

## Ideation Phase

### Brainstorm & Idea Prioritization Template

|               |   |
|---------------|---|
| Date          | 06 May 2023   |
| Team ID       | NM2023TMID17415   |
| Project Name  | A Reliable Energy Consumption Analysis System for Energy-Efficient Appliances<br>Brain storming |
| Maximum Marks | 4 Marks   |


#### Brainstorm & Idea Prioritization Template:

Brainstorming provides a free and open environment that encourages everyone within a team to participate in the creative thinking process that leads to problem solving. Prioritizing volume over value, out-of-the-box ideas are welcome and built upon, and all participants are encouraged to collaborate, helping each other develop a rich amount of creative solutions.

Use this template in your own brainstorming sessions so your team can unleash their imagination and start shaping concepts even if you're not sitting in the same room.




Reference: <https://www.mural.co/templates/empathy-map-canvas>


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



## Brainstorm & idea prioritization


Use this template in your own brainstorming sessions so your team can unleash their imagination and start shaping concepts even if you're not sitting in the same room.

 10 minutes to prepare  
 1 hour to collaborate  
 2-8 people recommended



### Problem Statement

A Reliable Energy Consumption Analysis System for Energy-Efficient Appliances  
Brain storming

 10 minutes

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**A Process Involved**  
Project Planning and Research in System Design  
Data Collection and Analysis  
System Integration and Testing  
Evaluation, Deployment, and Documentation

**B solution**  
The system aims to empower users to make informed decisions regarding their energy consumption and promote energy-saving behaviors.

**C Learn how to use the facilitation tools**  
Javascript,HTML,IOT devices,Data set

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## Step-2: Brainstorm, Idea Listing and Grouping

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**Brainstorm**  
Write down any ideas that come to mind that address your problem statement.  
  
10 minutes

Person 1

User-Friendly Mobile Application  
Develop a mobile application that allows users to monitor their energy consumption in real-time, receive personalized energy-saving tips, and track the energy efficiency of their appliances.

Person 2

Gamification for Energy Efficiency  
Create a gamified system where users earn points or rewards for reducing their energy consumption and using energy-efficient appliances.

Person 3

Social Comparison and Competition  
Implement a feature that allows users to compare their energy consumption with others in similar demographics.

Person 4

Energy Consumption Forecasting  
Develop algorithms that can predict future energy consumption based on historical data and weather patterns.

Person 5

Integration with Smart Home Automation  
Integrate the energy consumption analysis system with smart home automation technologies.

TIP

You can select a sticky note and hit the pencil (switch to sketch) icon to start drawing!

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**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 bigger than six sticky notes, try and see if you can break it up into smaller sub-groups.  
  
20 minutes

TIP

Add customizable tags to sticky notes to make it easier to find, browse, organize, and categorize important ideas as themes within your mural.

IDEAS

**Machine Learning for Appliance Recognition:** Utilize machine learning techniques to automatically identify and recognize different appliances based on their energy usage patterns. This would provide users with detailed insights into each appliance's energy consumption and enable targeted efficiency improvements.

**Collaborative Energy Saving Platform:** Create an online platform or community where users can share their energy-saving experiences, tips, and success stories. This collaborative approach can foster knowledge-sharing and inspire others to adopt energy-efficient practices.

**Educational Resources and Awareness Campaigns:** Develop educational resources, such as articles, videos, or online courses, to raise awareness about energy efficiency and empower users with knowledge to make informed decisions. Additionally, organize awareness campaigns in schools or communities to promote energy-saving behaviors among students and households.

**Energy Consumption Forecasting:** Develop algorithms that can predict future energy consumption based on historical data and weather patterns. This forecasting capability can assist users in planning their energy usage and optimizing their appliance usage accordingly.

**Integration with Smart Home Automation:** Integrate the energy consumption analysis system with smart home automation technologies. This would allow users to automate their appliances based on energy efficiency recommendations and optimize energy consumption through smart scheduling and control.

## Step-3: Idea Prioritization

Template

**Idea prioritization**  
  
Use this framework to rank ideas based on their feasibility and impact to visually compare the merits of multiple ideas. Deliver a set of ideas that your team wants to try out, and identify which of them need to be prioritized.

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**Collect your ideas in one place**  
**Objectives:** Clearly defining the project's objectives is crucial for setting a clear direction and focus.  
**Methodology:** Developing a robust methodology is essential for building a reliable energy consumption analysis system.  
**System Architecture:** A well-designed system architecture is critical for the successful implementation of your project.  
**Energy Consumption Analysis Algorithms:** The algorithms you choose to analyze energy consumption patterns will greatly impact the system's effectiveness.

High

Importance

If none of these ideas could get done, without any difficulty or cost, which would have the most positive impact?

Objectives

Clearly defining the project's objectives is crucial for setting a clear direction and focus. Make sure to prioritize this section to ensure the project's goals are well-defined and align with the desired outcomes.

Methodology

Developing a robust methodology is essential for building a reliable energy consumption analysis system. Prioritize this section to outline your data collection methods, processing techniques, and analysis procedures. Consider incorporating machine learning algorithms to enhance accuracy and efficiency.

System Architecture

A well-designed system architecture is critical for the successful implementation of your project. Give priority to this section to describe the components of the system, data collection mechanisms, and storage infrastructure. Additionally, highlight the integration of smart appliances and IoT devices to enable effective data gathering.

User Interface and Visualization

Providing users with an intuitive interface and informative visualizations is crucial for effective energy consumption analysis. Prioritize this section to describe the user interface design, real-time monitoring capabilities, energy usage breakdown, and interactive visualizations that facilitate data interpretation and encourage energy-saving behaviors.

Energy Consumption Analysis Algorithms And System Evaluation

The algorithms you choose to analyze energy consumption patterns will greatly impact the system's effectiveness. Evaluating the system's performance and gathering user feedback is essential to validate its effectiveness.

Low