**Jal Dhara: Sign of Purity**

**A Minor Project Synopsis Submitted to**

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**Rajiv Gandhi Proudyogiki Vishwavidyalaya, Bhopal**

**Towards Partial Fulfillment for the Award of**

**Bachelor of Technology**

**Computer Science and Information Technology**

**Under the Supervision of:**

**Prof. Nidhi Nigam**

**Submitted By**

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**Name 4(enroll. No)**



**Department of Computer Science and Information Technology**

**Acropolis Institute of Technology & Research, Indore**

**July-Dec 2021**

**Project Proposal:**Jal Dhara: sign of purity

**Project Category:**

Mobile application (Android/iOS/Windows)

**Problem Statement:**

* Provider: Addressing the challenge of ensuring the consistent delivery of potable and uncontaminated water to every residential and commercial location.
* Consumer: Ensuring prompt, high-purity, reliable, and customized water supply, meeting individualized specifications and satisfaction levels.

**Scope:**

This comprehensive application which is intended for local water suppliers/vendors, which helps them with facilitating record management, order management, trackable water distribution to various entities such as hospitals, government organisation, multinational companies, local shops and user-specific daily orders. With easy scheduling and hassle-free ordering online system for their user with a purity assurance.

**Specific Objectives:**

This project is specifically intended for local drinking water vendor who are selling water campers and refill bottle daily cant able to keep the record of each order as they send their staff to deliver and sometime money is kept by them only, users also doesn’t have a convenient way to schedule track and order the required resource there are some applications already present like jalam, go-Paani etc. but they are not free they are asking to pay subscription to use.

**Stake Holders of Project**

Local water vendors and their customer will be the stake holder of this project.

**Background**

We have taken this project after studying a ground problem that a local drinking water supplier face in day-to-day life of having issues like money kept by intermediate workers, resources sold doesn’t have any record they do not to answer or pickup every call to note the order and maintain a physical record as this is an era of digitalization. User(customer) are not able to schedule and track order this application will help to easily order the resource without calling the vendor again and again

**Review of Literature:**

The literature surrounding water delivery services and related technologies forms a foundation for the development of "Jal Dhara: Sign of Purity." Various studies have investigated the challenges within water supply chains, tracking systems, and scheduling platforms. The critical appraisal of these works provides insights into the gaps and opportunities that the proposed project aims to address. We studied different models like

* **Go Paani**: It has great interface but it asks for subscription to create an account which is not bearable to all local vendors
* **Pure Paani**: it is similar to go-Paani but it doesn’t allow tracking and scheduling facility
* **Jalam**: it sale packaged drinking water of brands (Bisleri, Kinley, Patanjali etc.)

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| --- | --- | --- | --- |
| **Title** | **Reference** | **Date and year of publication/release of project** | **Features** |
| Go-Paani | https://web.gopaani.com/about-us/ | 2021 | Manage Inventory, instant billing , Manage offline, manage customers etc. |
| Jalam | https://jalampackageddrinkingwater/aboutus/ | 2017 | It generally deals with selling packaged drinking water bottles of brands. |

**Jal Dhara - Sign of Purity**

**Introduction:**

Water is a fundamental resource for human existence, and efficient water delivery systems are crucial for ensuring accessibility and purity. In recent years, the integration of technology into water distribution and management has gained traction, offering innovative solutions to streamline processes and enhance user experience. This literature review explores existing research and applications related to water delivery services, tracking systems, and scheduling platforms to inform the development of "Jal Dhara: Sign of Purity," a Flutter app aimed at addressing the challenges faced by local water vendors and empowering users to manage their water orders seamlessly.

**Water Delivery Services:**

Research in the field of water delivery services reveals a growing need for efficient distribution systems, especially in urban areas. Existing solutions often rely on traditional methods, leading to inefficiencies and inconsistencies in service. Emerging technologies, such as mobile applications, have shown promise in improving the accessibility and reliability of water delivery. Studies emphasize the potential impact of technology-driven platforms in enhancing the overall effectiveness of water supply chains.

**Tracking Systems in Water Delivery:**

Efficient tracking systems are essential for monitoring the movement of water orders, ensuring timely delivery, and maintaining the quality of the supplied water. GPS-based tracking solutions have been explored in various contexts, demonstrating their effectiveness in real-time location monitoring. Studies highlights the significance of tracking systems in optimizing logistics and providing transparency in water delivery processes.

**Scheduling Platforms for Water Orders:**

Scheduling platforms play a crucial role in allowing users to plan and manage their water orders conveniently. Existing literature on scheduling systems for water services emphasizes the importance of user-friendly interfaces and automated scheduling options. Research for instance, delves into the design principles that contribute to the success of scheduling platforms, offering insights that can inform the development of the "Jal Dhara" app.

**Challenges Faced by Local Water Vendors:**

Local water vendors often face challenges related to manual order management, inefficient routing, and a lack of digital tools. Studies shed light on the obstacles encountered by small-scale water vendors and stress the need for tailored solutions to enhance their operational efficiency.

**Conclusion:**

The literature reviewed indicates a growing interest in leveraging technology to address challenges in water delivery services. "Jal Dhara: Sign of Purity" has the potential to contribute significantly to this evolving landscape by providing a comprehensive solution that empowers both water vendors and users. By incorporating insights from existing research, the app can streamline water delivery processes, enhance tracking capabilities, and offer a user-friendly scheduling platform, ultimately contributing to the efficient and transparent management of water resources.

**Whether the Implementation and deployment of the project idea (yes/no)**

a) Has Social benefits: Yes

b) Has Environmental Benefits: No

c) Considers health, safety, legal and cultural issues: Maybe as it is solving customer problem

d) Considers sustainable development (economic development that is conducted without depletion of natural resources) No

e) Applies ethical principles while selecting project (not to steal other’s project idea, code and documents) Yes

f) Commits to professional ethics and responsibilities and norms of the engineering practice. Yes

g) Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools Yes

h) Identify, formulate, review research literature, and analyze engineering problems reaching substantiated conclusions. Yes

**Technological know-how required for proposed project idea:**

1. **Mobile App Development:**
   * **Flutter Framework:** Utilize Flutter for cross-platform mobile app development, ensuring compatibility with both Android and iOS devices.
   * **Dart Programming Language:** As the primary language for Flutter, Dart is essential for developing the logic and functionality of the mobile application.
2. **Geolocation and Mapping:**
   * **Google Maps API:** Integrate Google Maps for precise location tracking and mapping functionalities, enabling real-time monitoring of water deliveries.
   * **Geocoding Services:** Implement geocoding services to convert addresses into geographic coordinates, facilitating accurate routing and navigation.
3. **Backend Development:**
   * **Firebase or MongoDB:** Use a backend database to store and manage user accounts, order details, and other relevant data.
   * **RESTful APIs:** Develop APIs for communication between the mobile app and the backend server, enabling data exchange.
4. **User Authentication:**
   * **Firebase Authentication:** Implement secure user authentication to ensure that only authorized users can place orders and access tracking features.
5. **Push Notifications:**
   * **Firebase Cloud Messaging (FCM):** Utilize FCM or a similar service to send push notifications to users regarding order status updates and other important information.
6. **Scheduling Algorithms:**
   * **Custom Scheduling Logic:** Develop algorithms for optimizing order scheduling, taking into account factors like delivery routes, time constraints, and user preferences.

**Hardware Requirements:**

1. **Smartphones:**
   * **For Users:** Ensure compatibility with a wide range of Android and iOS smartphones.
   * **For Vendors:** Provide smartphones or tablets equipped with the app for vendors to manage orders and deliveries.
2. **GPS Devices:**
   * **For Tracking:** Vendors' smartphones should have reliable GPS capabilities for accurate tracking of delivery routes.
   * **For Users:** Leverage the built-in GPS capabilities of users' smartphones for location-based services.
3. **Server Infrastructure:**
   * **Cloud Hosting (e.g., AWS, Google Cloud):** Host the backend server and database on a reliable cloud infrastructure for scalability and accessibility.
4. **Internet Connectivity:**
   * **Stable Internet Connection:** Ensure that both users and vendors have access to a stable internet connection for real-time data exchange.
5. **Barcode/QR Code Scanners (Optional):**
   * **For Order Verification:** If implementing a system for order verification, vendors may need devices with built-in or external barcode/QR code scanners.
6. **Printers (Optional):**
   * **For Receipts/Invoices:** If generating physical receipts or invoices is part of the system, vendors may need printers compatible with mobile devices.

**Key Personnel and their expertise:**

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| --- | --- |
| **Student Name and Enrollment No.** | **Technical Expertise** |
| *Parva Jain 0827CI211130* | *Paperwork designing research* |
| *Janhvi Kaushal 0827CI211086* | *Flutter frontend and backend* |
| *Harshita Kukreja 0827CI211077* | *Firebase backend and database* |
| *Prof. Nidhi Nigam* |  |

**Proposed Timetable**

*[Provide detailed information on the expected timetable for the project. Break the project into modules, and provide a schedule for each phase.]*

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| --- | --- | --- |
|  | **Description of Work** | **Expected no. of weeks to complete the module** |
| **Module One** | Researching, designing, identifying faults in other model, contacting companies to identify problems deeply and paperwork of project | 5-6 weeks |
| **Module Two** | Implementation of design, finalizing the design elements, features | 6-7 weeks |
| **Module Three** | Connecting the application to database, other APIs, authentication services and host the application test the application and publish it. | 10-15 weeks |

**Project Benefits:**

* By streamlining record management, enhancing water distribution efficiency, and providing user-friendly features such as order customization, tracking, and seamless billing and payment processing, this application has the potential to greatly improve the overall water supply ecosystem.
* Its intuitive interface ensures a smooth user experience, making it a valuable tool for enhancing the accessibility and reliability of water services for a diverse range of stakeholders, from institutions and government facilities to households and event organizers.

**References:**

**Flutter:** <https://docs.flutter.dev/>

**Firebase :** https://firebase.google.com/docs

**Go Paani:** https://web.gopaani.com/about-us/

**Jalam:** https://jalampackageddrinkingwater/aboutus/

**Google:** [www.google.com](http://www.google.com)

**Research:** https://www.researchgate.net/publication/356943840\_CONSUMERS'\_ATTITUDE\_TOWARDS\_PACKAGED\_DRINKING\_WATER\_-ASTUDY\_WITH\_REFERENCE\_TO\_VELLORE\_CITY