#  CANTEEN AUTOMATION THROUGH AJILE

#  DEVLOPMNT

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##  **ABSTRACT**

## A cutting-edge system called Canteen Automation is intended to revolution is

## how canteens and other food service businesses operate by enhancing productivity, accuracy, and user experience. This abstract offers a succinct summary of the main advantages and aspects of putting canteen automation into practice.

##  Traditional manual processes in canteens often suffer from various challenges such as long queues, errors in order processing, inventory mismanagement, and limited data analysis capabilities. Canteen Automation addresses these issues by leveraging cutting-edge technologies, including IoT (Internet of Things), mobile applications, and data analytics.

## Self-service ordering, cashless transactions, inventory management, and real-time analytics are just a few of the system's important features. Self-service kiosks or mobile applications allow users to conveniently place their orders, doing away with the requirement for order takers to manually take orders. The system enables cashless purchases through digital wallets or RFID (Radio Frequency Identification) cards, ensuring a quick and easy checkout process. The technology also easily connects with other payment options.

 **1) INTRODUCTION**

Whether at workplaces, hospitals, offices, or other public spaces, canteens and food service businesses are essential for feeding a significant number of people. However, the conventional manual procedures used to manage canteens frequently result in inefficiencies, lengthy wait times, mistakes, and a lack of data analytic capabilities. Canteen automation has become a game-changing tool to overcome these difficulties and improve overall operations.

Canteen automation uses technology to increase user experience, boost efficiency, and streamline processes. The Internet of Things (IoT), mobile applications, and data analytics are just a few of the cutting-edge technology that canteen automation incorporates to provide a holistic solution to change how canteens run.

 **I.WORKFLOW**

 **Ordering Process:**

* Mobile applications or self-service kiosks are both available for user order placement.
* The menu with available products and options is displayed by the system.
* The desired items, customizations, and quantity are chosen by the user.
* Before continuing, users examine and confirm their orders.

**Payment Method:**

* The system provides a number of payment methods, including cashless exchanges.
* Users can make payments using RFID cards, mobile wallets, and credit/debit cards.
* The money is processed safely by the system, and a digital receipt is produced.
* If necessary, cash transactions can also be facilitated.

 **Processing orders:**

* The system transmits the order information to the chef as soon as the payment is validated.
* The order is given to the kitchen workers electronically or via a display screen.
* They prepare the order in accordance with the given instructions.
* An order number or other special identification for tracking may be assigned by the system.

 **Order fulfilment**:

* When an order is prepared for collection, users receive alerts or notifications.
* They have access to real-time status updates or the predicted waiting time.
* Users walk over to the specified counter or collection place.
* The prepared items are delivered after staff members have checked the order's specifics.

 **II.PROPSED SYSTEM**

By utilising cutting-edge technology to improve productivity, accuracy, and user experience, the suggested system for canteen automation seeks to revolutionize. The operations of canteens and food service establishments. This system brings together a number of parts to produce a seamless and efficient canteen management solution.

 **III.ANALYSIS**

A thorough analysis is required to determine the viability and potential advantages of undertaking a canteen automation project. The analysis entails taking into account a number of variables, such as the project's scope, financial ramifications, potential dangers, and anticipated results.

Canteen automation has many benefits, including increased operational effectiveness, shorter wait times, higher order accuracy, and improved inventory management. Through self-service kiosks or mobile applications, automation speeds the ordering process, enabling users to conveniently place their orders and customise them in accordance with their preferences. With no need for real money, cashless transactions make payments faster and more secure.

**The Essential Element of Canteen Automation:**

* Users can independently place their orders using self-service kiosks or mobile applications.
* The checkout process can be made simpler by implementing cashless payment options like mobile wallets or RFID cards.
* For effective order processing, orders must be sent seamlessly from the self-service platform to the kitchen.
* Data should be gathered and analysed by the automation system to produce insights for sensible decision-making.
* Both customers and employees should be able to easily navigate the canteen automation system.

**Trends in Canteen Automation That Are Emerging:**

The future of food service facilities is being shaped by a number of trends that are emerging in canteen automation. These tendencies are a reflection of the industry's constant efforts to increase productivity, improve the customer experience, and adopt new technologies. Here are some noteworthy developments in automated canteens:

Convenience and contactless transactions are provided by integration with digital wallets and mobile payment systems.

* The necessity for physical contact is reduced by contactless payment methods like NFC (Near Field Communication) or QR code-based payments.
* Automation reduces human error and boosts productivity by handling repetitive activities like slicing, cutting, and food assembling.
* Automation in the canteen supports sustainability programmes and encourages environmentally beneficial behaviour.
* By offering real-time monitoring and notifications, this link improves food safety, quality control, and decreases waste.

 **IV.CONCLUSION**

In conclusion, canteen automation offers a game-changing option for restaurants, revolutionising operational management, customer satisfaction, and efficiency. Canteen automation streamlines procedures, lowers wait times, increases order accuracy, and optimises inventory control by utilising technology including self-service ordering, cashless transactions, inventory management, and real-time analytics. The customer experience, personalisation, and sustainability practices are further improved through the use of mobile ordering, contactless technology, AI-powered recommendations, and IoT. Customers will enjoy an eating experience that is more frictionless, effective, and delightful thanks to these developing trends, which also give canteen management data-driven information to help them make wise decisions. Organizations can develop a competitive edge, increase operational effectiveness, and foster a

 **V.FUTURE WORK**

The potential for canteen automation to advance and innovate in the future is enormous, offering exciting chances to transform the food service sector. Numerous areas are emerging as potential directions for future work in canteen automation as technology continues to advance.

There is room for increased machine learning (ML) and artificial intelligence (AI) integration. Canteen automation systems may learn more about client preferences, ordering habits, and menu optimisation by utilizing AI and ML capabilities. Highly personalised suggestions can be offered by sophisticated recommendation systems based on user preferences, dietary restrictions, and even current contextual data.

Additionally, a bright future is offered by the seamless fusion of canteen automation with other intelligent technology. For instance, canteen automation systems can interact with smart appliances, sensors, and gadgets using the Internet of Things (IoT) to build a completely networked ecosystem. Food safety can be ensured by real-time data from temperature sensors, and energy efficiency in the canteen can be maximized by smart energy.

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 **VII.REFRENCES**

1.Journal of Emerging Technologies and Innovative Research Canteen Food Ordering Android System, Abhishek Singh, Amit Tanwar, Aditya Sawant, Chaitanya Parulekar, Kunal Yadav, IT Department, MUMBAI University, International Journal on Recent and Innovation Trends in Computing and Communication, ISSN: 2321-8169

2.AshutoshBhargave, Niranjan Jadhav, Apurva Joshi, Prachi Oke Prof.Mr. S.R. Lathe, "Digital Ordering System for Restaurant Using Android", International Journal of Scientific and Research Publications Issue 4, April 2013.

3.The ordering system -A.Nayak and P.Ruthumbra Journal of Engineering Science. G Vinod, S Ramesh

4.L Order Automation - M Jakhad, Rai International Journal of Computer

5.Op, Naiyyar, Kher.A Proposed System for Android-based Ordering system. IJSIET publications, volume 2 .

6.Rfid, K L Nada, Vikram Mane -IEEE paper, volume 10.