AI - IBM Skills Build Internship **CSRBOX IBM SkillsBuild**

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Report

SDG 13: Climate Actions

Title: An AI model to predict and mitigate the impact of climate change.

Introduction:

Climate change stands as one of the most urgent and far-reaching challenges of our time. Rising global temperatures, extreme weather events, melting glaciers, and sea-level rise are clear indicators of a planet in crisis. These changes not only threaten natural ecosystems but also have serious consequences for human health, food security, water availability, and economic stability. Addressing climate change requires immediate, coordinated action across all sectors of society to reduce greenhouse gas emissions, enhance resilience, and promote sustainable development. This concept note outlines the need for urgent intervention to mitigate and adapt to the impacts of climate change.

Problem Statement:

Despite growing awareness, the global response to climate change remains insufficient and delayed. Greenhouse gas emissions continue to rise, leading to more frequent and intense natural disasters, unpredictable weather patterns, and environmental degradation.

Vulnerable communities, especially in developing countries, face the greatest risks with limited resources to adapt. Without urgent and collective action, climate change will continue to undermine progress toward sustainable development, threatening both people and the planet. There is an immediate need for scalable solutions, policy reforms, and grassroots engagement to effectively combat and minimize its impacts.

Objective:

The main objective is to take quick and effective action to fight climate change and reduce its harmful effects. This includes spreading awareness, promoting eco-friendly habits like using renewable energy and reducing waste, and helping vulnerable communities adapt to climate impacts. It also aims to involve youth and local people in climate solutions and support strong policies that protect our environment for the future.

Why This Problem?

Climate change is affecting every part of the world, causing more natural disasters, rising temperatures, and threatening food, water, and health security. If we do not act now, the damage will become irreversible, especially for poor and vulnerable communities who have fewer resources to cope. This problem is urgent because it directly impacts our future, our environment, and the sustainability of life on Earth. Immediate action is needed to prevent long-term damage and protect both people and the planet.

Solution:

Overview:

To combat climate change effectively, we need a combination of awareness, action, and innovation. The solution focuses on promoting sustainable practices such as the use of renewable energy, reducing pollution, and encouraging recycling. It also involves educating communities, especially youth, about climate change and how they can

contribute to solutions. Supporting green policies, planting trees, and building climate-resilient infrastructure are also key parts of the approach. Together, these actions can reduce the effects of climate change and create a more sustainable future.

Features:

Community Awareness Campaigns
Conduct workshops, campaigns, and school programs to educate people about climate change, its impacts, and ways to reduce their carbon footprint.

Promotion of Sustainable Practices
Encourage the use of renewable energy (solar, wind), eco-friendly transport (cycling, public transit), and sustainable habits (recycling, water conservation).

Youth and Community Engagement
Involve students, volunteers, and local groups in climate initiatives like tree planting, clean-up drives, and green innovation challenges.

Support for Policy and Advocacy
Work with local authorities to develop and support climate-friendly policies and regulations that reduce emissions and promote green development.

Green Infrastructure Development
Promote the building of climate-resilient structures and urban green spaces to help cities adapt to extreme weather and rising temperatures.

Technology and Innovation Use
Integrate smart solutions like climate monitoring apps, renewable energy tech, and waste tracking tools to improve efficiency and awareness.

Focus on Vulnerable Communities
Provide special support and resources to low-income and high-risk areas to help them adapt and build resilience to climate change impacts.

Technical Implementation

The project will be implemented through a combination of awareness programs, digital tools, and sustainable infrastructure initiatives. Mobile apps and online platforms will be used to spread climate education, track individual carbon footprints, and promote green habits. Solar panels and rainwater harvesting systems will be introduced in public buildings and communities to reduce dependence on non-renewable resources. Data collection tools such as climate sensors and weather tracking systems will help monitor local environmental changes. The project will also collaborate with local governments and technical experts to ensure that all solutions are cost-effective, scalable, and environmentally sound.

Why IBM Resources and Tools?

IBM Cloud and Watson Studio: Provide a robust, scalable infrastructure for data processing, model training, and deployment. Watson Studio's state-of-the-art tools enhance the model's development, ensuring high performance and reliability.
Advanced Analytics: IBM Cloud offers powerful analytics capabilities, enabling the processing of large, complex datasets efficiently.
Security and Compliance: IBM Cloud ensures data privacy and security, addressing ethical concerns related to data handling and bias mitigation.

Conclusion

Climate change is a global emergency that demands immediate and united action. Through this model, we aim to raise awareness, promote sustainable practices, and empower communities especially the youth to take part in meaningful climate solutions. By combining education, technology, and local action, we can reduce the impacts of climate change and build a more resilient and sustainable future for all. The time to act is now, before the damage becomes irreversible.