- Plotting the deviation for making awareness of water consumption

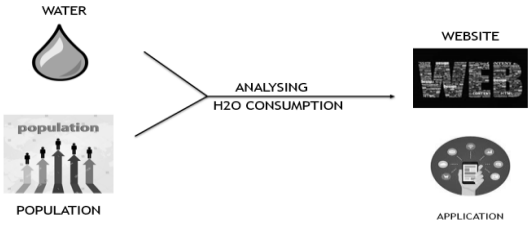

Fig. 3 Block Diagram of Pollution Data and Water Data

C. Pollution and Data

- Analysing POLLUTION in an area
- Calculating the particles of normal average air

- Checking the strategy of deviation in air
- Plotting the deviation for making awareness of Pollution prevention

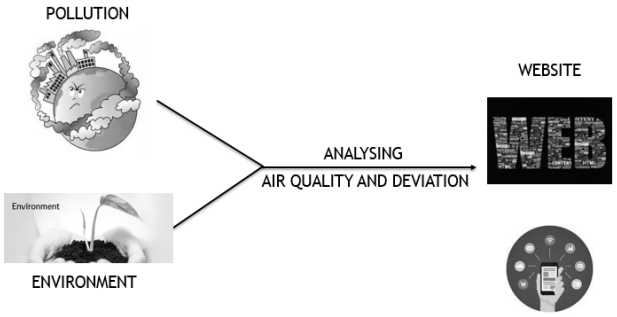

Fig. 4 Block Diagram of Pollution Data and Water Data

D. Greedy and Needy

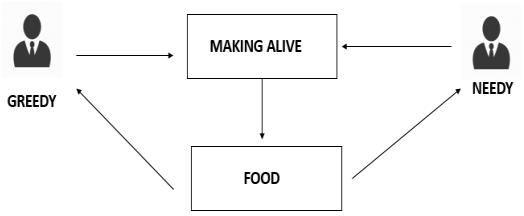

Fig. 5 Block Diagram of Greedy and Needy

IV. IMPLEMENTATION AND WORKFLOW

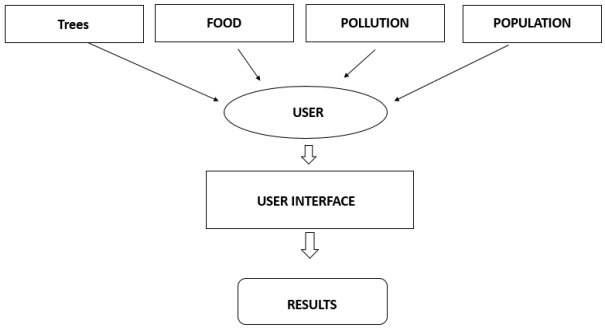

Fig. 6 Flow Chart

Orphans Alive (Needy and the Greedy)

In an area / location, there may be food-lacking places like orphans, old age homes and children homes. On the other, there may regions that waste food or there may be the regions that produces high amount of food (Collages, Schools, Marriage halls etc.). Someone is wasting food and someone is in need of food. There is gap built between the people and the project build a bridge by connecting these edges of people with web application where the greedy can offer the food that is in more amount. In the other side, the needy can request / get the food. So that the food will not be wasted, food demand and food lack can be resolved.

Flow

- Greedy can offer the food in the web application.
- Needy can request / accept food from web application according to the need

Trees Alive

A Normal average adult inhales 20% oxygen and exhales 15% oxygen along with carbon-di-oxide. That is normal resting human inhales 5% of pure oxygen. This equals 550 litres (19 cubic feet) of oxygen per day. In a minute average human inhales 7 to 8 litres of oxygen per minute.

Trees Breath Rate

A Normal average grown tree will emit 48 pounds of oxygen per year. This equals 7.60 pounds a day.

- One deep breath equals - 3.5 litres of oxygen.
- Oxygen per minute - 7 litres.
- Oxygen produced in a day - 7.60 pounds / day.

$$X * 24hrs – X * 12hrs = Y * 24hrs$$

Equation of Stability

X * 24hrs – X * 12hrs = A
Y * 24hrs = B
If, A = = B and A > B, Stabilized Environment
If, A < B, Un-stabilized Environment

Equation of Stability

Two Trees equals to family. That is one tree for two people in average.

- Number of Trees – C

If, C = 2 * D or C > 2 * D, Sustained Environment

$$C = 2 * D$$

If C < 2 * D, Un-sustained Environment

Environment Alive

Air quality Index (AQI), a universal index to communicate about the quality of the index. AQI has six major divisions,

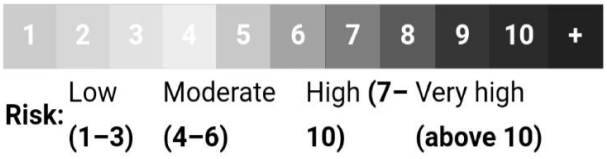

Fig. 5 Aqi Range

Thirst Alive

Let X = Population count of particular selected region.
Y = Amount of water wasted in an area.
Z = Amount of water to be wasted

X * 20 LTS OF WATER = Z

X * 20 LTS OF WATER = A
A = Z ----- Eqn. for Adequate Environment
If, A = Z or A < Z, Adequate Environment, A > Z, Inadequate Environment

V. DATABASE STRUCTURE

There needs a some space to store the values as the data are constantly growing and constantly changing. The database used here is MySQL. The database is structured as tables with rows and columns. The different tables represent different modules of project. Each project module has a database to store the values and to fetch the values.

The values are fetched using the AJAX request with JSP and html pages

List of Tables

- User Credential
- User Profile / User Management
- Trees Database
- Population Database
- Pollution Database
- Water Database

List of Technologies

- HTML, CSS
- AJAX
- SERVLET, JSP
- MySQL Database

VI. CONCLUSION AND SCOPE

Making Alive can be extended with Blood Alive too where receptors can easily contact the donors through the website developed based on the demand of the blood type. The project can be extended to all parts of Tamil Nadu. The user can view the website results based on his / her appropriate location. The efficiency of the results can be extended by adding more data for comparison and prediction. A space for awareness can be done through video promotion that can be added to the website.

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