

# University Canteen Supervision and Management System Based on Wechat Applet

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**Abstract:** *With the gradual expansion of the scale of colleges and universities, the contradiction between management mode and management efficiency has become increasingly prominent. In terms of canteen management, manual management mode is fundamentally unable to adapt to large-scale management in terms of management quality and management efficiency. With the development and progress of information technology, digital management mode shows its reliability and superiority in terms of management efficiency and management quality. More importantly, the information construction of university canteen management, with information management system to support canteen management, has a great saving in human and material resources, at the same time, the real-time record of relevant data and historical statistical analysis, can effectively improve the quality of logistics management decision-making. In this paper, the construction of university canteen information supervision and management, the main illegal information collection. Wechat applet as a mobile terminal violation information collection system is more efficient and convenient, and also solves the problem of mobile terminal cross system. It processes and summarizes the data information on the web end, and provides data support for the management decision-making of the canteen.*

**Keywords:** *Canteen supervision and management, Wechat applet, Information management*

## 1. Introduction

### 1.1. Background of Topic Selection

Information technology is one of the fastest innovative and most versatile technologies in the world. Under the background of globalization, the development of information management is an inevitable trend. Whoever falls behind in the information trend will be eliminated by the times. However, in the process of campus informatization, influenced by the biased and one-sided understanding of logistics status and informatization, logistics informatization in Colleges and universities started late.

With the gradual expansion of the scale of colleges and universities, the contradiction between management mode and management efficiency has become increasingly prominent, and the amount of information needed for the management of canteen catering has increased sharply. The traditional management mode is not only inefficient and costly, but also complicated and error prone. In terms of canteen management, manual management can't adapt to large-scale management in terms of management quality and management efficiency. With the development and progress of information technology, digital management shows its reliability and superiority in terms of management efficiency and management quality. More importantly, it is necessary to carry out information construction for canteen management in Colleges and universities, With the information management system to support the supervision and management of the canteen, there are great savings in human and material resources. At the same time, the real-time recording and historical statistical analysis of business data can effectively improve the quality of management decision-making.

In this paper, through the communication with the relevant staff, we found that most of the school canteens are managed by hand. In terms of supervision and management, manual records and manual analysis are used for management. There is a lack of effective information collection and timely tracking management. It seriously affects the efficiency of the canteen supervision and management, which is a problem to be solved. In addition, in the development of the traditional management information system, most of them use the server (B / s) architecture for development, which is not conducive to maintenance and later update. This system uses the way of front-end and back-end separation for development, which simulates the most popular company's development mode at present.

In this paper, after careful investigation and analysis of the current situation of school canteen supervision and management, according to the needs of canteen management personnel and the relationship between various functions, requirements modeling, system architecture design, detailed design and technical implementation are carried out. In order to improve the construction of digital campus, improve the level of modern management tools.

### ***1.2. Significance of Topic Selection***

The significance of school canteen management research is mainly reflected in the following aspects:

(1) The canteen management is improved from the original manual mobile phone to the use of information software to collect, which is more efficient and convenient. At present, the canteen management department still uses pen and book to record and summarize the problems found in the canteen, which is time-consuming and labor-consuming. After the completion of this question, you can collect the questions through the wechat applet on your mobile phone, and you can directly view the relevant information on the website.

(2) The system can store the collected data, which is different from the previous paper data into Excel for analysis. The system can directly classify, query and export the collected data, which is more convenient to provide decision support for managers.

### ***1.3. System Features***

The system has the following characteristics:

(1) The mobile terminal adopts the solution of wechat small program, which solves the problem of canteen managers using different mobile platforms. Wechat small program relies on wechat platform to use efficiently and conveniently.

(2) Chart analysis, this system uses the chart form, can intuitively analyze the canteen related problems, for the canteen management personnel to provide the corresponding decision report.

(3) The interface design is friendly, the colorui framework is used in the wechat end, and the react framework is used in the background website, so the interface is efficient and stable.

## **2. Systems Analysis**

### ***2.1. Preliminary Investigation***

In the early stage of the survey, we found that there are many problems in the management of the school canteen, such as the lack of management staff, the great workload, the small number of staff to manage the huge canteen, the huge workload, and the problems reflected in the three meal time in the canteen management are more concentrated, especially in the three meal time, if the school teachers and students still use the traditional method during the centralized meal time, It will be cumbersome and inefficient to record the problems on paper. And the traditional way uses Excel to count and store data. Not all the data can be stored, not all the data for statistical analysis, and stored easily because of computer hard disk damage and data loss.

In order to solve the above problems, we conducted a demand survey with the canteen management staff, determined the demand of collecting problems, statistical analysis of problems, stored the information in the service database, established a backup mechanism, and introduced a notification module into the system to help the canteen head better understand the relevant regulations, Using information technology to improve management efficiency. And according to the actual needs of the system for continuous optimization adjustment.

### ***2.2. Feasibility Analysis***

#### ***2.2.1. Economic feasibility***

This development uses wechat small program side, only need to configure the relevant development environment can be developed; Meet the requirements of low cost software development. With only one mobile phone, the information collection can be realized, and the paperless office of canteen

management can be realized, which greatly saves the cost. The cost of overall project implementation, system operation and system maintenance is low, which is completely acceptable to the school.

### 2.2.2. Technical feasibility

Wechat applet end of this system adopts wxml (wechat mark language) wxss (wechat style sheet) JS (Java, the main body of the small program) of wechat applet. Wxml is similar to the XML description file in Android development, which is easy to use in the school Android process. Wxss is almost the same as CSS, JS of small program is no different from JS and can be used directly. The back-end uses node.js as the server; uses react as the back-end website framework, which are mature technologies. The relevant documents are detailed and complete, and the icons use ecarts and other related JS libraries. There is no technical difficulty. This system does not involve complex algorithms.

### 2.2.3. Management feasibility

Users only need to log in to the web page to access the relevant information. The wechat applet used for information collection on the mobile terminal is simple and convenient to use, which can improve the efficiency of management to a certain extent. Compared with the traditional manual operation, managers are more inclined to use mobile phones as portable tools for management.

To sum up, the development of this system is feasible.

## 2.3. Detailed investigation

In the development and design of the system, we sort out and communicate the specific process of canteen management, and analyze the business process and data flow combined with the results of each communication.

### 2.3.1. Business process analysis

Business process analysis is the first step of specific analysis. In order to sort out and analyze the detailed survey results, and then enable users to confirm them, some simple methods must be adopted to express them clearly, so as to make them become the communication language between the requirement proposer and the developer. Therefore, we choose to draw a business flow chart to describe the requirements.

As shown in the figure, firstly, before using the system, the system administrator needs to import the basic violation information, canteen principal relationship and supervisor information; the canteen supervisor uploads the violation information text and pictures of the canteen in the daily inspection; the canteen administrator can release these pictures after passing the review. If the canteen administrator finds that the information is wrong after seeing the violation information, he can appeal to the administrator to cancel the violation information; the person in charge of the canteen handles the violation information by uploading rectification photos.

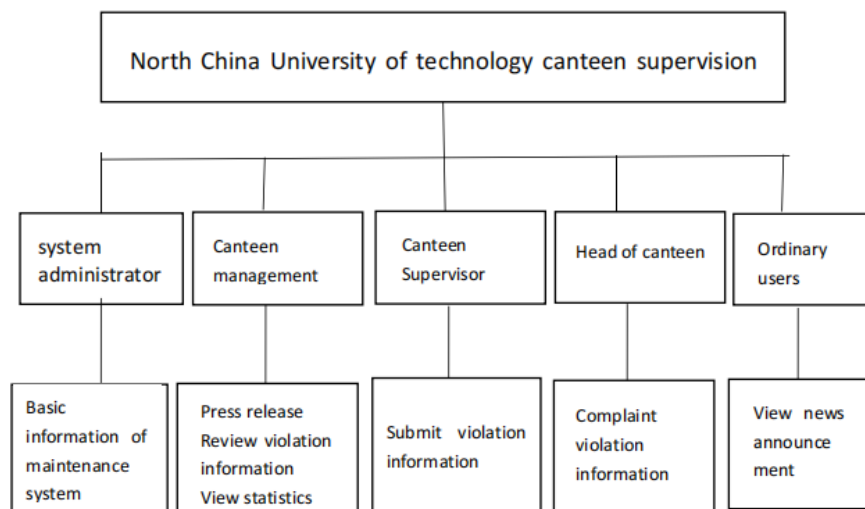


Fig 1: Functional module diagram of canteen supervision and management system of North China University of science and technology

### 2.3.2. Data Flow Analysis

Data flow chart is the main tool to describe the model of system logic, which reflects the logical function of data processing in the system. When drawing the flow chart, we should follow the following principles: (1) define the boundary of the system: the input of system data, the basic information from the administrator, and the violation information uploaded by the canteen supervisor are the source of the system data, and also the source of the system data. Ordinary users only view the relevant data in the system, and regard ordinary users as the external items of the system.

(2) The data flow does not care about the time of data change, the technical process of data processing, and the processing method. It only reflects the data flow direction, data processing, and data storage in the logical sense. It only discusses problems from the logical function of the system, which is convenient for communication with the demander.

(3) Reasonable layout: all kinds of graphics of data flow diagram are reasonably arranged, evenly distributed and neat, and the data flows should be crossed as much as possible to make them clear and easy to read. In order to avoid frequent cross and large span of data flows.

(4) After fully understanding the needs of the users of the system, according to the characteristics of the system, and the characteristics of related issues, we determine the relevant process before the development, and design the database structure to adapt to the business process.

(5) According to the top-down design method of data flow diagram, after defining the boundary and scope of the system and determining the main functions of the system, the top-level data flow diagram is drawn, and the top-level diagram is further decomposed into the first level data flow diagram (0-level data flow diagram). According to each function module decomposed, the data flow diagram is further decomposed into the bottom-level data flow diagram.

### 3. System Function Structure Design

The users of the system are divided into wechat app users and website background users. Among them, wechat app users are divided into ordinary users. Because the app is open, it will definitely be used by a large number of ordinary users. Ordinary users do not have the right to submit information, and can only view relevant news announcements and other information on the app, only the canteen supervisor can submit the corresponding violation information in the small program. The back-end users of the website are divided into system administrators and canteen administrators. The system administrators mainly maintain the basic information, and input the violation information, violation score information, canteen supervisor information, canteen principal relationship and other basic information. The canteen administrator is the superior of the canteen supervisor. The canteen administrator can issue news such as information notice in the system, and also need to audit and release the information uploaded by the canteen supervisor in the system. When the canteen supervisor finds the violation and uploads the violation information into the system, the canteen supervisor will audit and release it, the person in charge of the canteen can view their own violation information on the wechat applet, and appeal to the canteen administrator when they find that the violation does not meet the requirements. You can also submit your own information after rectification.

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