🎤 Jay Sanghvi – Part 1: Introduction + Rover + Weather Station

Good [morning/afternoon] respected judges, teachers, and friends.
I am **Jay Sanghvi**, from Class 8.

Together with my teammate **Adi Sen**, we present to you our innovative project:

🌱 **EnviroBot X – Smarter Tech, Greener Planet**

This smart agriculture system brings together environmental monitoring, automated irrigation, renewable energy simulation, and agri-tourism education — all into one unified platform.

Let me begin with the **Bot X Rover**, the heart of our project.

Our rover uses a **Raspberry Pi 4 computer** and an **ESP32 microcontroller**, combining mobility and intelligence.

🔹 The **Raspberry Pi 4** processes real-time images from a camera and performs **machine learning–based crop health detection** — spotting dryness, weeds, or unhealthy plants.
🔹 The **ESP32**, which stands for **Espressif Systems 32-bit Wi-Fi and Bluetooth Microcontroller**, is used to control motors, read sensors, and send wireless data.

The rover is equipped with:

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- A **DHT11 sensor** to measure **temperature** and **humidity**
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- A **soil moisture sensor** to detect dryness
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- A **water level sensor** for flood detection
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This data helps farmers take better decisions on irrigation and crop protection.

Now coming to our **weather station**.

We've built a compact and wireless weather unit using the **ESP32 microcontroller** and an **OLED display** – that's an **Organic Light Emitting Diode** screen.

It shows:

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  Real-time **temperature**, **humidity**, and **flood status**
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  Alerts using a **passive buzzer** and **LEDs** for extreme conditions
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This helps in local weather tracking and better preparedness.

Now I invite **Adi** to explain the rest of the system.

□ Adi Sen – Part 2: Sprinkler + Renewable Energy + Drone + Tourism + Conclusion

Thank you, Jay.

Let’s talk about our **smart sprinkler system**.

It uses a **soil moisture sensor** to detect how dry the soil is.

If the soil is dry, it **automatically activates water sprinklers**.
When the soil is moist again, the sprinklers turn off — saving a lot of water.

 In India, more than **60% of irrigation water is wasted**, according to the Ministry of Jal Shakti.
Our system reduces water usage and boosts irrigation efficiency.

Next, we've included **renewable energy simulations** in our model to promote green power:

 Solar energy – using solar panels to run small devices.
 Hydropower – where flowing water rotates a turbine connected to a generator.
 Wind energy – with a working windmill that powers a motor using airflow.

These demonstrate how farmers can generate clean energy and reduce their dependence on fossil fuels.

We've also designed a concept model of the **X Drone**.

It's equipped with a **camera** and **pressure sensors**, and can be remotely controlled.
This drone can be used for:

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Aerial crop imaging

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Spraying fertilizers

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Checking field health from above

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This saves time and effort in monitoring large farms.

Finally, we've added an **agri-tourism zone** to our project.

Here, visitors can:

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Experience real farming methods

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- Learn how technology supports agriculture
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- Appreciate the hard work of farmers
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This builds awareness and connects people to rural India in a meaningful way.

□ Conclusion – Both Together (Optional)

Jay:
So in conclusion, EnviroBot X is not just a tech project…

Adi:
…it's a vision for a **smarter, greener, and more sustainable future**.

Jay:
We thank you for your time and hope this inspires real-world innovations in agriculture.

Adi:
Thank you once again. We are **Jay Sanghvi** and **Adi Sen** from Class 8.