

# THE USE OF A PROGRAM IN THE DELPHI PROGRAMMING LANGUAGE WHEN WORKING WITH INTERVALS WITH OBJECTS IN MICROSOFT WORD DOCUMENTS

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## Abstract

This article discusses the importance of working with object-partitioned spaces in Microsoft Word documents. The problem of mixing rows and creating variants is considered. The advantages and disadvantages of converting the object-participating lines to the variant form using a program compiled in the Delphi programming environment are considered.

**Keywords:** Microsoft Word, Mixing Rows Delphi, Ranges, Rows, Objects Joined. Multimedia educational resources, General secondary schools.

## Introduction

Microsoft Word, смешивание строк Delphi, диапазоны, строки, объединенные объекты. Мультимедийные образовательные ресурсы, Общие средние школы.

Today, multimedia educational resources serve as a tool to teach students to think logically and deepen the essence of the matter. Written control questions in general secondary schools are one of the important forms of monitoring students' knowledge. The role of written control questions is incomparable in checking how science is mastered by students. Because this method, despite being quite outdated, has several advantages. Pupils answer the given questions in writing based on the topics and knowledge learned through independent thinking. It is usually conducted offline and checked and evaluated by a specialist. This process can be effective for the teacher if the questions are structured in a simple format.

However, depending on the nature of the subject, it is good for the student to understand the question, to visualize the question, and to use various tables, schemes, formulas, pictures, in short, objects for the Microsoft Word program documents, it will have a good effect, it will lead to specialization of the questions in the subject. In some places, the information consisting only of text cannot convey the information provided through the objects of various tables, schemes, formulas, pictures, in short, the objects of the Microsoft Word program. To this, the questions created by the teacher should be created using modern or old words used in the current state of the science. This creates some uncertainty for the reader, such as expressions with the same meaning and form used in the language, as well as the increasing degrees of adjectives. In the case of information with visual graphics, pictures, and tables, these problems are partially eliminated, which reduces the number of problems that may arise later, when the student doubts the correctness of the questions, complains and appeals. In the structure of questions, it is enough to know the types of non-textual information generally recognized,



agreed and recommended by representatives of the scientific field, and not some bookish and scientific approaches in the words. It can be a bit difficult for the teacher to create questions based on objects. In addition, it will take some time to make them suitable for each student individually. Various programs and services on sites can partially perform this task in the case of text. The program recommended below is an improvement over the previous program [2], and several shortcomings have been eliminated. Using Microsoft Word's API, it offers its own small, advanced solutions when certain conditions are met. The test questions in the downloadable file can be as follows.

$$(x + a)^n = \sum_{k=0}^n \binom{n}{k} x^k a^{n-k}$$

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$$A = \pi r^2$$

1-Pic. View of formulas

Form1

Fayl yuklash Fayl tanlanmasa sarlavha uchun matn kiriting agar bo'lsa

Variante raqamidan chapdagi matnni kiriting agar bo'lsa Variante raqamidan o'ngdagi matnni kiriting agar bo'lsa

Variante №

Bir variantdagi savollar soni: 3 Fayl yuklash Savollar alohida qatorlarda joylashishi kerak

№	Fayl manzili	Jami savollar soni	Olinuvchi savollar soni
1	D:\Sotuv\Savol variantatsiya muammo:	6	3

Fayl yuklash Fayl tanlanmasa quyi qism uchun matn kiriting agar bo'lsa

Variante soni: 3 Variant aralashtirish Faylga ko'chirish

2-Pic. Program interface

The improved view is that you can get the questions from the list from different files from the previous program. The program interface has also been improved, we have left it visible so that you know when there is a problem with MS Word. By deleting objects when they are not needed, the program is more flexible and errors are reduced, making it run faster than before.



Variant №1

1.  $(1+x)^n = 1 + \frac{nx}{1!} + \frac{n(n-1)x^2}{2!} + \dots$
2.  $A = \pi r^2$
3.  $f(x) = a_0 + \sum_{n=1}^{\infty} \left( a_n \cos \frac{n\pi x}{L} + b_n \sin \frac{n\pi x}{L} \right) |$

Variant №2

1.  $e^x = 1 + \frac{x}{1!} + \frac{x^2}{2!} + \frac{x^3}{3!} + \dots, -\infty < x < \infty$
2.  $(1+x)^n = 1 + \frac{nx}{1!} + \frac{n(n-1)x^2}{2!} + \dots$
3.  $A = \pi r^2$

Variant №3

1.  $(1+x)^n = 1 + \frac{nx}{1!} + \frac{n(n-1)x^2}{2!} + \dots$
2.  $A = \pi r^2$
3.  $f(x) = a_0 + \sum_{n=1}^{\infty} \left( a_n \cos \frac{n\pi x}{L} + b_n \sin \frac{n\pi x}{L} \right)$

**3-Pic. The view of the result is in MS Word**

### Certain Conditions

- The question bank should be separated by blank lines
- Pictures, tables, and formulas should be in a format that fits the text and should not be formatted additionally
- If it is necessary to use an empty line in a question, it is recommended to use a space before and after it.
- If it consists of an image file or a formula file itself, it must be separated by a space on both sides.

### Advantages

- It is easier to prepare questions than services provided on websites.
- In addition to text, it can also mix objects in the document.
- Even if there is a Windows operating system and an optional MS Word version.
- It can mix questions consisting only of objects, this possibility was not available in the previous program.

### Disadvantage

- Works only on a computer with Windows operating system and optional MS Word version.
- Since the MS Word API is used, the speed of processing depends on the speed of the computer and the speed of MS Word.
- Do not copy files in other programs while the program is running.

This program can be a partial solution to the problems associated with mixing questions. Due to the fact that most pedagogues have the skills to work in MS Word, attention was paid to these aspects when creating the program. Teachers of general secondary schools can use the program to receive various written control tasks. Usually, the number of written options given in textbooks is not proportional to the limited number of students. This can lead to uncontrolled



copying. The program uses mixed questions from the general option for each option included in the option. With the help of the program, an option can be created individually for each student.

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