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Research Paper

CLIMATE CARE SOLUTIONS

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Abstract

Climate Care Solutions is a technology-based platform designed to create awareness about climate change and encourage individuals to adopt environmentally responsible practices. Climate change, pollution, excessive energy consumption, deforestation, and improper waste management are major environmental challenges affecting communities and ecosystems. Many people are aware of these issues but may not have sufficient information about how their daily activities contribute to environmental problems or how they can reduce their impact.

The proposed system provides a centralized platform where users can learn about climate change, environmental protection, energy conservation, waste management, and sustainable living practices. It can provide information, tips, and recommendations that help users understand and adopt eco-friendly habits. The system can also include features such as carbon-footprint awareness, sustainability suggestions, environmental campaigns, and progress tracking to encourage users to participate in climate-friendly activities.

The main objective of Climate Care Solutions is to promote environmental awareness and support users in making sustainable decisions in their daily lives. By providing easily accessible information and practical recommendations, the platform can help reduce environmentally harmful activities and encourage responsible resource utilization. It can also help communities participate in environmental initiatives and share useful information about climate protection.

Overall, Climate Care Solutions provides a user-friendly and informative approach to addressing climate-related challenges through technology. The platform can be further enhanced with real-time environmental data, carbon-footprint calculators, AI-based personalized recommendations, environmental monitoring, reward systems, and integration with smart devices.

I. Introduction

Climate change is one of the major environmental challenges affecting the world today. Rising temperatures, air pollution, deforestation, excessive use of natural resources, improper waste disposal, and increasing greenhouse gas emissions are contributing to environmental degradation. These problems can affect human health, agriculture, biodiversity, water resources, and the overall quality of life. Although

governments and organizations are taking various measures to address climate change, individual participation and environmental awareness are also essential for achieving sustainable development.

Climate Care Solutions is a technology-based platform developed to create awareness about climate change and encourage people to adopt environmentally friendly practices. The system provides users with information about climate-related issues, waste management, energy conservation, water conservation, renewable energy, and sustainable living. It aims to present environmental information in a simple and understandable manner so that users can easily learn about the impact of their daily activities on the environment.

The proposed platform can provide practical suggestions and recommendations to help users reduce their environmental impact. Features such as carbon-footprint awareness, eco-friendly tips, environmental campaigns, sustainability activities, and progress tracking can encourage users to participate actively in climate protection. The system can also provide useful information about recycling, reducing plastic usage, saving electricity, and conserving natural resources.

The main objective of Climate Care Solutions is to use technology to promote environmental responsibility and sustainable living. By providing centralized information and practical solutions, the platform helps users understand climate-related challenges and take appropriate actions. Overall, the system provides an effective and user-friendly approach to increasing environmental awareness and encouraging climate-friendly behavior. It can be further enhanced with AI-based recommendations, real-time environmental data, carbon-footprint calculation, smart-device integration, and reward-based sustainability programs.

II. Literature Survey

Several studies have focused on using technology to address environmental challenges and increase public awareness about climate change. Traditional environmental awareness methods mainly depend on educational programs, campaigns, posters, television, newspapers, and community activities. Although these approaches can reach a large number of people, they may not provide personalized information or continuous guidance based on individual needs. Digital platforms have therefore become increasingly useful for sharing information about climate change, pollution, waste management, energy conservation, and sustainable development. These platforms provide users with easy access to environmental information and encourage them to understand the importance of protecting natural resources.

Research on carbon-footprint calculation systems has also demonstrated the importance of helping individuals understand the environmental impact of their daily activities. Such systems can estimate emissions associated with transportation, electricity consumption, food habits, and other activities. By presenting users with information about their estimated environmental impact, these platforms can encourage them to adopt more sustainable practices. However, the accuracy of carbon-footprint estimates depends on the quality of user-provided information and the calculation methods used. Some existing systems also focus mainly on

measurement without providing sufficient practical recommendations for reducing emissions.

Recent developments in Artificial Intelligence (AI), Machine Learning (ML), and data analytics have created opportunities for developing more intelligent environmental applications. AI-based systems can analyze user activities, environmental information, and behavioral patterns to provide personalized recommendations. These technologies can be used to suggest energy-saving practices, waste-reduction methods, sustainable transportation options, and other eco-friendly activities. Digital applications can also encourage participation through environmental challenges, progress tracking, notifications, and reward mechanisms. However, challenges such as reliable environmental data, user participation, privacy, and maintaining updated information need to be considered during system development.

Based on the study of existing environmental awareness and sustainability platforms, the proposed Climate Care Solutions aims to provide a centralized and user-friendly platform for climate awareness and sustainable living. The system can combine environmental education, practical eco-friendly recommendations, carbon-footprint awareness, sustainability activities, and progress tracking in a single platform. Users can learn about climate-related problems and receive suggestions for reducing their environmental impact. The platform can also be extended with AI-based personalized recommendations, real-time environmental data, renewable-energy information, environmental campaigns, and reward-based activities. Thus, the proposed system provides a technology-driven approach to encouraging individuals and communities to participate in climate protection and sustainable development.

III. System Analysis

System analysis is an important phase in the development of the Climate Care Solutions platform. The analysis focuses on understanding major environmental problems and the difficulties users face in adopting sustainable practices. Users need simple and reliable information about climate change, pollution, waste management, energy conservation, water conservation, and renewable energy. The system should provide an easy-to-use platform where users can learn about environmental issues and practical solutions. It should help users understand how their daily activities can affect the environment. The platform can provide eco-friendly recommendations based on user interests and activities. Features such as carbon-footprint awareness can help users understand their environmental impact. The system should also encourage users to participate in environmental campaigns and sustainability activities. Progress tracking can motivate users to continue following eco-friendly practices. The platform should maintain updated environmental information and provide reliable suggestions. Security, usability, scalability, and performance should also be considered during development. Overall, system analysis helps identify the requirements needed to develop an effective climate-awareness and sustainability platform.

Existing System

In the existing system, information about climate change and environmental protection is generally obtained through websites, social media, newspapers, television, educational programs, government campaigns, and environmental

organizations. These sources provide useful information about pollution, global warming, waste management, and sustainable development. However, the information is often distributed across multiple platforms, making it difficult for users to find all required information in one place. Many existing platforms focus mainly on providing general environmental awareness rather than personalized guidance. Users may not receive recommendations based on their individual activities or environmental impact. Some carbon-footprint tools only calculate emissions and do not provide sufficient guidance for reducing them. Environmental campaigns may also have limited interaction and progress-tracking facilities. Users may lose motivation because their sustainability activities are not continuously monitored. Existing systems may not provide integrated features for education, carbon awareness, eco-friendly recommendations, and environmental activities. These limitations create a need for a centralized platform that combines different climate-care services. The proposed system aims to provide an interactive and organized solution for increasing environmental awareness and encouraging sustainable behavior.

Disadvantages of Existing System

- Environmental information is distributed across multiple sources.
- Users may find it difficult to identify reliable information.
- Limited personalized environmental recommendations.
- Many platforms provide only general awareness content.
- Carbon-footprint tools may provide limited action-oriented guidance.
- Lack of integrated sustainability activities.
- Limited progress tracking for users.
- Users may have difficulty monitoring their environmental improvements.
- Environmental campaigns may have limited user interaction.
- Some platforms may contain outdated information.
- Limited motivation mechanisms such as challenges or rewards.
- Different environmental services may require separate applications.

Proposed System

The proposed **Climate Care Solutions** is a centralized technology-based platform designed to promote environmental awareness and sustainable living. The system provides users with information about climate change, pollution, waste management, energy conservation, water conservation, recycling, and renewable energy. Users can access environmental tips and practical recommendations for adopting eco-friendly habits. The platform can provide carbon-footprint awareness by helping users understand the environmental impact of their daily activities. Based on user activities and preferences, the system can provide suitable suggestions for reducing environmental impact. Users can participate in environmental campaigns, sustainability challenges, and climate-friendly activities through the platform. A progress-tracking feature can help users monitor their sustainability efforts over time. The system can also provide notifications about environmental events, campaigns, and useful climate-related information. Administrators can manage environmental content, activities, campaigns, and user information through an administrative module. The platform can use AI and data analytics in future versions to provide more personalized recommendations. Overall, the proposed system provides an integrated,

interactive, and user-friendly solution for promoting climate awareness and sustainable practices.

Advantages of Proposed System

- Provides centralized environmental information.
- Increases awareness about climate change and sustainability.
- Provides practical eco-friendly recommendations.
- Supports carbon-footprint awareness.
- Can provide personalized sustainability suggestions.
- Encourages recycling and responsible waste management.
- Supports environmental campaigns and challenges.
- Provides progress tracking for sustainability activities.
- Helps users develop environmentally friendly habits.
- Can provide notifications about environmental activities.
- Reduces the need to search multiple environmental platforms.
- Can be enhanced with AI-based recommendations and real-time data.

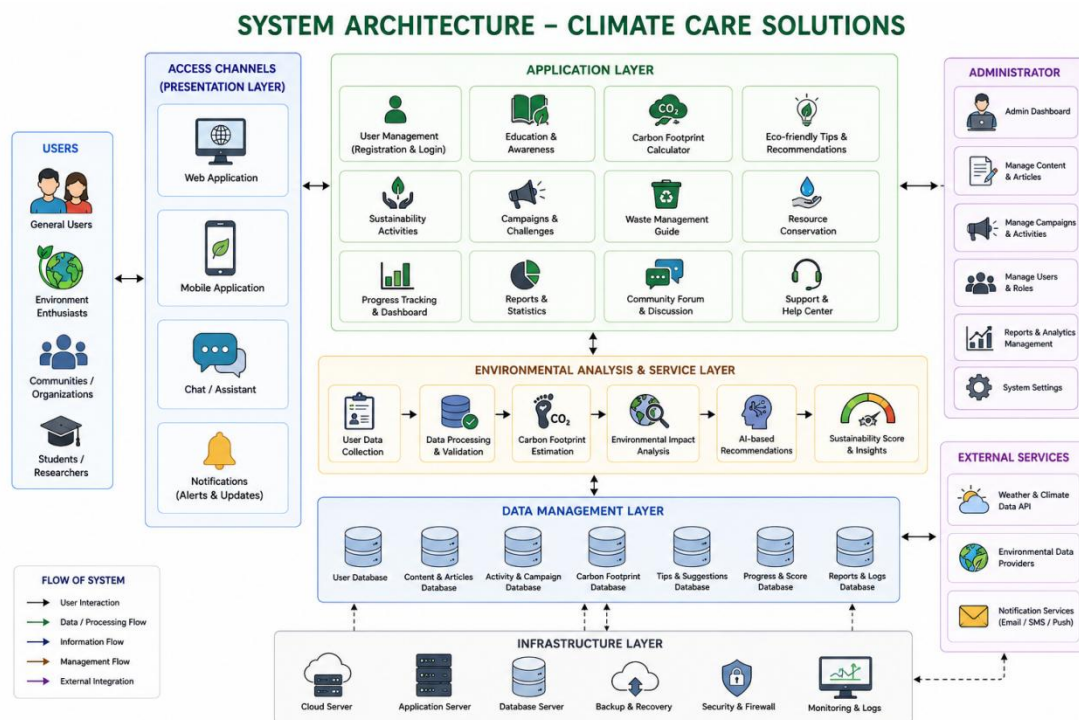
IV. Methodology

The methodology describes the systematic approach followed for developing the Climate Care Solutions platform. The development process begins with identifying major environmental issues and understanding the requirements of users. Relevant information about climate change, pollution, waste management, energy conservation, water conservation, and renewable energy is collected from reliable sources. The collected information is organized into a structured environmental knowledge base. The system provides a user interface through which users can access environmental information, tips, and sustainability activities. User activities can be recorded to support carbon-footprint awareness and progress tracking. Suitable algorithms or predefined calculation methods can be used to estimate environmental impact based on user inputs. The system can analyze user activities and provide appropriate recommendations for improving sustainable behavior. Users can participate in environmental campaigns and challenges through the application. Administrators can add, update, and manage environmental content and activities. The system is tested to verify functionality, usability, accuracy, response time, and reliability. Finally, the complete platform is evaluated to ensure that it effectively supports environmental awareness and encourages users to adopt sustainable practices.

System Architecture

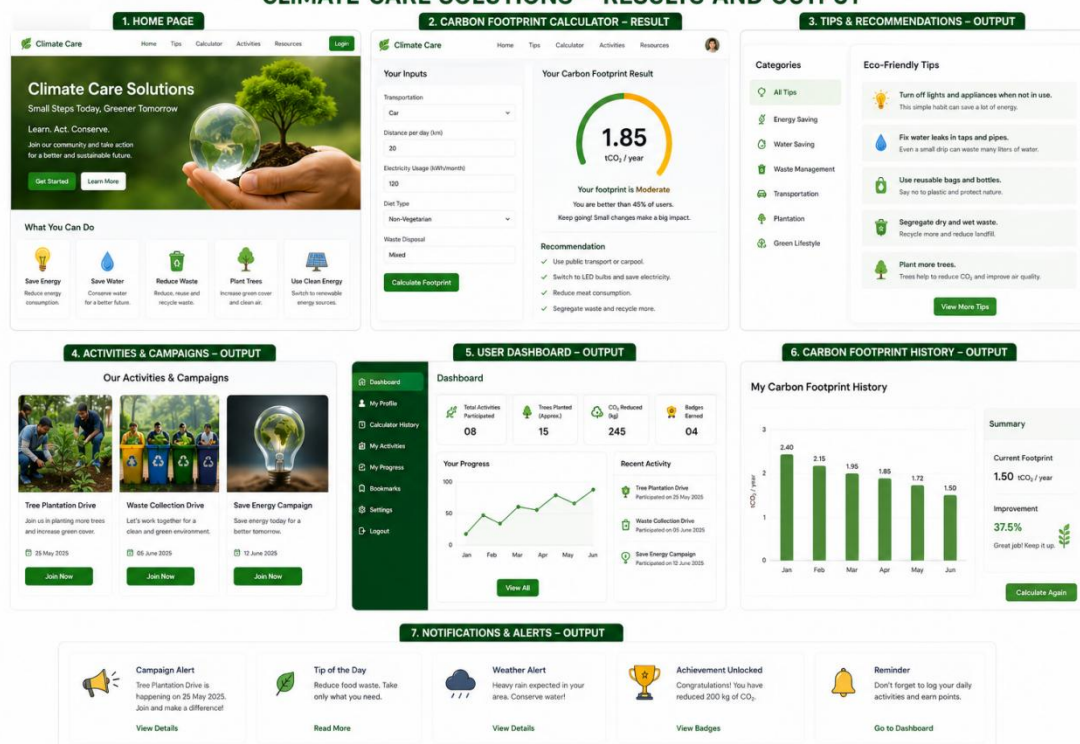
The system architecture defines the structure and interaction between the major components of the Climate Care Solutions platform. The proposed system can follow a layered architecture consisting of the presentation layer, application layer, environmental analysis layer, database layer, and external data layer. The presentation layer provides the user interface through which users access climate information, recommendations, activities, and progress reports. The application layer manages user registration, authentication, environmental content, campaigns, activities, and user interactions. The environmental analysis layer processes user activity data and can calculate carbon-footprint estimates and sustainability scores. An AI-based recommendation module can analyze user information and suggest suitable eco-

friendly practices. The database layer stores user profiles, environmental content, activity records, carbon-footprint data, campaigns, and progress information. The external data layer can provide updated environmental information from authorized external sources when required. Administrators can manage environmental content and monitor platform activities through an administrative interface. Security mechanisms can be implemented to protect user information and control access to administrative functions. The system can also integrate notification services to inform users about environmental events and campaigns. The architecture provides a scalable and structured foundation for developing the Climate Care Solutions platform. Overall, the architecture supports effective communication between users, environmental information, analysis modules, and sustainability services.



V. Result and Output

CLIMATE CARE SOLUTIONS – RESULTS AND OUTPUT



VI. Conclusion

The Climate Care Solutions project successfully demonstrates the use of technology to promote environmental awareness and encourage sustainable living practices. The system provides users with useful information about climate change, energy conservation, water conservation, waste management, recycling, and other eco-friendly practices. The carbon-footprint calculator helps users understand the environmental impact of their daily activities and provides suitable recommendations for reducing emissions. The platform also supports sustainability activities, environmental campaigns, progress tracking, and notifications to encourage continuous user participation. The developed system provides a simple and user-friendly interface through which users can access climate-related information and monitor their environmental activities. Functional testing demonstrates that the major features of the system can work according to the expected requirements. Overall, Climate Care Solutions provides an effective and centralized platform for increasing environmental awareness and encouraging responsible behavior. In the future, the system can be enhanced with AI-based personalized recommendations, real-time environmental data, smart-device integration, advanced carbon-footprint analysis, reward systems, and community-based environmental initiatives.

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