Who?
We started this project with the aim to work towards enhanced and improved waste management systems using technology. Our mission is to create a cleaner and eco-friendly environment by incorporating machine learning to automatically segregate waste based on its type. With a vision to conserve the environment and our resources, we developed a functional code for smart waste segregation, combining our technical skills with creativity. Through this, we aim to reduce landfill waste and build an efficient waste management system.

Individual Bios

Ayan - Ayan is a 15 year old extremely passionate about the convergence between science and computation in creating real-world change. With interests as wide as creative writing and trekking, he loves to explore and dive deeper across a vast spectrum of fields and disciplines, whether they are the arts, humanities or life sciences. Ayan hopes to use technology to make everyday systems around us more efficient, effective, and sustainable in their approach.

Tara - Tara, a 15-year-old with a passion for biology, computer science, and art, loves using visual representations to bring concepts to life. Driven by her commitment to innovation and sustainability, she is channeling her skills into developing machine learning systems to improve waste segregation. With a vision to enhance efficiency and protect the planet, Tara is trying to make meaningful contributions toward a cleaner, greener future.

Saketh - Saketh is a 15 year old, with a strong passion for medicine, his past projects have revolved around different subjects like biochemistry, microfluidics, and more. Outside of the school, he loves going to the gym, binge-watching, and hanging out with his friends. He hopes that SegreGate creates a space where trash wastage is minimized, resources are conserved, and communities become more sustainable by adopting smarter technological systems.

Moksha - Moksha is a 15-year-old with a strong passion for sustainability and psychology. An avid lover of music and dance, she enjoys exploring diverse fields within the arts and expressing her creativity through playing the piano. Through this project, she hopes to enhance efficiency and promote sustainable practices that positively impact communities and the environment.

Core Values

1. Sustainability: We aim to protect the environment by reducing waste and creating more effective waste management systems
2. Innovation: We utilize creativity with technology to create smarter solutions for waste management
3. Efficiency: We are focused on developing solutions that are reliable, practical, and make processes easier and more streamlined
4. Collaboration: We value the importance of working together and combining different ideas to create effective solutions

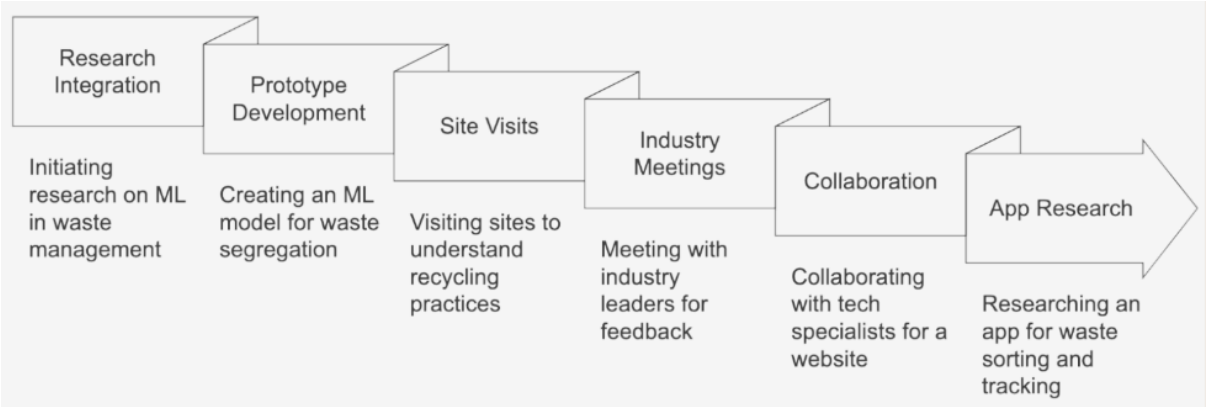
Why?

- Living in the newer side of Hyderabad, we live amongst modern settings - except, the way we manage waste hasn't changed
- Our project, unlike most others, didn't start because of one inciting incident. It was more a culmination of the many experiences we had with garbage - be it the sights of metal cans and glass bottles floating on lakes across the city or the dark soot rising from burning plastic just a few kilometers away
- Our mindset is at the root of all challenges we face with waste - we assume garbage is disposable, as compared to something that can find a new meaning through a new form
- If today, we asked ourselves to use a product when we knew it was recycled, many would have apprehensions, because we associate waste with something filthy or foul to something
- We asked ourselves - what would the world look like without any waste? Our answer? A society that was self-sufficient, solving the root of most problems we face today - scarce resources
- This answer led us deeper into understanding exactly why waste remained a persistent problem. We realized while there was still much more that could be done, we had in place the scientific understanding and technological devices to make waste management possible

- In truth, the main challenge lay in the lack of implementation and investment in processes that delivered waste in the right form (segregated by category) to recycling companies, who had the infrastructure to render them useful for public use
- This became our key problem area to tackle - how we could change the way segregation was done in our local area, improving its efficiency, effectiveness and ability to reach the target customer, which in this case, was recycling firms

Our story

We are a passionate team of 10th-grade students committed to tackling unsustainable methods of waste management and recycling. Over the past year, our journey in developing a machine learning-based waste segregation project has been



driven by continuous research, feedback from experts, and hands-on learning.

Timeline for the Future

- Short term, we plan to create and launch a mobile application that demonstrates how our ML model functions, allowing users to get a glimpse of our product and test it via real-world examples.
- To get our product to more communities, families, and individuals, we hope to collaborate with different waste management companies, their assistance ensures the scope for gaining a broader customer range.
- As more and more users, see and understand the need for our solution, our next step focuses on creating a **physical** product, that uses our ML model as its' backbone.
- Ultimately, we aim to establish a hardware device integrated with robotics and artificial intelligence. A simple machine that segregates plastic waste by leveraging a camera, a few sensors, and our ML model.
- Finally, after the creation and testing of our device, long term, our goal is to implement our solution in waste segregation facilities around India, optimizing and revolutionizing waste segregation in the country.