

CONFIGURATION DEVELOPMENT ON THE PLATFORM 1C FOR ENTERPRISE AUTOMATION

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Анотація. У статті представлені результати розробки конфігурації на платформі 1С для товариства з обмеженою відповідальністю. Об'єктом дослідження є процес розробки конфігурації на платформі 1С. Предметом дослідження є технологічна платформа «1С: Підприємство». В задачу входить проведення аналізу технологічної платформи «1С: Підприємство», порівняння найбільш популярних ERP-систем, розробка конфігуратора на платформі 1С. В роботі використані такі методи дослідження, як методи структурного програмування та методи доказового програмування для систематичного аналізу правильності алгоритмів і розробки програм без алгоритмічних помилок.

Ключові слова: автоматизація бізнесу, технологічна платформа, ERP-системи.

Аннотация. В статье представлены результаты разработки конфигурации на платформе 1С для общества с ограниченной ответственностью. Объектом исследования является процесс разработки конфигурации на платформе 1С. Предметом исследования является технологическая платформа «1С: Предприятие». В задачу входит проведение анализа технологической платформы «1С: Предприятие», сравнение наиболее популярных ERP-систем, разработка конфигуратора на платформе 1С. В работе использованы такие методы исследования, как методы структурного программирования и методы логического программирования для систематического анализа правильности алгоритмов и разработки программ без алгоритмических ошибок.

Ключевые слова: автоматизация бизнеса, технологическая платформа, ERP-системы.

Abstract. In this paper, the results of configuration development on the platform 1C for limited liability companies were presented. The object of study is the development process configuration platform 1C. The purpose of the study is the technological platform "1C: Enterprise". The tasks included analyzing the technological platform "1C: Enterprise", comparing the most popular ERP-systems, configurator development on the platform 1C. Such research methods as structured programming techniques and methods of evidence-based programming for the systematic analysis of the correctness of algorithms and algorithmic development programs without errors were used in the paper.

Keywords: automation business, technological platform, ERP-systems.

1. Accession

Enterprise resource planning (ERP) is business management software – typically a suite of integrated applications – that a company can use to collect, store, manage and interpret data from many business activities [1].

An ERP system covers the following common functional areas. In many ERP systems they are called and grouped together as ERP modules:

- financial accounting;
- management accounting;
- human resources;
- manufacturing;
- order Processing;
- supply chain management;
- project management;
- customer relationship management;
- data services.

2. The problem statement

Problem-Configuration is practical solution developed on the technological platform “1C: Enterprise”. The main function of the 1C configuration is to help developers quickly develop viable solutions for business automation. With the help of this environment may hold not only the completion of a solution but also to develop their owner, already completed configuration.

3. Publications analysis

The issues of development and implementation of new computer technologies in the process of automation business engaged in such researchers as Goncharov D.I. [2], Hrustaleva E.Y. [2], Azheronok V.A [3], Ostroverkh A.V. [3], Radchenko M.G. [3] Makarova L.M. [4] etc.

In Ukraine function enterprises of different ownership forms in accordance with article 63 of the Commercial Code. For each type of enterprise we must deployment (roll-out) technology “1C: Enterprise” platform and then should use universal default configuration or develop new ones. Enumerated before facts confirms the relevance of design configuration on the 1C platform.

The wording purposes of Article. The article aims is to analyze technological “1C: Enterprise” platform, comparing the most popular ERP-systems and to offer configuration of 1C platform.

4. Main Material Statement

Information technology is one of the most important components of information resources usage. Today information technologies play an important role in everyone's life. They help to develop a variety of human activities. Even the simplest operations are at modern enterprises are recommended to perform using computerized systems [4].

The main objective of this work was development of platform configuration 1C for Ltd. “Industrial automation system” that works in the IT market for more than five years. The company performs design and installation of SCS (Structured Cabling System), communications systems, CCTV and Access.

Ltd. “Industrial automation systems” offers following design and installation works for institutions, such as:

- design and installation of communication;
- design of CCTV and security systems.

The configuration was developed on the 1C platform. The system software “1C: Enterprise 8” is a universal automation system of economic and organizational activities of the company. Because such kind of activities can be very diverse, 1C system: Enterprise can be “adapted” to the characteristics of a particular field of activity in which it is applied. For indicate this ability, the term “configuration”, in other words, is a possibility to configure the system to specific features and enterprise-class tasks.

This is due to the fact that the 1C: Enterprise - is not just a program that exists as a set of immutable files, but it is also a set of different software tools, which are consumed by developers and users. Logically, the entire system can be divided into two parts, which closely interact with each other – configuration and platform, which manages work of configuration.

The flexibility of the platform allows using 1C “Enterprise 8” in various fields.

Typical application solutions “1C” Company designed to automate routine tasks of accounting and business management. In developing of the model of applications they considered as the advanced international management techniques (MRP II, CRM, SCM, ERP, ERP II, etc.), and the real needs of businesses that do not fit into a standard set of functionality of these techniques and the experience of successful automation gained by “1C” and partner community.

It is important to understand each ERP-system peculiarity, its strength and weaknesses. Moreover, it is necessary to take into account a business area to select appropriate software.

One of the world's leading ERP-systems is so-called SAP system. A German company SAP AG, that is a developer of the ERP-system SAP, sells expensive and complex solutions for large enterprises, so the system is not suitable for small and medium enterprises. More recently, the company SAP AG has released a solution for SME SAP Business One, however, the price and complexity of implementation remains at the same level. ERP system 1C: Enterprise in this case is universal and suitable for any type of business. It can be easily implemented at large enterprises and also easily copes with automation at a small company [5].

In contrast to SAP, 1C: Enterprise ensures the fastest automation of business processes, or rather, the period of software implementation takes from 3 to 6 months. In addition, in comparison with the ERP-system SAP, 1C: Enterprise allows quick and efficient performing of any changes in the already implemented system.

Microsoft Dynamics AX (Axapta) and Microsoft Dynamics NAV (Navision) are also well-known world-class systems. Improvements of implemented ERP-systems can be done by well-qualified specialists in Navision and Axapta systems, because even minor incorrect architectural solution may lead to critical misuse of the system. But the number of such specialists is quite insufficient.

1C representing companies never have a lack of specialists, so this problem is eliminated.

It is also necessary to mention Galaxy software Development Company that is one of the leaders on Russian market. This company has a wide experience of software launching at small and medium enterprises.

However, it has drawbacks too. Galaxy ERP-system is based on specific programming language, that significantly inferior to modern language. Sophisticated additional adjustments that are unavoidable during the software using also significantly inhibit business development.

Despite the lag from leading IT systems, the 1C: Enterprise software has significant advantages over other competitors due to its flexibility in responding to customer inquiries and forehanded implementation of advances technologies to its products [6].

So, branch competence and wealth of experience in projects implementation are the determining factors to choose 1C: Enterprise software.

ERP-systems continue to be popular in the business world and getting more deserving for great authority. Any of ERP-system is designed as a virtual model of your company. In a comparative analysis of 1C and Navision revealed the following deficiencies editor Navision system:

- no color markup syntax;
- tab button does not work;
- no code completion – when the programmer enters the first letters of ID and clicks code completion, 1C editor shows a list of available in this context identifiers that begin with those letters;
- no automatic text formatting of syntax in language (1C can able to formatted allocated block of code on the syntax of the language);
- (there is) no opportunity to comment on buttons / remove comments for code block. Basically, Navision is forgivable, because it can be possible that we have multiple lines of comments;
- context References by function - in 1C we can identify the function name and on it get immediately References, Navision make a copy of function name to the clipboard and only there watch it;
- don't have quick Jump to the definition place of the function on which cursor is;
- no list of module functions - 1C has a window, where you can select a function to quickly access to it;
- don't have templates-short fragments of code that you type and which automatically replaced by another code. In 1C templates can be customized to fit your personal habits with the help of your programmer;

- issued only one syntax error but in 1C issued all errors of this type;
- Navision editor treats the whole text as a set of records, as database table, hence the inability to work with the Tab and many other oddities of this editor.

Configurator mode is used by developers and administrators databases. This mode provides the tools you need to modify existing or create new configuration (fig. 1).

Configuration is a description. It reports about data structure that is used in working mode of 1C: Enterprise.

Moreover, configuration describes algorithms of the data processing, provides information about data display on screen, print etc. 1C: Enterprise platform creates a database that has required structure and provides the ability to work with it according to the description

Configuration description consists of several logical units called configuration objects. It helps to adjust 1C: Enterprise system to required applications in quick and easy way.

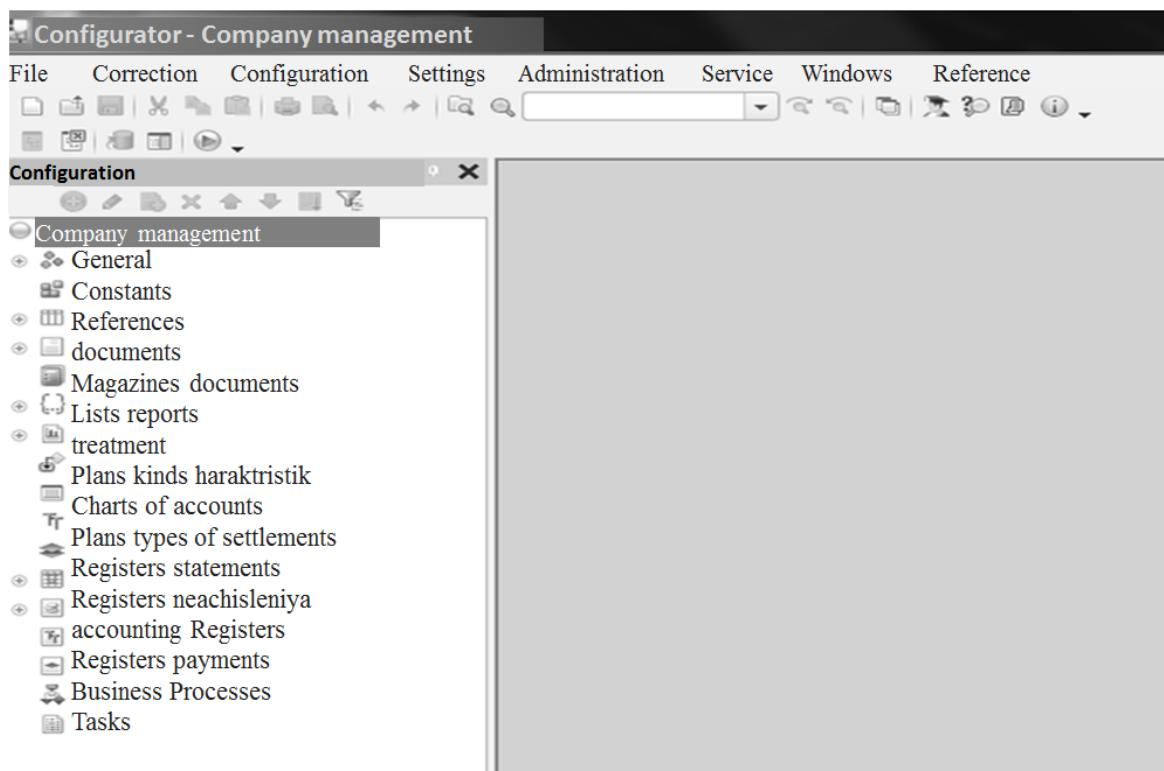


Fig. 1. The interface 1C configurator

Configuration objects are component parts of configuration. Usually there is a set of component parts. They can be of various types: long, short, square, rectangular, etc. User can create as many parts of each type as it is needed (for example, 3 long and 5 short).

Configuration development begins from subsystems structure design. First of all, developer should accurately consider the subsystems structure and then consciously implement new configuration objects.

Simple application solutions don't required subsystems development.

Subsystems help to mark out configuration functional parts that the application solution logically consists of.

These objects are located on General objects branch and allows users to build a tree structure, that consists of subsystems and underlying subsystems (fig. 2).

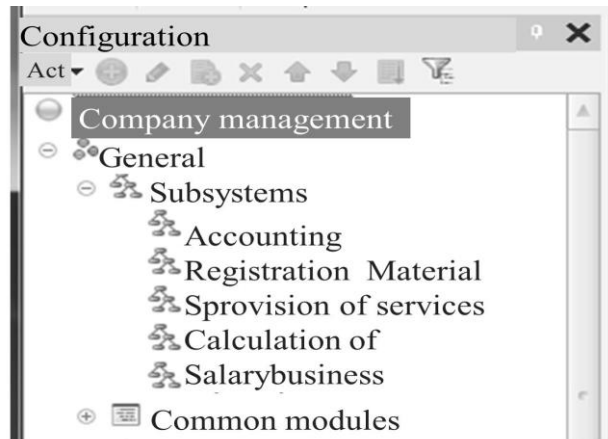


Fig. 2. Subsystems Configuration Structure

Stages of program development were defined for design configurator (fig. 3).

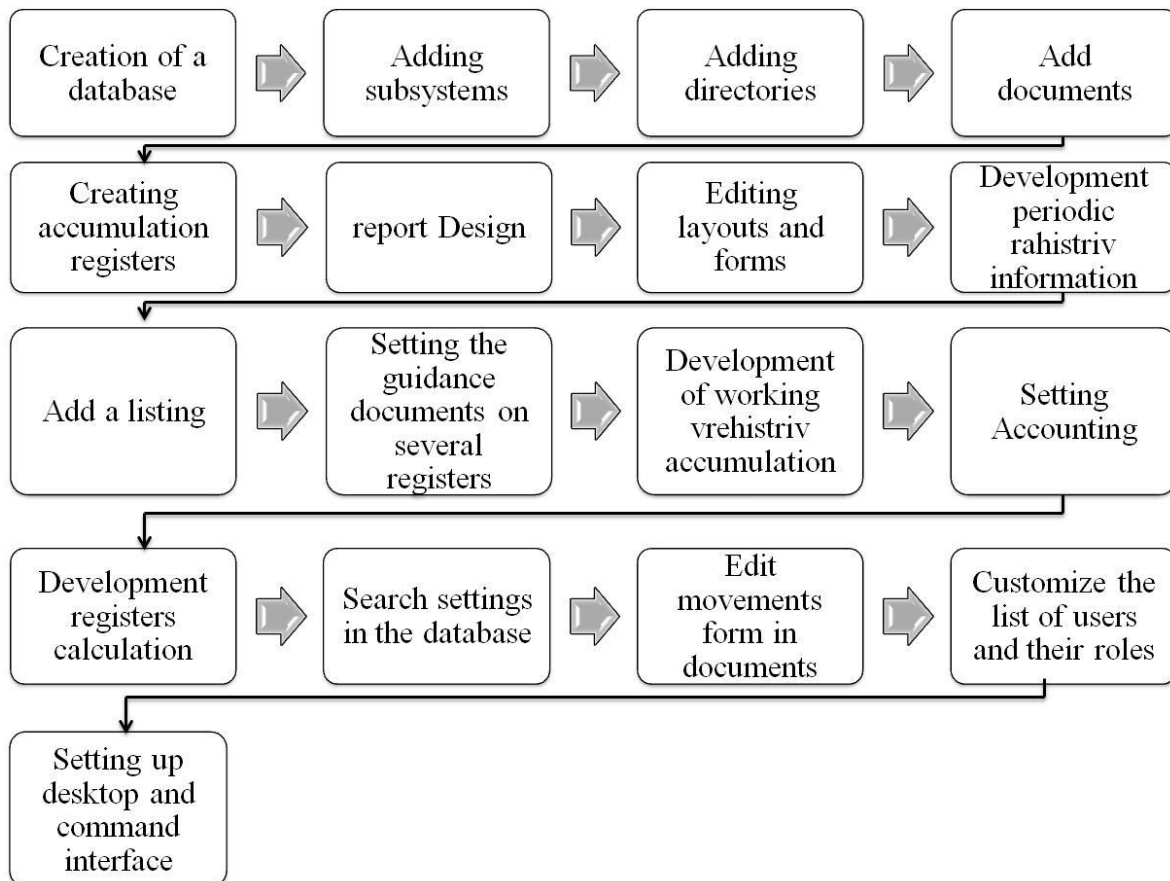


Fig. 3. Stages of delivering the configurator on the 1C platform

Based on the algorithm by code 1C platform was designed configurator for automation work in company. Sample code of configurator is shown in fig. 4.

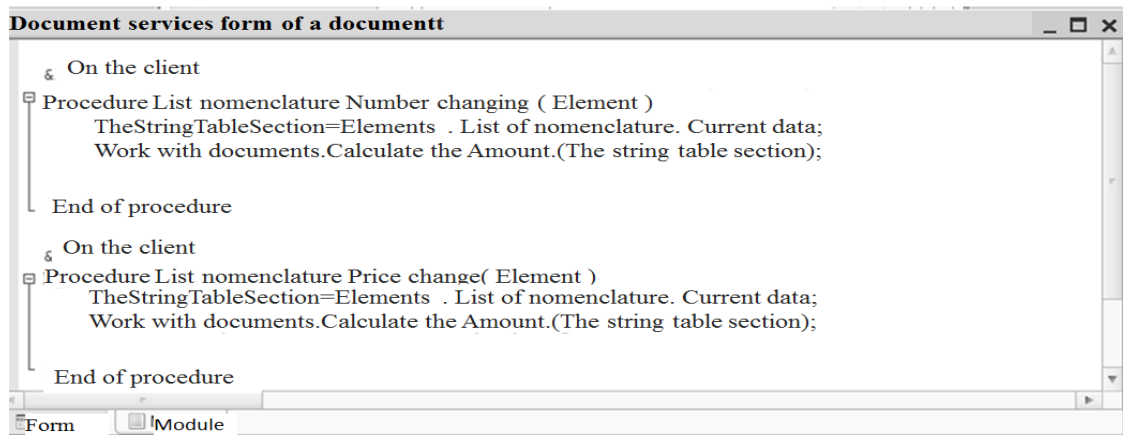


Fig. 4. Calculation field of Amount when selecting fields of Nomenclature and Price

5. Conclusions

1C most widespread in the CIS countries. 1C organized franchise network through which extends boxed of solutions and services for implementing and configuring products. Network franchise widespread and its representatives can be found everywhere in the CIS.

The comparative analysis of ERP-systems showed that ERP-system 1C: Enterprise is a versatile software product that saves time and costs and thus be a reliable assistant in the development of your business.

For Ltd. “Industrial automation systems” the most optimal choice between ERP-systems is the ERP-system 1C: Enterprise.

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Стаття надійшла до редакції 04.06.2015