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TITLE PAGE

- **Problem Statement ID -** 1689
- **Problem Statement Title-** Use of Digital Technology to calculate Water Footprints for different Agricultural Products
- **Theme-** Clean & Green Technology
- **PS Category-** Software
- **Team ID-** SW369
- **Faculty Mentor-** Dr. Anitha K
- **Team Details-**A.L.Rahul(Team Leader), Gagandeep C, M V Prahlad Karthik, Trisha Datta, Makadia Yaksh, Diva Merja
- **Team Name -** RIPPLE EFFECT

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Scope and Understanding of Problem Statement

Use of Digital Technology to calculate Water Footprints for different Agricultural Products

- A platform to calculate the water footprint for agricultural products
- Input by name or scanning through Google Lens
- Should support local language
- Create awareness to reduce water footprint

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Solution and Uniqueness

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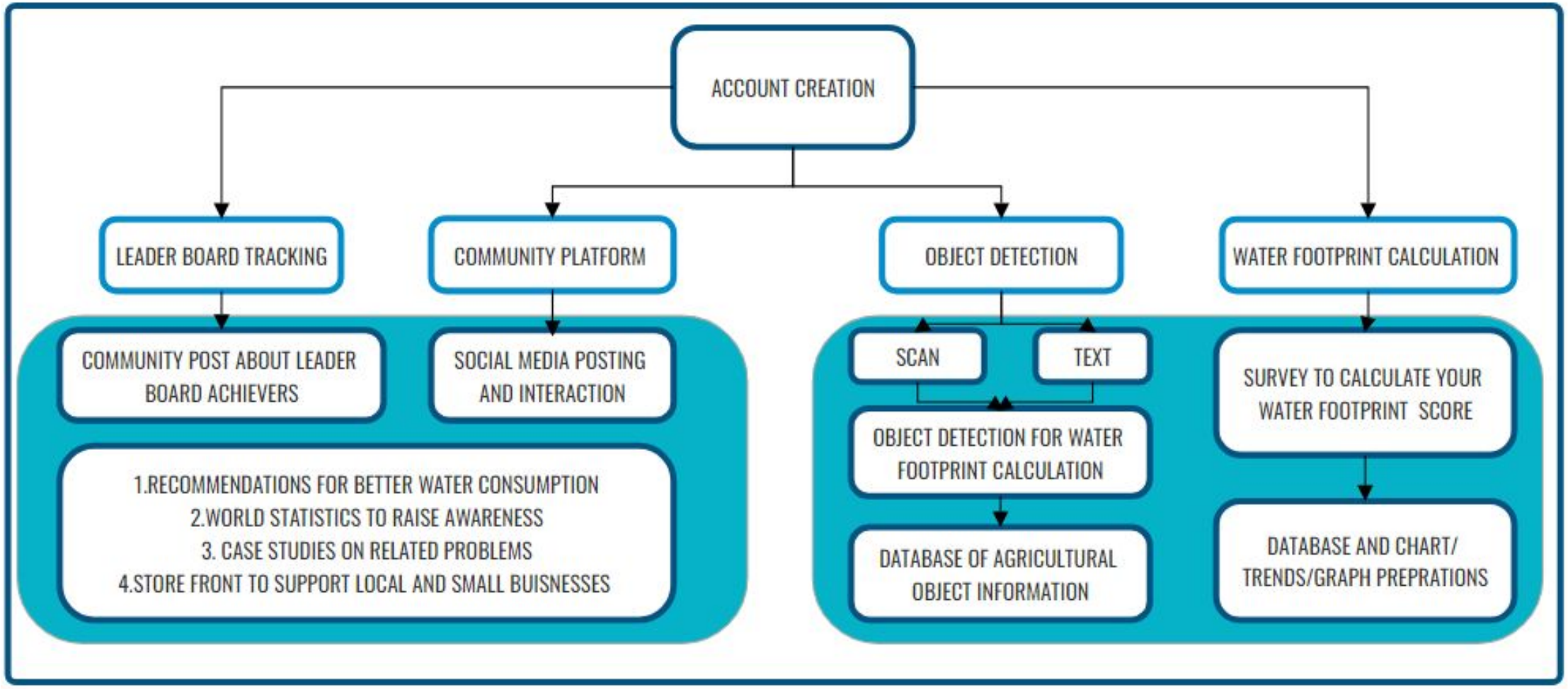

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TECHNICAL APPROACH

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FEASIBILITY

Technical Feasibility:

- **Robust Technology Stack**: Utilizes proven technologies (React.js, Bootstrap, MongoDB, Firebase, OpenCV, TensorFlow/PyTorch) for dynamic interfaces, real-time data handling, and advanced object detection.

Market Viability:

- **Growing Demand**: Addresses increasing awareness of environmental issues and water conservation, appealing to a broad audience including individuals, agricultural stakeholders, and educational institutions.

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RESEARCH AND REFERENCES

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Similar Github Project:

- **'Water Footprint for Web'-** https://github.com/evgenyneu/water-footprint-web
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Research Papers in the domain:

- Munaganuri, R. K., & Rao, Y. N. (2024). PAMICRM: **Improving Precision Agriculture through Multimodal Image Analysis for Crop Water Requirement Estimation Using Multidomain Remote Sensing Data Samples-** https://doi.org/10.1109/access.2024.3386552
- Alawfi, Y. Y. S., D, G. R., & Almaawali, M. Q. M. (2023). **Smart Farming Monitoring Through Artificial Intelligence for Enhancement of Harvest Quality and Productivity-** https://doi.org/10.1109/icssit55814.2023.10060943
- Fuentes-Penailillo, F., Ortega-Farias, S., Tian, F., Perez, R., Calderon, V., & Perez, D. (2022). **Towards the monitoring of water consumption of crops using digital agriculture techniques.** 2022 IEEE International Conference on Automation/XXV Congress of the Chilean Association of Automatic Control (ICA-ACCA)- https://doi.org/10.1109/ica-acca56767.2022.10006133
- Chang-Chun, X., Jing, H., Xiao-Hong, L., Hai-Lin, Z., & Fu, C. (2013). **Water and carbon footprint as streamlined indicators for supply chain management in agrifood sector: Case study on soybean products-** https://doi.org/10.1109/icmse.2013.6586354