The DPG Tech Fusion Hackathon

22nd, 23rd March 2024, Pune

About the Hackathon

The DPG Tech Fusion Hackathon is all about bringing people together to create digital solutions that make a positive impact on society using DPG (Digital Public Goods) and (DPI) Digital Public Infrastructure.

This event invites outcome oriented innovators to provide solutions to challenging problem statements using DPGs and DPIs. offering mentorship from industry leaders, cash prizes and networking opportunities. Engage in creating impactful solutions for the challenges empowering India. Join us as we together dive into the world of digital public goods, where your ideas and skills can make a real impact on society.

This hackathon will be a solutioning hackathon & participants will be expected to review the problem statements & propose solutions leveraging various DPIs & DPGs. We recommend that each team has a mix of software professionals, students, design professionals & product folks.

The hackathon outcome should be a Product Pitch deck covering the problem statement understanding , technical design as well as UX wireframes. Working code though not compulsory will get bonus points.

Hackathon Timelines & Milestones.

As part of the hackathon, you will be expected to check in with your mentors at certain set times during the hackathon. Milestones are marked in **Blue**.

Hackathon Activities	**Date / Time**
Team Registrations Start Team Registration Form	17 March

Team Finalisation and Mentor Assignment	Event Day 1 22 March
Hackathon briefing	Event Day 1 22 March, 12:45 PM
Lightning Talks on DPI & DPGs	Event Day 1 22 March, 12:55 PM
Teams start working on solutions	Event Day 1 22 March, 2:30 PM
Milestone 1: High Level Solution Design Review	Event Day 1 / 22 March, 3:00 PM
Milestone 2: Solution Detailing, Wireframes, Mockups & Tech Design	Event Day 1 / 22 March, 5:00 PM
Milestone 3: Prototype or POC (Proof of Concept) demo to Mentors	Event Day 2 / 22 March, 10:00 AM
Milestone 4: Upload a 2-3 min Short/ Reel on Instagram/Youtube with the hashtag #DPGTechFusion	Event Day 2 / 22 March, 11:30 AM
Milestone 5: Submit presentation and prototypes to Jury including a link to Video	Event Day 2 / 22 March, 12:00 PM
Jury announces shortlisted teams for final presentation	Event Day 2 / 22 March, 1pm
Final Presentation to Jury & Audience by shortlisted teams	Event Day 2 / 22 March, 2pm

Announcement of winning teams	Event Day 2 / 22 March, 3:15 PM

Evaluation Criteria

Your submission will be evaluated by the Jury on the following criteria. The best submissions will be shortlisted for doing a full pitch presentation in front of the Audience & Jury.

- Understanding of the Problem Statement
- Innovation and Creativity
- Feasibility and Practicality
- Leveraging of DPGs/DPIs/Open-source
- Social Impact
- Final Presentation
- Bonus points for any live demo

Assistance Available to Hackathon Teams

DPI DPG Lightning Talks

The breakout lightning talks will give the teams an overview of various DPI and DPGs. We recommend you split up your teams so you get an understanding of talks across different breakout rooms.

DPG DPI Technical Mentors

Mentors associated with various DPI & DPGs will be available throughout the event to help you from a technical perspective.

Problem Statement Mentors

Problem Statement Mentors will be Product folks with whom you can go deeper on the problem statements & help you validate your solution from a functional perspective.

DPG Demos at Experience Centre

Hackathon Participants can get a demo experience of various DPGs at the Experience centre booths.

Suggested Execution Structure for the Teams

Team Formation:

- Form teams based on interest, individual skills and expertise
- Ensure a diverse skill set within the team to cover various aspects of the problem such as problem analysis, technical know-how, DPG/DPI/open-source exposure, UI/UX and mockup capability, presentation skills
- We recommend that each team has a mix of software professionals, students, design professionals & product folks.

Understanding the Problem Statement:

- Read the problem statement carefully
- Identify key requirements, constraints

Ideation and Brainstorming:

- Conduct research related to the problem domain.
- Brainstorm potential solutions and approaches.
- Consider both technical and non-technical aspects

Planning and Strategy:

- Define clear goals and milestones.
- Allocate tasks among team members.
- Set a timeline
- Check what DPGs/DPIs/open-source can be leveraged

Solutioning, Developing Prototype or POC:

- Solution Approach
- UX Mockups
- Prototype/POC

Validating, Testing Solution:

- Validate if solution meets requirements from the problem statement

- Validate POC/Mockups/Demo

Final Presentation & Demo

- Prepare to dazzle the hackathon jury members with your solution
- Prepare presentation by stitching deck and demo of prototype/POC/mockups
- Live Demos get extra points

Expectations from Participants

- Bring your own laptop
- Wifi will be provided, but due to the number of participants, please carry your phone / hotspot as backup
- Ensure your laptops have the required tools like IDE's

Guidelines

- Final submission should be done before specified deadline
- In case of any disputes or concerns, the decision of the organisers and jury panel will be final
- Participants should adhere to a code of conduct that promotes inclusivity, respect, and professionalism.

Hackathon Problem Statements

Problem 1

Empowering Rural Entrepreneurs for Sustainable Development

Problem Statement:
Unlocking the entrepreneurial potential in rural India is not just a necessity but an opportunity to drive sustainable development. Rural India has a lot of untapped entrepreneurial potential, yet many aspiring entrepreneurs face significant challenges in accessing vital resources such as incubation, support, mentoring, collaboration, knowledge of market opportunities, and capitalising on local skills.

In order to foster and empower rural entrepreneurship, the challenge is to create innovative solutions that address these key pillars and bridge the gap between rural entrepreneurs and the resources they need to thrive. There is a need to enhance the entrepreneurial ecosystem for rural India to empower rural entrepreneurs

Problem 2

Accelerating Renewable Energy Adoption Through Innovation and Collaboration

Problem Statement :
India stands at the crossroads of a pivotal energy transition, and the time has come to accelerate the adoption of renewable energy solutions. The challenge is to develop cutting-edge solutions that not only raise awareness about the benefits of renewable energy but also actively contribute to overcoming the practical challenges hindering its implementation. There is a need to raise awareness and facilitate the widespread adoption of renewable energy solutions in India by harnessing the power of technology, creativity, and collaboration to address the barriers hindering the seamless integration of renewable energy sources into our daily lives.

Problem 3

Empowering Farmers Through Data-Driven Insights

Problem Statement:
In the realm of agriculture, farmers face numerous challenges due to the lack of timely and accurate information. The absence of essential data, such as real-time weather based advisories, crop-cycle-based advisories, and knowledge sharing of empirical insights, hinders optimal decision-making throughout the farming process. This hackathon aims to address these issues and empower farmers with improved access to crucial information, fostering better crop choices and enhancing overall yield.

Problem 4

Minimising Disruptions for Sustainable Urban Development

Problem Statement:
India is developing at a great speed. There are a lot of infrastructure projects like metro line work, bridge construction going on in various cities. In densely populated urban areas, citizens often face daily life disruptions caused by traffic congestion, bad road conditions, and road closures due to ongoing infrastructure development. These disruptions not only lead to inefficiencies in daily routines but also contribute to environmental challenges and decreased overall quality of life. There is to minimise disruptions caused by traffic congestion, road conditions, and road closures in densely populated urban areas. The goal is to enhance urban harmony by improving daily life experiences for citizens and fostering a more sustainable and efficient urban environment.

Problem 5

Addressing Urban Water Scarcity

Problem Statement:
In recent years, many big cities have faced a severe water crisis, e.g. Bangalore. Pune is no different, and climate change is only accelerating the problem. There is an urgent need to manage and distribute water resources effectively in cities. The current methods of deciding water distribution, discovering and utilising watering points and tankers are often inefficient and lack transparency, leading to water shortages and inequitable access. A solution is desired that leverages the principles of fairness, efficiency, and sustainability to enable individuals and communities to easily locate watering points and tankers.

The solution should not only address the immediate needs of water starved cities like Bangalore and Pune but also be scalable and adaptable to other regions facing similar challenges at different levels of similarity. The diverse policies and regulations governing water distribution in different areas, and design your solution to accommodate these variations while ensuring optimal resource utilisation. Your solution should be modelled as a Digital Public Infrastructure that can help India with water, just like UPI helped with payments. 22nd March, World Water day is an apt day to take up this challenge!

Problem 6

Empowering Teachers and Parents for Early Childhood Development

Problem Statement:
In the pursuit of holistic education, it is imperative to focus on the foundational stage of a child's learning journey. The aim is to address the critical need for developing social, emotional skills, as well as core literacy and numerical competencies in children, of age 3-8 years, using their mother tongue or regional language to ensure effective communication and comprehension.

The collaboration of teachers and parents will play a pivotal role in creating a supportive learning environment. The teachers need to be empowered to cater to the teaching needs of both as an individual student, as well as a cohort of students, based on specific insights. The nature of aid could be, but not limited to, in the form ability to assess the students, obtain a teaching pack of contents, for a given criteria etc. and also conversational learning experience based on the student sentiments, behaviours, interest levels, socio economic context and other possible factors, in which the student learns.

Problem 7

Fostering Collaborative Learning and Bridging Gaps Between Students and Experts in Digital Education

Problem Statement:
In today's digital age, children have access to various online learning platforms, yet many lack the means to connect with experts and peers for personalised guidance and clarification in a trusted environment. This challenge is particularly pronounced in a diverse and populous country like India, where ensuring equity in learning experiences is paramount. There is a need to have meaningful connections and interactions between learners and experts/peers, fostering a collaborative online learning ecosystem. And enable learners to seek clarifications, guidance, and support asynchronously or synchronously, enhancing their learning journey and making it more impactful and effective.

Please refer to section “Resources - DPGs, DPIs, Open Source”

Resources - DPGs, DPIs, Open Source

DPG Documentation, Links & Resources

DPG/DPI/Open Source	Link
Sunbird	https://sunbird.org/product/building-blocks
Sunbird RC	https://rc.sunbird.org/learn/readme
ONDC	https://ondc.org/
Bhashini	https://bhashini.gov.in/
Sunbird AIBot	https://bot.sunbird.org/
Sunbird ED	https://ed.sunbird.org/
Digilocker	https://digilocker.gov.in/
Mentor	https://elevate-docs.shikshalokam.org/mentor/intro
ONEST	https://onest.network/
Open Source CMS (Wordpress, Drupal, Joomla),	https://wordpress.com/ https://www.joomla.org/ https://www.drupal.org/
Sunbird Saral	https://saral.sunbird.org
Anuvad	https://anuvaad.sunbird.org/
Obsrv	https://obsrv.sunbird.org/
Knowlg	https://knowlg.sunbird.org/
Beckn	https://becknprotocol.io/
Sunbird Serve	https://serve.sunbird.org/
Digilocker	https://digilocker.gov.in/
Sunbird UCI	https://uci.sunbird.org/
MOSIP	https://mosip.io

Sunbird ALL	https://github.com/Sunbird-ALL/community

Help Bot for help on Sunbird Building Blocks

This bot can help answer questions about Educator (ED), Co-creator (coKreat), Librarian (Knowlg), Examiner (inQuiry), Learner (Lern) & Observer (Obsrv)

https://bot.sunbird.org/