

HackAP – Design

1 & 2 April 2023

AU Incubation Center (ā-Hub)

Alcove Partners, AU Incubation Center (ā-Hub) and TiE Andhra Pradesh are happy to announce the third in the HackAP series of hackathons. The theme of the hackathon is 'Design'. Participating teams are expected to come in person to the ā-Hub on 2nd April to refine and demonstrate your solution. The hackathon is sponsored by Ideas2Innovate and Sandlogic Technologies Pvt. Ltd.

We encourage participants to pick one of the following real-world problems and come up with a solution. You should be able to show a prototype or at least a detailed drawing/schematic of your proposed solution.

Problem statements:

1. Problem: Train Accessibility

Description of the Train Accessibility problem: Due to the difference between the height of the train and the platform, it is not easy to get on and off trains for regular adults with luggage. For children, senior citizens and the differently abled, this is a major challenge. Your challenge is to design a solution that will allow for everyone to board the train and alight from trains with ease. Your solution should preferably NOT expect any permanent change in the design of the trains or the platforms.

2. Problem: Traffic flow & pedestrian safety at the Maddilapalem junction - Visakhapatnam

Description of the Maddilapalem junction traffic problem: Maddilapalem junction (<https://goo.gl/maps/fwDoEYiM63jqx56k6>) has traffic flowing from 6 different directions: Andhra University, Pithapuram Colony, Isukathota, Maddilapalem RTC depot, Old TB Hospital/Satyam Junction, and Rama Talkies. Except for traffic from the Old TB Hospital/Satyam Junction into Maddilapalem RTC depot or towards Isukathota, all other traffic has to manoeuvre oncoming, merging or turning traffic. For pedestrians, it is a nightmare, to cross over to any side. Your challenge is to design the junction in such a way that traffic flows smoothly with the least amount of friction and pedestrians can safely cross the junction. Your solution should NOT involve any kind of flyover or foot overbridge or subway. Maps are provided at the end of this document.

3. Problem: Building Accessibility

Description of the Building Accessibility problem: Most buildings have 5-10 steps that may make it difficult for children, senior citizens and the differently abled to enter or exit them. Your challenge is to design a solution that overcomes this problem without the necessity of any permanent structures being built. The solution should be low cost and flexible while supporting weights up to 150 kgs. For example, it should also support moving heavy goods in and out of the buildings easily.

4. Problem: Plastic waste into raw material

Design a machine which can take everyday plastic disposables as an input which can become a raw material to a plastic recycling company.

Part of the problem to be solved:

How do you incentivise people to deposit plastic into that machine? One needs to keep in mind that the depositor can come from different socio economic background.

How does the machine identify if it is plastic that is being deposited. If not, how to reject it while making sure it doesn't create more garbage around the machine.

How will the economics work? How do we cover the installation, repair/maintenance, collection and the incentive costs? <<— this isn't part of design per se, but might be an interesting business case to think about for the participants.

Participants are encouraged to think about:

- how many households/area will each machine handle?
- collection process
- incentive program ideas
- checks and measures for fraud

5. Problem: Beach cleanup tool

Design a beach cleanup tool(s) which anyone can use on-demand.

Parts of the problem to be addressed:

- it should be easy to use by an individual
- it should be cost effective
- it shouldn't collect sand
- it shouldn't disturb the ecosystem
- it should be easy to dump the collected garbage (things to consider: hygiene)
- materials used should be durable (things to consider: coastal weather)

This could be a local or municipality initiative in a few beaches to encourage the local public to clean while they walk and dump on their way out. It can be

done using the same tech as Yulu using an app with pick up and drop points at entry and exit places of beach.

6. Problem: Friendly and Positive Social Media Platform

Design a new social media platform that reduces online harassment and promotes positive social interactions.

7. Problem: FinTech solution for easier financial management

Design a budgeting app that uses data analytics to track expenses and suggests ways to save money.

8. Problem: Sustainable Packaging

Design a sustainable packaging solution for take-out food such as chutneys, sambar, tea, coffee, soups, etc. The solution should be both eco-friendly and cost-effective.

9. Problem: To-Do List/Task Management

Description of the problem: You've joined a new team there isn't an effective task management system in place, making collaboration challenging. Your role is to design a solution that facilitates task management and delegation based on your team of three's availability. In your design solution, depict the status, review and closure of tasks too.

Your design solution must consist of relevant user flows, and basic wireframes that illustrate your idea.

For any questions, please contact: auincubation@gmail.com or use the WhatsApp group (<https://chat.whatsapp.com/BAIiMFsO7tr3mS5ZaF9wKd>)

All the best.

Map images of Maddilapalem traffic junction courtesy Google Maps:



