Team Details

a. **Team name: Ch4**
b. **Team leader name: Siddhi Shrivastava**
c. **Problem Statement:**

18: Tell a Climate Story:

Over the last several decades, a huge amount of climate data from numerous sources has been collected. This data is freely available to the public, but making sense of this vast amount of data is not easy! Your challenge is to use the open-source data on the U.S. Greenhouse Gas Center website to tell a compelling story about climate change.

Brief about the idea : **Comic style story telling with data-driven insights**

- Comic-style storytelling : engaging visuals that highlights effects on planet and life
- Interactive Power BI visualizations; forecasts
- GHG footprint Calculator

A story that speaks the reality and measures our current state down to every tonne and inspires to make individual impact.

But a story is helpless if it can't shake a human heart. We want to touch their hearts and make them beat with purpose to take action.

Action: Calculate their own GHG footprint using our GHG calculator app. Based on their score our app will suggest lifestyle changes to lower their GHG emissions.

Opportunities

a. How different is it from any of the other existing ideas?

Our website Combines Comic-style storytelling + Interactive visualizations making a comic come ALIVE. Most climate-related projects focus either on science-fiction comic or pure data. The narrative is supported with real datasets.

Target audience

1. General public: People who may not have a deep understanding of climate change and are intimidated by big datasets but are concerned about its impact. The comic-style storytelling and easy-to-digest visualizations will engage and educate them.
2. Environmental Enthusiasts, Activists, and Educators: These might know the technicalities behind and will also enjoy the comic-style storytelling

Opportunities

a. How different is it from any of the other existing ideas?

Phases of the story + supported with Power BI visualizations

1. Problems due to high GHG levels. E.g., ongoing floods in India, wildfires, drought in different parts of the world.
2. Sources of GHG emissions.
3. Effects on all life forms.
4. Forecasting the future of GHG trends and effects on the earth and its tenants.
5. Realistic approach to lower GHG levels.
6. After effects: status of disastrous events.

The flow of the story supported by data visualizations ensures **emotional engagement with factual confirmation that all of this is not made up. THIS IS HAPPENING RIGHT NOW**.

Opportunities

b. How will it be able to solve the problem?

Each of our team member has come across various humans who were quite unaware of the threats Earth's current temperature is causing, casually blaming it the unpredictability of weather and never understanding the cause behind it.
Education is the first step but making it accessible is the foremost.

By presenting complex climate data in a **simplified, visually appealing format**, we can engage a wider audience, especially those who may find raw data intimidating. Our **interactive Power BI dashboards** allow users to explore GHG trends, sources, and impacts, helping them understand the problem in detail.

Action: The **GHG Footprint Calculator** empowers individuals to measure their own contribution to GHG emissions and take actionable steps toward reducing it.

Opportunities

c. USP of the proposed solution

Entertainment-driven approach to present concrete solutions to tackle climate change and make an impact at the individual level.
The motto is to build an emotional connection with the user and to take action to save the only planet we have (until we make Mars habitable)

•**Unique Blend of Storytelling and Data**: Using comics to narrate a data-driven story is an innovative approach, bridging the gap between education and emotional impact.

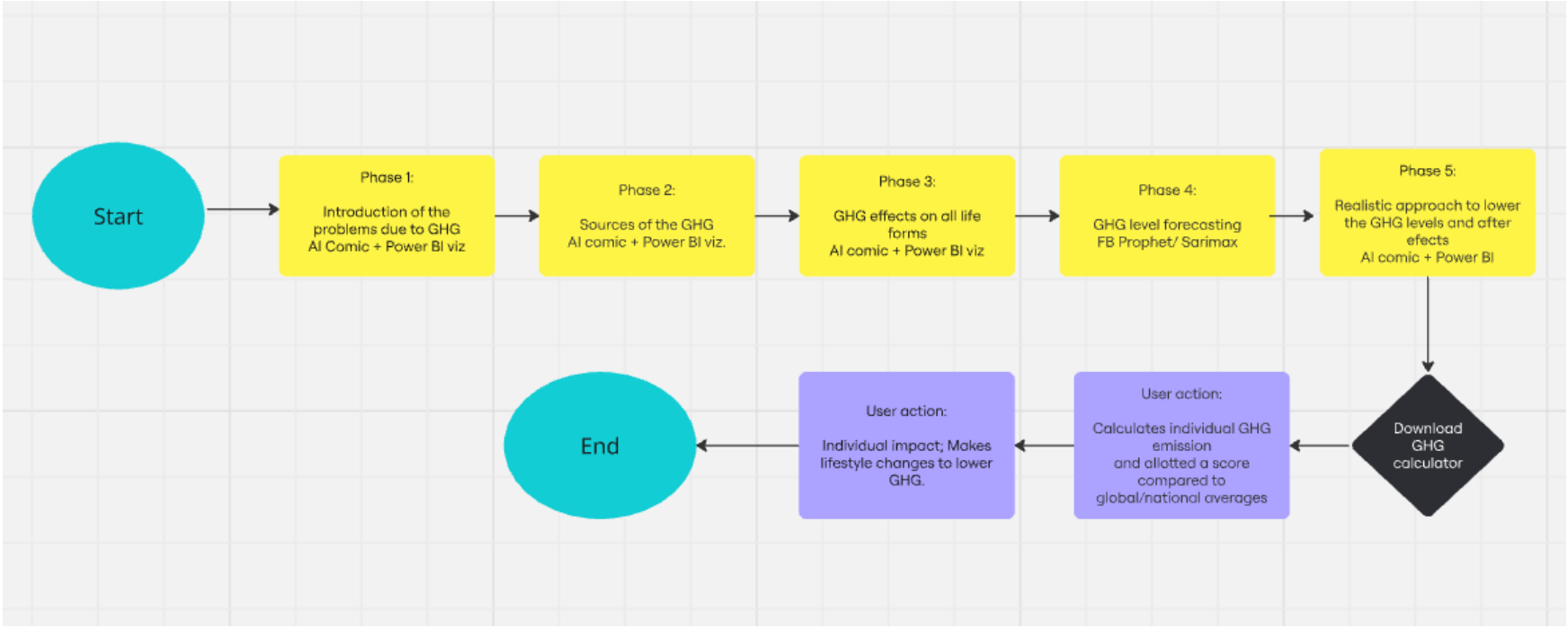
•**Interactive Visualizations**: Power BI allows users to engage with real-time data, making the story dynamic and data-driven.

•**Personal Action**: The GHG Footprint Calculator provides personalized recommendations, turning information into action for the user.

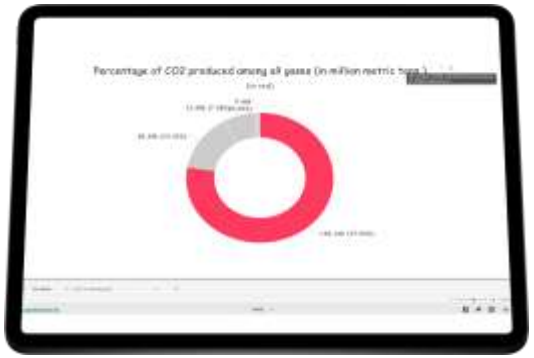
List of features offered by the solution

1. **Engaging**: Comic-style storytelling.
2. **Technical analysis**: Interactive PowerBI visualizations
3. **Forecasting**: GHG levels Forecasting with Machine learning
4. **Actionable solutions** and after-effects
5. **App**: GHG Footprint calculator (individual impact)
6. Updates on the current situation through **APIs**
7. **Responsive layout**; can be operated on all devices. (Currently desktop only)

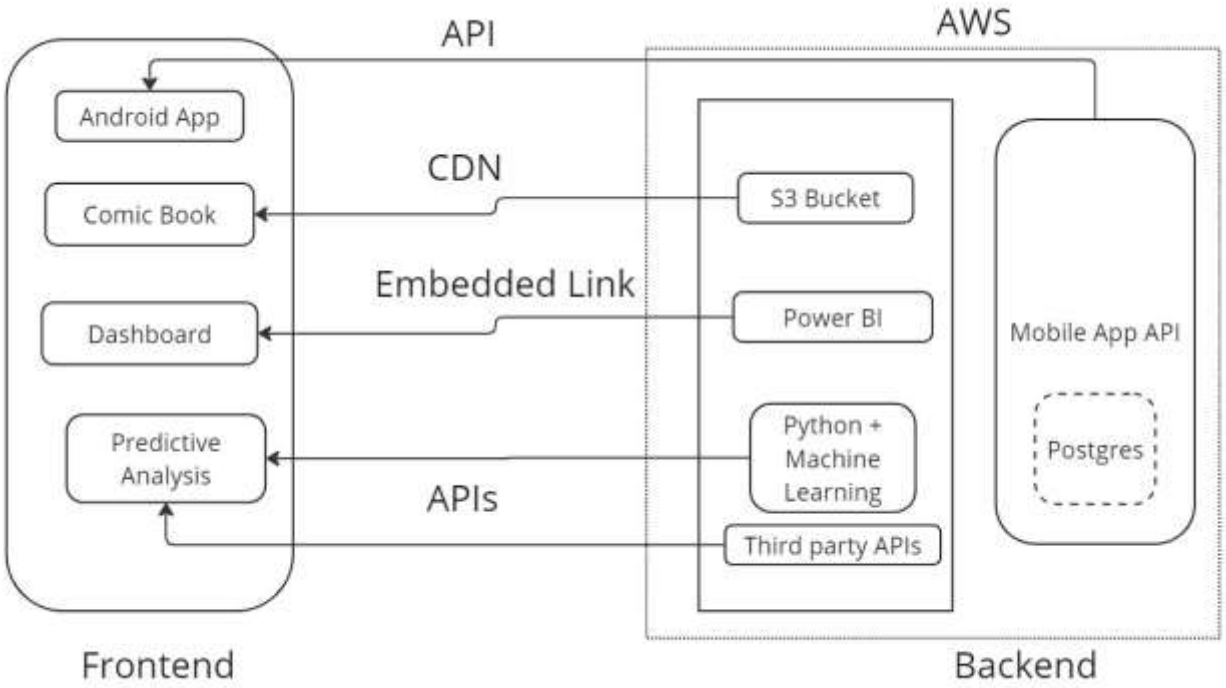
Process flow diagram or Use-case diagram



Wireframes/Mock diagrams of the proposed solution (optional)



Architecture diagram of the proposed solution



Technologies to be used in the solution

Analytical tools

Python
Power BI
Excel

UI/UX Design

Figma
AdobeXD
Framer

Frontend

React.js
CSS
HTML
JavaScript

Mobile App Frontend

React native

Backend

Python
Django
FB Prophet
Sarimax

Deployment

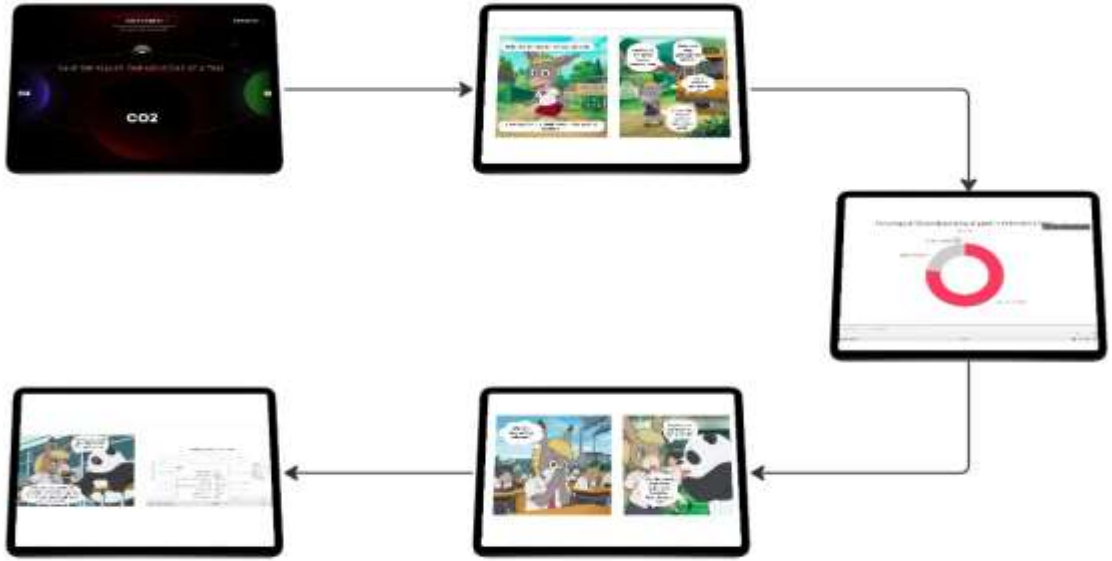
Render/ AWS

AI Comic

Ideogram
Canva
Later will use Huggingface/ Leonardo AI

Estimated implementation cost (optional)

Snapshots of the prototype



Prototype Performance report/Benchmarking

Feature	Prototype	Industry Standard	Comparison
Page Load Time	3-4.5 seconds	2-3 seconds (optimal)	**Slightly Slower** (due to rich media)
Mobile Optimization	92%	90% (Common threshold)	Above Average
Interactivity (Story + Comic)	Highly interactive	Static informational sites	More Engaging
Scroll Depth (Comic)	75% (Approx.)	50-60% average	Above Benchmark
Charts Load Time	2 seconds (Approx.)	2-3 seconds	Meets Standard

Additional Details/Future Development (if any)

Detailed analysis of all other potent gases

GHG calculator App:
- Calculate individual GHG footprint.
- Users can compare their GHG footprint score with global averages making the impact more personal.
- Recommends lifestyle changes based on GHG score to lower the emissions. For example, switch to a cycle if you go to a nearby gym. That's cardio + less pollution.

Integrating global datasets to make visualizations internationally relevant since climate change is a global issue.

Display current data from several APIs
- Carbon intensity
- Global Climate Indicators: temperature anomalies, sea-level rise, ice-melt, etc.

Responsive layout

Provide links to your:

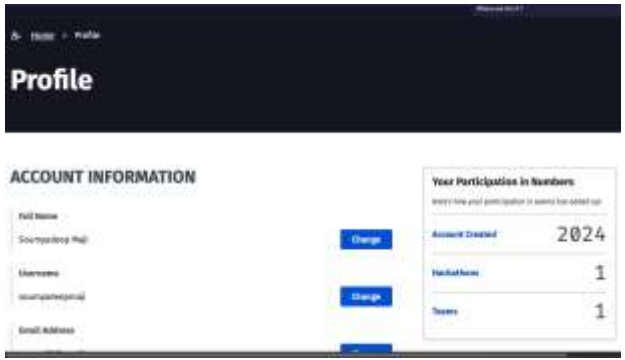
1. GitHub Public Repository
2. Demo Video Link (3 Minutes)
3. Final Product Link

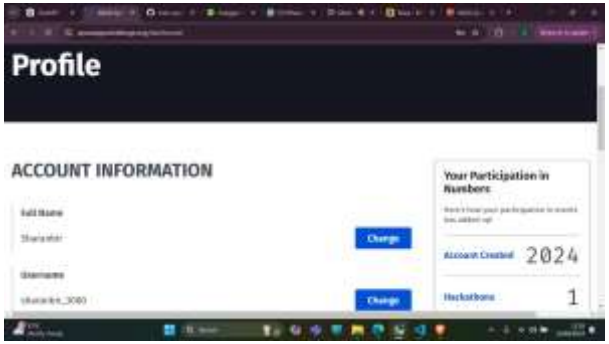
GitHub: DjangoMustang GitHub repository

Video link: YouTube demo video

Website link: Interactive comic website

Screenshots for proof of registration in official NASA website





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Thank You