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Automated information system for accounting of goods in a supermarket

M.A. Masiuk[1,2], *I.I.* Kleshko[1*], *I.A.* Panfilov[1,2], *K.Y.* Lobkow[1,2], and *E.I.* Sivtsova[2]

[1]Bauman Moscow State Technical University, Artificial Intelligence Technology Scientific and Education Center, Moscow, Russia
[2]Reshetnev Siberian State University of Science and Technology, Krasnoyarsk, Russia

Abstracts This text describes the development and implementation of an automated information system for the accounting of goods in the SSP supermarket. The system allows you to monitor the availability of goods in stock and on the shelves, automatically compile reports on the work done and simplifies the process of transferring documents between employees. Thanks to the use of the system, the company reduced its costs and was able to increase profits by expanding the range of products without expanding the staff.

1 Introduction

The SSP supermarket chain specializes in selling a full range of food and beverages, as well as household items, pet products, automotive products, cosmetics, tableware, medicines (sold without a prescription), household appliances and so on. Buyers choose the goods they need, and then pay for them in specially equipped places.

Products are delivered to the supermarket by ordering from special persons (suppliers) this is the product itself. Each supplier delivers its own specific list of products. In order to find out which products should be ordered, it is necessary to analyze the total number of goods in stock and on the counter, as well as the demand of buyers for a certain product for different periods of time [1-40].

In order to perform timely replenishment of product stocks, the managers of the trading floor and warehouse must make a report every day on the change in the quantity of goods on the counter and in the warehouse, respectively. After that, these documents are transferred to the order manager who is looking for a suitable supplier to order the missing products.

When the demand for any product is significantly lower than expected, and there is a chance that the products will be spoiled, the pricing manager analyzes the dynamics of its price, and draws up a document in which it indicates its new value, and passes it to the sales floor and advertising managers. The first one updates the price of this product on the counter, and the second one makes an advertising offer to increase the interest of buyers in this product [11-25].

* Corresponding author: ilya-kleshko@mail.ru

After receiving deliveries of new products, the purchasing manager takes a report with the received goods to the accounting department, the accounting department calculates the tax on new products, and sends it to the tax service [26-46].

2 Relevance

The relevance for the development of the system is primarily associated with a large number of goods that need to be constantly monitored. The supermarket is developing, and the number of goods on its shelves is rapidly increasing, and now it is almost impossible to take into account all the goods manually. Also, a serious problem in the company is the compilation and transfer of documents between employees. For example, when accepting product deliveries, the purchasing manager must independently fill out a report on the received products and take this document to the accounting department. With a large number of products, these actions take a lot of time, and therefore, it will be necessary to expand the staff, which is unprofitable for business.

The purpose of the development of an automated information system is to reduce the costs of the enterprise by automating the process of monitoring the amount of raw materials (in the warehouse and counter), as well as by creating a document management system that will reduce the time required to compile reports and transfer them between employees.

This system will be designed to keep records of goods in the warehouse and counter. And also, to compile reports on work and transfer it between employees of the company. The above actions will help to increase the efficiency of the current staff, even with an increase in the volume of products. Efficiency improvement will be achieved by reducing the processing time of routine tasks by employees, due to their automation. Routine tasks mean — counting products in the warehouse and on the counter, calculating the elasticity of demand for a specific product (or types of goods) and its analysis, obtaining price dynamics and its analysis, obtaining expenses and income of the company, as well as handwritten creation of reports on the work performed, and the transfer of this reporting between employees of the enterprise.

3 Hardware and content structure of the system

To deploy an information system, it is necessary to install

the necessary equipment, namely:

a router is necessary to create a common enterprise network, which will include various devices described below. The router must have access to the Internet:

- two computers with constant access to power. One of them will be used to deploy the DBMS server, and the second for the operation of the main server. Both computers must be connected to the router;
- the printer is needed to print out official documents that will be sent from the server. The printer must also be connected to the router.

Below, Figure 1 shows the hardware structure of the system.

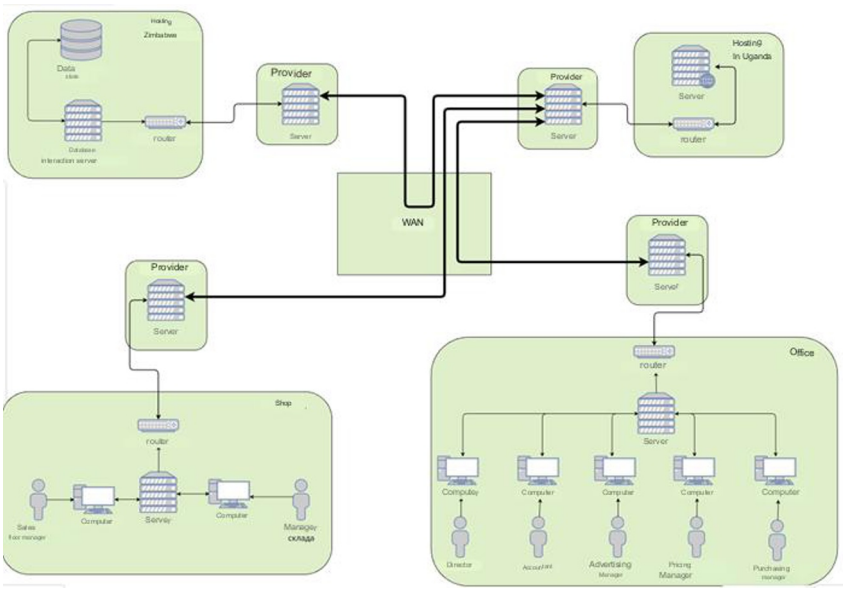

Fig. 1 – Hardware structure of the system

Below, Figure 2 shows the content structure of the system.

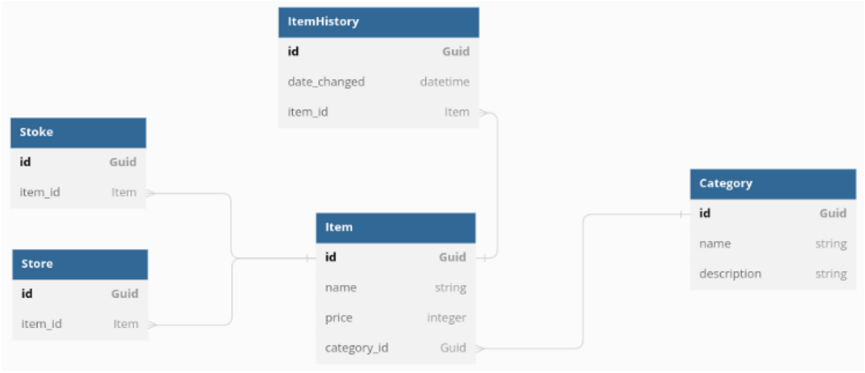

Fig. 2 – The content structure of the system

An example of the interface is shown in Figures 3-6.

Fig. 3 – Example of the interface

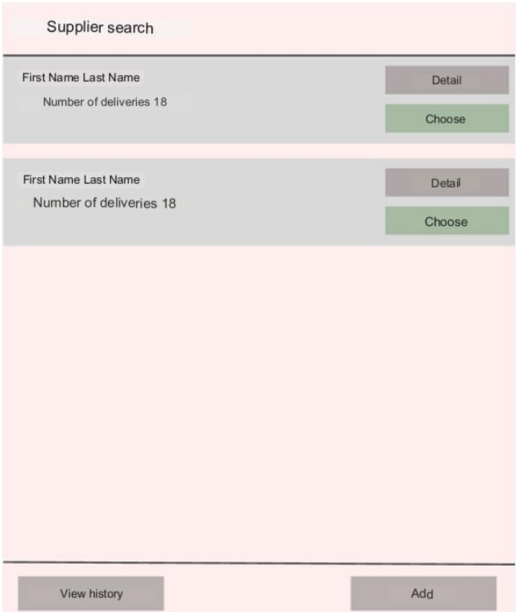

Fig. 4 – Example of the interface

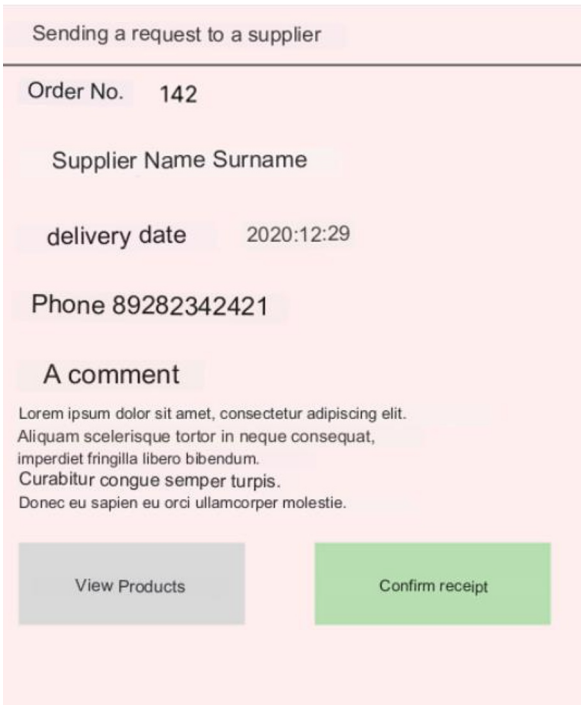

Fig. 5 – Example of the interface

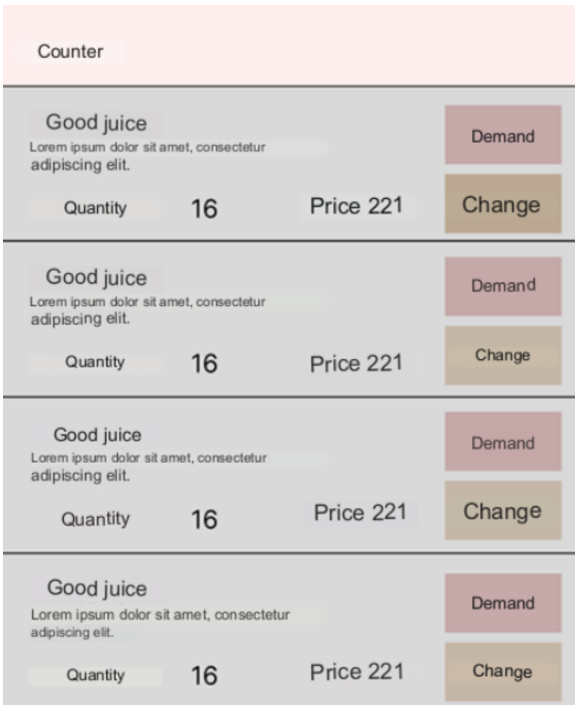

Fig. 6 – Example of the interface

4 Conclusion

An automated information system was developed for the accounting of goods in warehouses and on the shelves of the store, as well as for the automatic compilation of reports on the work done.

Thanks to the developed system, the company has significantly reduced its costs, and even has the opportunity to further increase its profits by expanding the range of products offered, without expanding the staff. Since the current staff, due to the automated information system, will be able to process a larger volume of products.

This is achieved by automating the process of monitoring the amount of raw materials (in the warehouse and counter), as well as by creating a document management system that reduces the time required to compile reports and transfer them between employees.

This effect is due to the release of employees from performing time-consuming and routine tasks that now fall on the shoulders of an automated information system. Previously, the warehouse manager, in order to compile a list of purchases, had to manually check the availability and quantity of goods in the warehouse, draw up a reporting document that indicated which products and in what quantity needed to be purchased, and after that, it was necessary to transfer this document to other employees. Obviously, a huge amount of time and effort was spent on this whole chain of actions, at that moment, the business was idle and did not make a profit, now, thanks to an automated information system, this whole chain of actions is performed completely automatically, and the warehouse manager only controls, and in some cases, corrects the operation of the system. Due to this, the productivity of the warehouse manager increases, which means that he is able to process a larger volume of products.

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