**Ideation Phase**

**Defining the Problem Statements**

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| **Date** | **26-09-2023** |
| **Team ID** | **3927** |
| **Project Name** | **Smart Water Management** |

**INTRODUCTION:**

The task is to use the advanced technology and data –driven strategies to efficiently and sustainably manage water resources. It involves the application of sensors, data analytics and automation to monitor, control and optimize water usage across various sectors including agriculture, park, garden and urban areas. Smart water management aims to reduce the water wastage, improve water quality and enhance overall water resource sustainability.

**PROBLEM STATEMENT:**

**Objectives:** To develop smart water management and reduce water scarcity in urban areas (parks and gardens) by using software tools.

**Data:** We have software tools (SKYSPARK & SENSEYE pdm) that detects if there is any malfunction in sensor that is used in the garden. The sensor is monitored by the software tools 24/7.This sensor helps us to reduce the water scarcity.

**KEY CHALLENGES:**

**Water Conservation:** The system optimizes water usage by irrigating only when necessary, reducing water waste and contributing to water conservation efforts.

**Cost Savings:** Lower water consumption leads to reduced water bills for municipalities or homeowners responsible for green spaces.

**Healthier Green Spaces:** By monitoring plant health indicators, the system ensures that plants receive the right amount of water, sunlight, and nutrients, leading to healthier and more vibrant green spaces.

**Environmental Sustainability:** Water-efficient irrigation practices support environmental sustainability goals by conserving a precious resource.

**DESIGN THINKING APPROACH**:

**Empathize:**

Understand the local water scarcity context, including its causes and impacts on communities.

Engage with stakeholders, such as residents, policymakers, and water experts, to gather diverse perspectives**.**

**Define:**

Clearly define the specific water scarcity problem or challenge you want to address**.**

Create a problem statement that focuses on the root causes and potential solutions.

**Ideate:**

Brainstorm innovative ideas and solutions for mitigating water scarcity.

Encourage creative thinking, considering both short-term and long-term strategies.

Use techniques like mind mapping, brainstorming sessions, and design workshops.

**Prototype:**

Develop prototypes or models of your proposed solutions.

These could range from physical devices to policy frameworks or community engagement strategies.

Test and refine these prototypes based on feedback and feasibility.

**Test:**

Implement small-scale pilot projects to test the viability and effectiveness of your solutions.

Collect data and feedback from users and stakeholders to refine the prototypes further.

**Implement:**

Scale up and deploy the most promising solutions based on successful testing**.**

Collaborate with relevant authorities, organizations, and communities to implement changes effectively.

**Evaluate:**

Continuously monitor the impact of implemented solutions on water scarcity.

Collect and analyze data to assess the effectiveness of your initiatives.

Adjust strategies as needed to optimize results.

**Iterate:**

Apply the lessons learned from evaluation to refine and improve your solutions.

Embrace a cyclical approach, making adjustments as the situation evolves or new challenges arise.

**Communicate:**

Share your findings, successes, and challenges with the wider community and stakeholders.

Foster awareness and engagement to build support for ongoing water scarcity solutions.

**CONCLUSION:**

In conclusion, smart water management represents a transformative approach to address the growing challenges of water resource management in this complex world. As we face the realities of water scarcity, climate change, and population growth, the adoption of smart water management practices becomes imperative. By embracing smart water management strategies, we can safeguard our water resources, and contribute to a sustainable future where water remains a vital source of life and prosperity.