

Ideation Phase

Brainstorm&Idea Prioritization Template

Date	19 September 2022
Team ID	PNT2022TMID44989
Project Name	Real-Time River Water Quality Monitoring and Control System
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.

Reference:

<https://app.mural.co/invitation/mural/igce0824/1667463328714?sender=ue93be257d54d6b3ac1cf1482&key=8f50e754-280d-49d7-9a9b-6a370a381f79>




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


Template



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



Before you collaborate

A little bit of preparation goes a long way with this session. Here's what you need to do to get going.

 10 minutes

A

Team gathering

Define who should participate in the session and send an invite. Share relevant information or pre-work ahead.

B

Set the goal

Think about the problem you'll be focusing on solving in the brainstorming session.

C

Learn how to use the facilitation tools


Use the Facilitation Superpowers to run a happy and productive session.

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1

Define your problem statement

What problem are you trying to solve? Frame your problem as a How Might We statement. This will be the focus of your brainstorm.

 5 minutes

Farmers put pesticides and pesticides on their crops so that they grow better. But these fertilizers and pesticides can be washed through the soil by rain, to end up in rivers.

If large amounts of fertilizers or farm waste drain into a river the concentration of nitrate and phosphate in the water increases considerably. Algae use these substances to grow and multiply rapidly turning the water green.

This massive growth of algae leads to pollution: when the algae die they are broken down by the action of the bacteria which quickly multiply, using up all the oxygen in the water which leads to many problems.

To avoid those problems, control the algae and monitor the water parameters like PH, temperature in the river water

Step-2: Brainstorm, Idea Listing and Grouping

2

Brainstorm

Write down any ideas that come to mind that address your problem statement.

10 minutes

TIP
You can select a sticky note and hit the pencil icon to start drawing!

DINESH

sensors used to measure parameters like turbidity, pH value and temperature of the water.

The acquired data will be directed to the cloud

If the values is greater the threshold value it alerts that the water is not clean

SRIKANTH

The nodes and base station are connected using WSN technology like Zigbee

Data collected by various sensors at the node side such as pH, turbidity and oxygen level is sent via WSN to the base station.

Data collected from the remote site can be displayed in visual format

It also can be analyzed using different simulation tools at base station

SHYAM

Initially to measure pH, turbidity, total dissolved solids (TDS) and temperature

sent the information to the microcontroller Arduino Uno

connect the device to a mobile phone via Bluetooth

android-based mobile application displays real-time test data

also displayed on the QC LCD screen connected to the microcontroller.

SURENDRAN

ultrasonic and water level sensors to detect multiple metrics

sensors are connected to the Nano Microcontroller Unit (Arduino Uno), which performs additional computations

The real time data collected is uploaded to the database

web application is used to show the water usage, alerts in case of water wastage

recommendations to users in order to help them planning better water utilization

SURYA

Four sensors are connected with Arduino-uno in discrete way to detect the water parameters.

Extracted data from the sensors are transmitted to a desktop application developed in NET platform

compared with the WHO standard values

classify whether the test water sample is drinkable or not

3

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

Group Idea

initially to measure pH, turbidity, total dissolved solids (TDS) and temperature using sensors

The collected data is given to the IBM cloud

then the values are compared to the WHO standard values

Alerting the authorities if the water quality is not good so that they can go and announce the localities not to drink that water.

Control the algae using Ultrasonic technology

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

Step-3: Idea Prioritization

4

Prioritize

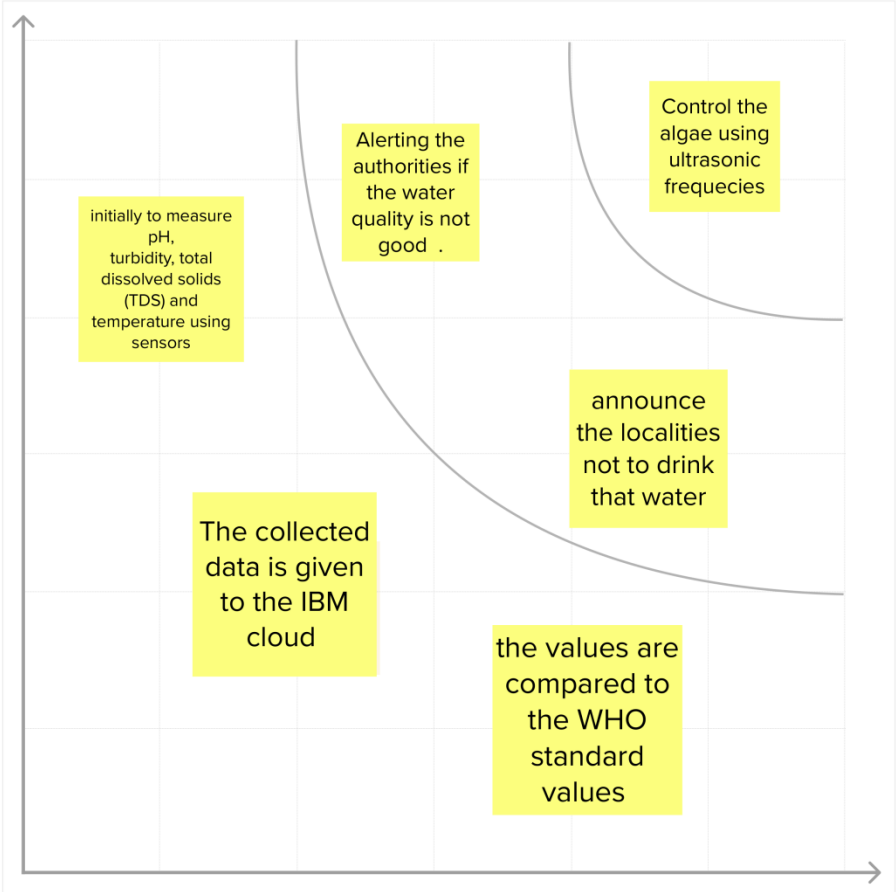
Your team should all be on the same page about what's important moving forward. Place your ideas on this grid to determine which ideas are important and which are feasible.

🕒 20 minutes



Importance

If each of these tasks could get done without any difficulty or cost, which would have the most positive impact?



Feasibility

Regardless of their importance, which tasks are more feasible than others? (Cost, time, effort, complexity, etc.)