**Ideation Phase Brainstorm & Idea Prioritization**

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| Date | 29 September 2022 |
| Team ID | PNT2022TMID30374 |
| Project Name | Real Time River Water Quality Monitoring System |
| Maximum Marks | 4 Marks |

**Brainstorm & Idea Prioritization**

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



**Step-2: Brainstorm, Idea Listing and Grouping**...

**2**

**Brainstorm**

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

**10 minutes**

**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 and break it up into smaller sub-groups.

**20 minutes**

Based on Sensors A Manual Task

Notifying residents of the presence of algae in their water over Wi- Fi

Web-based water monitoring application user interface

pH and water turbidity data encryption and decryption algorithms

Sensor data from the zig bee network

Tracking the location of an area with a severe algal bloom using GPRS

GSM modules for data collection and transmission on water quality to mobile applications

Constructing a mesh network with sensors for improved monitoring

Collecting water parameter data wirelessly through a network

Constructing a cloud database using graphs

**POONGUIZHALI M**

**POOMATHI B**

**RANJINI R**

**SANTHIYA S**

Temperature measurements are statistically recorded and stored as data

Creating an app to measure the pH, turbidity, and temperature of river water

Predicting the graph of the algal bloom

Water parameter monitoring with an Arduino board and sensors

Temperature, turbidity, and pH sensors connected to Arduino

Predetermined values in Arduino track the river's quality indicators

Determining pH, temperature, and turbidity threshold values

Image processing and two NRI cameras are used in the measuring apparatus

Water monitoring using a microcontroller node based on cloud data

Data from lab-based water parameters

Equipment for manually or semi- automatically controlling pH, turbidity, and water temperature

pH indicator using hydrophonics and aquaphonics technology

Measuring the amount of suspended silt using a turbidity sensor

The level of water is measured using an ultrasonic sensor.

Water-resistant temperature sensors prevent damage and electrical shock.

Nephelometer for measuring turbidity

Collecting contaminated water from field site ridges that has been exposed to fetilizer and pesticides

Algae growth can be predicted using current methods.

Turbidity train sensors measure clarity

To automatically send an SMS to a designated person whenever water quality is detected to be below the predetermined standard.

Any deviation in the water will be indicated by the buzzer.

Water contamination biotreatment

Water pollution is manually checked using a paper report.

Data from numerous sensor nodes should be assembled

A remote server can analyse real- time data gathered from an active site.

Methodology for removing air pollution to reduce algae

Chemical and biological changes identification of water using traditional techniques

Before it affects the entire water body, little dams are built and clearing the algae production

Controlling algae with ultrasonic radiation

A machine that works like an engine and uses chlorine to remove algae

Ion exchange technique upon detection

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| Temperature, turbidity, and pH sensors connected to Arduino |  | | |
|  | Turbidity train |  | |
| sensors |
| measure |
| clarity |
|  | Water |  |
| parameter |
| monitoring |
| with an |
| Arduino board |
| and sensors |
|  | The level of |
| water is |
| measured using |
| an ultrasonic |
| sensor. |

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| Constructing a cloud database using graphs |  | | |
|  | Notifying |  | |
| residents of the |
| presence of |
| algae in their |
| water over Wi- |
| Fi |
|  | Water pollution is |  |
| manually |
| checked using a |
| paper report. |
|  | Methodology |
| for removing |
| air pollution |
| to reduce |
| algae |

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| --- | --- | --- | --- |
| Predicting the graph of the algal bloom |  | | |
|  | pH and water |  | |
| turbidity data |
| encryption and |
| decryption |
| algorithms |
|  | Data from |  |
| numerous |
| sensor nodes |
| should be |
| assembled |
|  | Data from |
| lab-based |
| water |
| parameters |

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| Creating an app to measure the pH, turbidity, and temperature of river water |  | | |
|  | Collecting water parameter data wirelessly through a network |  | |
|  | Water contamination biotreatment |  |
|  | Temperature, turbidity, and pH sensors connected to Arduino |

Analyzing Prediction Water properties

**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**

Water monitoring using a microcontroller node based on cloud data

Web-based water monitoring application user interface

Determining pH, temperature, and turbidity threshold values

Creating an app to measure the pH, turbidity, and temperature of river water

Constructing a cloud database using graphs

Any deviation in the water will be indicated by the buzzer.

**Water pollution is manually checked using a paper report.**

**Importance**

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

To automatically send an SMS to a designated person whenever water quality is detected to be below the predetermined standard.

Tracking the location of an area with a severe algal bloom using GPRS

**Feasibility**

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