#UrbanDataConclave

DATATHON

The Urban Edition

10th Aug- 23rd September 2023

Background

The premise of a data hackathon in an Indian context could be centered around leveraging data-driven solutions to address specific challenges or opportunities faced by Urban India.

"Data for Urban India: Empowering Innovation and Development"

In this data hackathon, participants are invited to harness the power of data to drive innovation and contribute to India's urban development across various domains. The hackathon aims to foster collaboration and problem-solving among data enthusiasts, researchers, developers, and professionals. "You pick a theme, a problem and build a solution!"

The hackathon could be organised in collaboration with government agencies, industry partners, and academic institutions to provide participants with access to relevant datasets, mentors, and resources. The competition would focus on fostering creativity, collaboration, and practical solutions that have the potential to make a positive impact on Urban India's social, economic, and environmental landscape.

Themes

Statements for the hackathon revolve around key areas relevant to Urban India, such as:
1. Environment
2. Water, Sanitation and Hygiene
3. Gender

In India particularly in the urban sector, growing population, rapid industrialisation, and increased demand for services and amenities create a lot of hindrance in the implementation of urban policies. Internationally as well, broad themes of Climate, WASH and Urban Planning have been identified as a cause of concern and require immediate action. The National Institute of Urban Affairs is a premier think tank with over 45 years of expertise in informing India's urban policies and takes cognizance of the same.

Problem Statements

The teams/individuals can choose a city, it can be their city or any other city and devise a solution on the basis of the problem statement for the same.

- There are RF ID systems in place to track and monitor integrated solid waste management in a city where each household/ residential settlement is tagged, but there is dissonance between the usage of RF ID by the residents and the waste collectors. This problem will remain unless a tool is designed to effectively monitor every level of waste collection and treatment. Can technology help in integrating waste- collection, transportation and segregation/disposal?

- Urban ecosystems are heavily getting affected by climate change, where urban flooding has become a recurring problem that the local authorities deal with. A robust system like Supervisory Control and Data Acquisition (SCADA) system will be best suited for real-time monitoring of the drainage systems. Can a prototype of SCADA be generated to monitor the drainage system to understand and schedule/ de-schedule the cleaning of the drainage to reduce the possibilities of urban flooding?

- Urban heat islands significantly contribute to the escalating temperatures in specific local areas. Understanding the presence of these heat islands forms the basis for emphasizing the significance of green spaces. By extensively analyzing satellite imagery, map the heat patterns of a city with a population ranging from 50,000 to 100,000, thereby establishing the correlation between these heat islands and the presence of green spaces.

- A larger quantum of data on violence against women is recorded not only by the National Crime Records Bureau but also by various Civil Societies, NGOs etc. on a larger scale. From a perspective of informing policy decisions, all these databases merged into one would serve as a larger database for decision-making. By not reinventing the wheel, upscale the already existing databases revolving around women's safety.

- To evaluate an economy's performance, the Gross Domestic Product (GDP) serves as a fundamental key indicator. However, in India, we currently only have GDP estimates at the Gross District Domestic Product (GDDP) level. This limitation poses a challenge for rapidly evolving urban areas with diverse economic activities, as they cannot establish a Gross City Domestic Product (GCDP). Fortunately, there is an ample amount of spatial information available through nightlight data, which showcases the significant economic growth in urban peripheries. This raises the question of whether spatial data can be utilised to construct the GCDP and address the data gap in assessing the economic competence of urban growth centers?

- In the face of escalating climate change, certain marginalised and vulnerable communities are disproportionately impacted. By recognising and addressing the vulnerabilities of these groups, society can strive for a more inclusive and resilient approach to climate change mitigation and adaptation. Develop an instrument for measuring the magnitude of the impacts of climate shocks and disasters on disadvantaged groups.

Urban Data Sources: Examples of some public domain these relevant sources for this hackathon:

·https://smartcities.data.gov.in/
·http://rchiips.org/nfhs/factsheet_NFHS-5.shtml
·https://data.gov.in/
·https://mospi.gov.in/download-reports?main_cat=Nzly&cat=All&sub_category=All
·https://censusindia.gov.in/census.website/data/census-tables

(please note: the dataset that is permissible to use should be available in the public domain with due credibility)

What do we need?

The problem statements have been formulated by seasoned sector experts who possess extensive experience in the domain and a deep understanding of the pressing issues faced by the urban population. The objective of this challenge is to provide an opportunity for individuals to identify potential solutions for these well-defined urban problems. This datathon is aimed at identifying idea-based solutions which come with a definitive road map of implementation, a prototype provides an edge to the submission. The National Institute of Urban Affairs will collaborate with internal teams and individuals to further develop and refine the best solutions in partnership with the participants. These efforts aim to support urban decision-making processes and contribute towards effective urban governance.

Eligibility and General Instructions for the Participants:

- Open Participation: Participants are requested to register first and then proceed. Open to all participants willing to develop urban solutions of age 18 and above.
- Team Formation: Hackathons may allow individuals to participate as solo contestants or encourage team participation of not more than 4 people
- Submissions are invited from everyone in an idea-based approach. At the same time the solution proposed should have a detailed implementation plan with timelines. The quicker the solution is implemented, the better.
- Sending entries: All participants are requested to send their entries via a google form: https://forms.gle/bLHqg69sBSfTAyau6, the deadline for entries is 20th September 2023, by 5 PM. The entries should have two elements,

    a) PowerPoint presentation (not more than 7 slides) capturing
    - Title of the solution and the problem statement it caters to
    - Team members details
    - Abstract of the solution
    - Approach
    - Methodology
    - Implementation plan
    - Timelines

    b) Documentation of the solution provided in a PDF format across the head:
    - Title & Abstract
    - Introduction
    - Analysis of the problem statement
    - Proposed solution
    - Implementation Plan along with timelines
    - References
    - Annexures (If any)

- The document should not exceed more than 10 pages including annexures.The working data file which has been used to arrive at the solution/analysis
- Prerequisites: Depending on the complexity of the hackathon, participants might be expected to have previous knowledge of data analysis, problem-solving through evidence-based approaches, programming languages, machine learning, or other relevant areas
- Data Usage Restrictions: Usage of data available in the public domain. The participants must send their working sheets along with the entry.

Judging Criteria

- The evaluation criteria for the teams will include:
- Innovation: Assessing the level of originality in the solution, whether it introduces a new approach or builds upon existing ideas
- Solution Development: Evaluating the completeness of the solution
- Practicality: Determining the feasibility and applicability of the proposed solution in practical urban settings
- Cost-effectiveness: Examining the efficiency of the solution in terms of cost, ensuring optimal utilisation of resources
- Scalability: Assessing the ease with which the solution can be expanded or adapted to different scales and contexts
- Sustainability: Evaluating the long-term viability and impact of the solution on environmental, social, and economic aspects
- Quick Implementation: Appreciating solutions that can be swiftly implemented to address urban challenges effectively.

What is in it for you?

The Best Use Cases/ Entries will get a chance to win prizes upto 3 lakhs. Top 3 submissions will also get a chance to present their work in the conclave to be held on 30th and 31st October, 2023.
Additionally, the winning solutions will be provided benefits from our Technology Partner-Amazon Web Services (AWS)mentorship

- AWS Partner Status: Access to partner resources on the AWS Partner Network portal
- AWS Promotional Credits (upto $5000), specialised AWS training, collaboration opportunities with AWS customers and members of the AWS Partner Network looking for innovative solutions
- Start-ups/Innovators can enjoy a Go-To-Market: Support for jointly pitching and supporting the solution to large enterprises
- Testing new ideas with Amazon's innovation process like Working backwards and Digital Innovation workshops as a part of the benefits