**Project Design Phase-I**

**Proposed Solution Template**

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| Date | 19 September 2022 |
| Team ID | PNT2022TMID19061 |
| Project Name | Real time water quality monitoring and control system |
| Maximum Marks | 2 Marks |

**Proposed Solution Template:**

Project team shall fill the following information in proposed solution template.

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| **S.No.** | **Parameter** | **Description** |
|  | Problem Statement (Problem to be solved) | The contamination of water has become a common problem globally. |
|  | Idea / Solution description | The current water quality monitoring system is a manual system with a tedious process and is very time consuming. In order to increase the frequency, the testing equipment can be placed in the water resources and detection of pollution can be made remotely. We need to estimate the water parameters like pH, turbidity, temperature and TDS as the variations in the values of these parameters point towards the presence of pollutants. Here we have designed and developed a low cost system for real time monitoring of the water quality using IoT. |
|  | Novelty / Uniqueness | Real-time water quality monitoring uses technologically advanced monitoring sensors to collect in-stream water quality measurements and make data available for analysis and action in real time. Field teams deploy sensors strategically at designated points in a given surface water area to monitor waters within defined measurement parameters. Those sensors are monitored continuously to create a high-density dataset for fast analysis through a cloud-based data analytics platform. |
|  | Social Impact / Customer Satisfaction | The benefits of advancing to a real-time water quality monitoring system are many but include as the most important, access to instantaneous data, ease and convenience of use, and improved accuracy of water quality measurements.  Instant data and eliminated lag time in obtaining results allows for critical decision making before conditions in the field have changed, which is vital to preventing expensive repairs from a system breakdown. The systems allow easy access to all of the data in one place via the Internet, so users from any location—in the field, lab, or on site at a project or local emergency—can reach it. And the data itself is more accurate, not only because the human error involved in manual sampling is eliminated, but because monitoring results represent continuously analyzed data over multiple days and times instead of singular moments in time.  All of these benefits help water system managers identify threats to surface water earlier, make more fully informed decisions affecting the systems and the public they serve, and comply with ever-changing regulatory water quality monitoring requirements at federal, state and local levels. |
|  | Business Model (Revenue Model) | Frequent update of data , avoiding chemical and physical sampling in laboratory , reliable, easily accessible. |
|  | Scalability of the Solution | This model briefly explains about minimal cost system that monitors the quality of water utilizing Raspberry pi module and PH, Turbidity, Conductivity and temperature sensors. The yield will be transferred to the cloud and the information from the cloud in inspected and put into public space if not checking does not takes place in proper format. |