

Ideation Phase

Brainstorm & Idea Prioritization Template

Date	28 January 2026
Team ID	LTVIP2026TMIDS66183
Project Name	Civil Engineering Insight Studio
Maximum Marks	4 Marks

Brainstorming ideas is a creative process where a group generates a list of potential solutions, suggestions, or concepts for a specific problem or project voting in brainstorming involves participants selecting and prioritizing their favorite or most promising ideas from the list to determine which ones should be pursued further.

Brainstorming for Civil Engineering Insight Studio:

The ideation phase focused on identifying real-world problems in civil engineering such as inefficient planning, lack of predictive insights, maintenance delays, and limited data visualization. Brainstorming involved civil engineers, academicians, students, and infrastructure planners.

The brainstorming phase focused on identifying major challenges faced in modern civil engineering projects and proposing digital solutions to address them. The team explored ideas related to structural safety analysis, construction analytics, sustainability evaluation, and smart decision-support systems.

The core idea prioritized was the development of an insight-driven platform that transforms raw engineering and project data into actionable intelligence for civil engineers and planners.

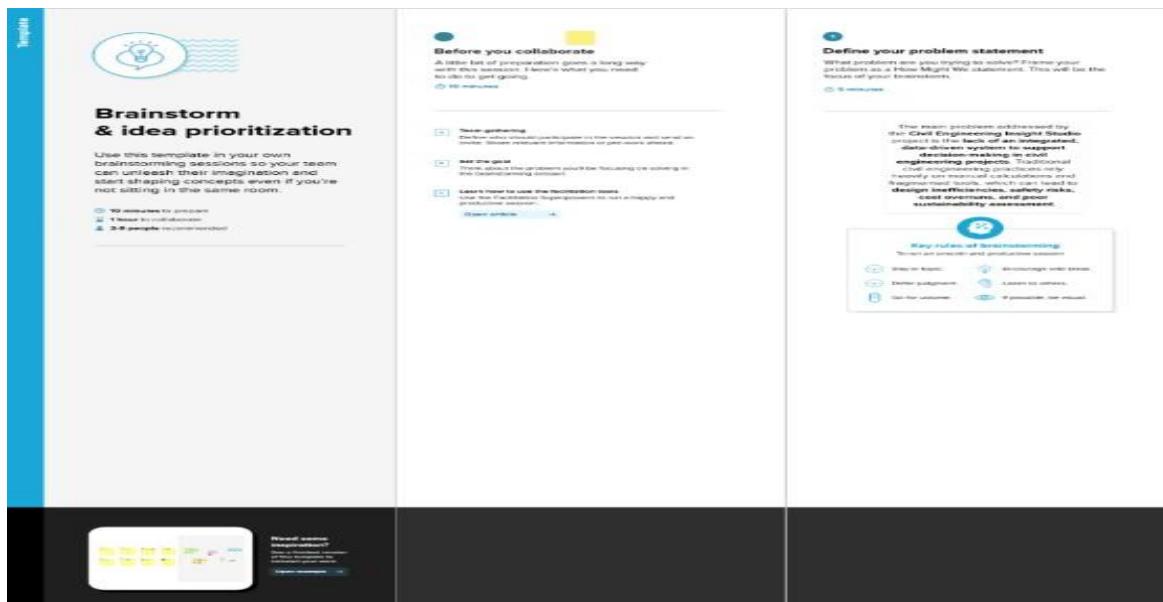
Step-1 : Team Gathering, Collaboration and Select the Problem Statement

To initiate the Civil Engineering Insight Studio project, a multidisciplinary team was formed consisting of members with knowledge in civil engineering fundamentals, construction planning, data analysis, and software development. Each team member was assigned a specific role based on their strengths, ensuring effective collaboration and balanced contribution throughout the project lifecycle.

The team conducted multiple brainstorming and discussion sessions to understand the current challenges faced in civil engineering projects, particularly in the areas of structural safety, cost estimation, material selection, sustainability assessment, and project monitoring. Academic

references, real-world construction case studies, and industry practices were reviewed to gain a deeper understanding of the gaps in existing systems.

During collaboration meetings, the team identified that many civil engineering projects rely heavily on manual calculations, static reports, and disconnected tools, which often result in design inefficiencies, delayed decision-making, safety risks, and cost overruns. The lack of a unified platform that provides integrated insights across different project parameters was recognized as a major problem.



Step-2: Brainstorm, Idea Listing and grouping

Brainstorm

Brainstorm any ideas that come to mind that address your problem statement.

10 minutes

Aswini

We thought of creating a system that can predict possible risks and errors before design occurs easily to avoid manual calculations manually.

We felt that integrating BIM or CAD tools would help in design visualization and accuracy.

Suhitha

We came up with the idea of using AI to predict possible risks and errors before construction starts.

Another idea was to implement a basic risk analysis to support eco-friendly construction practices.

We also considered real-time monitoring from construction sites to get live project updates.

Nitheshwar Reddy

We came up with the idea of visualizing data using graphs so results are easy to understand.

We also thought of implementing a basic risk assessment checklist for construction safety.

We also considered adding a module for basic foundation and soil analysis.

We feel that this project can help students understand theoretical civil engineering problems practically.

We also considered making a system usable for different types of projects like buildings, roads, and bridges.

Gowtham

Finally, we thought of generating simple reports and charts to help engineers understand project insights easily.

Group ideas

Take turns sharing your ideas while clustering similar or related notes as you go. Once all sticky notes have been grouped, give each cluster a sentence-like label. If a cluster is large then use sticky notes, try and see if you and friends can come up with groups.

10 minutes

Agreed upon plan

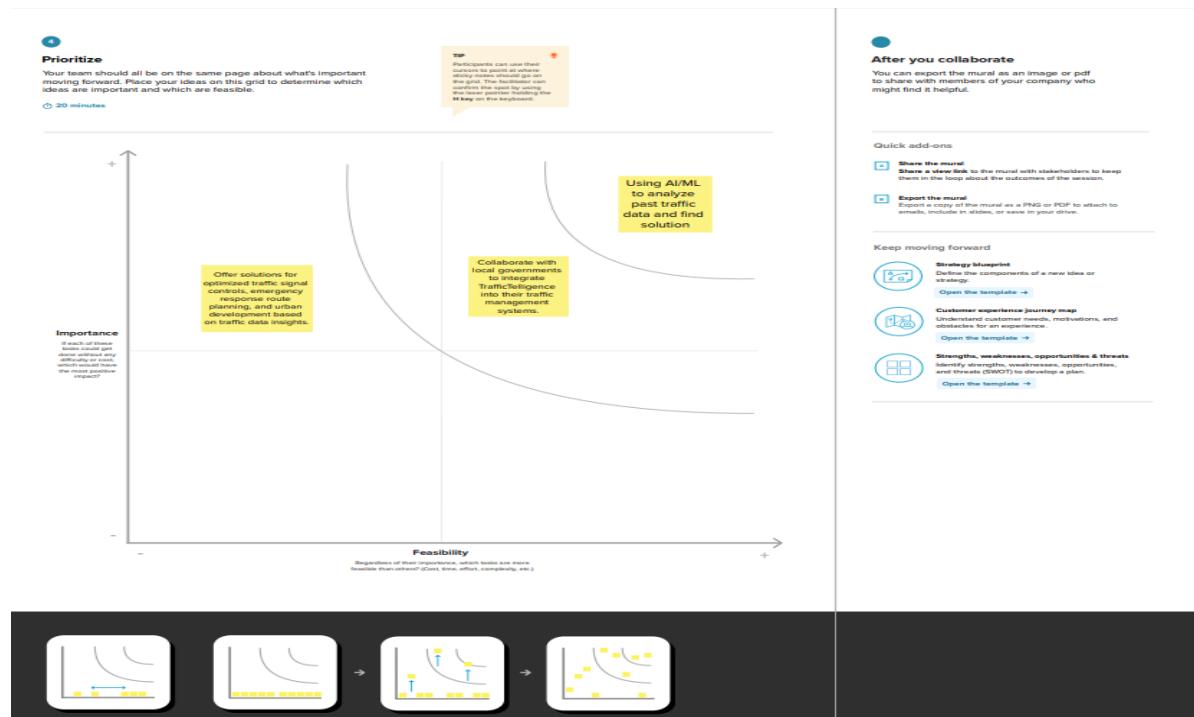
We agreed to use data analysis and basic AI concepts to study past civil engineering project data and generate useful insights.

We also decided to design the platform in a way that it can be extended in the future for real-time monitoring and smart city applications.

We agreed that the project should be useful for both academic learning and real-world civil engineering applications.

Step-3: Idea Prioritization

Idea prioritization is the process of ranking or assessing ideas based on specific criteria such as feasibility, impact, cost, or strategic importance to determine which ideas should be implemented or pursued first.



Here, we chose to use AI and data analytics to analyze past civil engineering data and provide better solutions for planning, design, and construction.

The second key idea involves collaborating with government and construction authorities to integrate Civil Engineering Insight Studio into public infrastructure planning, ensuring social impact and practical usability. The next idea focuses on extending the system to support optimized structural design and sustainable urban development through data-driven engineering insights.