Urban Tree Management - UTM

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Abstract- *Urban tree management is the key basis for greener cities of the future. Urban Tree Management aims to raise awareness for the positive impacts and benefits of city trees. Our website includes where to get fertilizer easily, where to plant trees in your nearby location with the help of map, to track the condition, and the overall management of trees as a collective resource. Users can capture the tree they have planted and upload to website. With every uploaded tree, user can have its unique tracking number. After entering the tracking number, it shows each user the precise location of the tree they have planted, who is taking care of it, and much more.*

Keywords- Tree, Urban Tree Management, Tracking ID, Bio fertilizer, Map visualization, Notification, Google Map API, Tree Growth Tracking, Saplings, Nearby Location, Internet Navigation, Nature-based Solutions, Urban Planning, Ecosystem Management, Horticulture

I. INTRODUCTION

The Urban Tree Management is a web application which is built in JS. It provides End-user's ability to register to website and view the comprehensive info about their planted trees.

Registered users can search for bio-fertilizers, where to plant trees in their nearby location, track the growth of their plantation with unique tree ID. Tree manager can interact with the website by uploading latest plant condition. Using google maps API, tree data will be visualized on the map.

A large part of India's population, ecosystems, and economy are all exposed to high risk in the face of future climate change. Many people cannot focus for plantation due to their work life, but with this system people can order plantation, track the condition without any hassle.

The Urban tree management is a system which provides where to plant, to buy seeds and fertilizer easily online. We also arrange where to plant trees in your nearby location with the help of map visualization. We provide unique tracking ID, after entering, it shows each user who is taking care of it and tells the current condition of tree growth.

Fig 1: Classification of Solution - UTM

II. LITERATURE REVIEW

Urbanization, coupled with a changing climate, is a challenge on a global scale that greatly impacts the health and well-being of humans. To establish healthy and vibrant communities, trees need to be part of the global discussion.

Tree survival is a performance metric for urban forestry initiatives, and an understanding of the factors that influence mortality can help managers target resources and enhance survival. Furthermore, urban tree planting depends on tree survival to maximize ecosystem services.

We categorized factors commonly associated with urban tree mortality and summarized mortality rates published in 56 studies, focusing on studies of trees along streets, in yards, and in landscaped parks.

Investing in trees through planting, care, and maintenance will produce a significant return on investments, especially as older and larger trees provide the most benefits.

The future of urban forestry should focus on protecting large trees, as well as improving age structure, standards, and planning management. Trees are a long-term solution for many issues people face and they are a valuable resource for every community, those in urban or suburban settings.

III. DESIGN AND DEVELOPMENT OF UTM

The Urban Tree Management is quite eased to use and simple nature at glance. Users can capture the tree they have planted and upload to website. With every uploaded tree, user can have its unique tracking number. After entering the tracking number, it shows each user the precise location of the tree they have planted, who is taking care of it, and much more.

Fig 2: The Product

We split our innovative concept into three parts. Users can use our optimized google map view to choose the nearby location which has available plantation space as foremost part. In our second part, with the help of unique tree ID, users planted trees data are recorded in our database securely. As our last and most important part, using Map API, we can create immersive location experience in which user can see real time data of theplantation.

Over the past decades, science has demonstrated how trees in our landscapes benefit people and that well-maintained trees are an important asset to keep a community healthy and safe. User can be able to choose their desired social contribution and payment service. Developer can access the source code and use that file to optimize the user performance with the help ofdatabase.

We created a basic flowchart to get a step-by-step approach on how we want our web application to process.

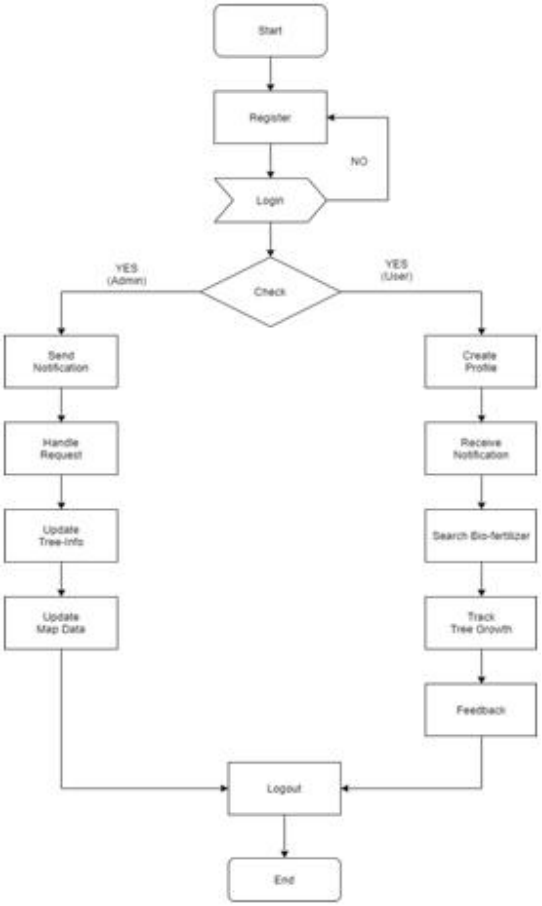

Fig 3: UTM Flow Chart

Getting visualized view of area nearby you with optimized GUI. A user friendly and easy to use platform to Explore each tree's exact location. A Platform which Records all tree data in one go with unique tracking ID. Obtain comprehensive information about your planted trees.

Fig 4: Map Visualization

IV. STUDY FINDINGS

Current system is manual and partially computer rise. An astonishing 33% of the world's land is moderately or

highly degraded and in urgent need of restoration. Tree population is in competition with pedestrian, parking and infrastructure needs.

New system will be completely online web-based system. It includes optimized view of tree on maps which user can interact with and can decide for plantation to nearby empty space. User can have its unique tracking ID for tree. Workers can update the tree condition as well as users can have timely update through email notifications.

Using new system, users would take quick and accurate decision with the visualized map and on time data report generation facilities will be available in this new system. And can obtain comprehensive information about their planted trees.

V. CONCLUSION

We will develop "URBAN TREE MANAGEMENT" System with great concern and will try our best to implement as many as features to make it viable and usable. This system is a powerful and easy-to-use for the user in their day-to-day life. This System provide users to interact with visualized map so that they can search for empty space for plantation. It is the Web application with the latest platform that provides not only plantation but creating awareness for save trees to younger generation. Nowadays, technology is increasing day by day for making the works of human being easier. Users can easily track the planation with the help of unique tree tracking ID and can search for bio-fertilizer if they want to plant themselves to specific nearby empty location. In these system admin can send push notification to the user about the updates of their plant's conditions time totime.

VI. ACKNOWLEDGEMENT

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