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TECHNIQUE FOR RENDERING AND CREATING SPECIAL EFFECTS OR TEACHING ANY COMPUTER SCIENCE IN 3DS MAX

Nazokat Rustamovna Tukhtaeva

Senior Lecturer, Department of Applied Mathematics and Informatics, Faculty of Information Technology, Termez State University

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Abstract:

Applied mathematics is the application of mathematical methods in various fields such as physics, engineering, medicine, biology, finance, business, computer science and industry. A branch of mathematics that considers the application of mathematical methods, algorithms in other areas of science and technology. Examples of such applications would be: numerical methods, mathematical physics, linear programming, optimization and operations research, continuum modeling, biomathematics and bioinformatics, information theory, game theory, probability theory and statistics, financial mathematics and actuarial calculations, cryptography, and therefore combinatorics and somewhat finite geometry.

Visualization is any method of creating images, diagrams or animations to convey a message. Visualization with visual images has been an effective way of communicating both abstract and concrete ideas since the dawn of mankind. Visualization is one of the most common tools in practical psychology. Despite this, or maybe precisely because of this, many are very skeptical about whether it can positively affect a person's life. The concept of visualization is quite simple.

The methodology of teaching computer science is a branch of pedagogical science that considers various problems of teaching computer science at school, in the preschool period, in secondary vocational and higher educational institutions both in full-time education and through the use of distance technologies, as well as in organizing independent study of computer science. The form of teaching informatics is a purposeful, clearly organized, rich in content and methodically equipped system of cognitive and educational communication, interaction, relations between the teacher and students.

The form of teaching informatics is realized as a unity of purposeful organization of content, teaching aids and methods.

A spelling error is the misspelling of a word; it can be allowed only in writing, usually in a weak phonetic position (for vowels - in an unstressed position, for consonants - at the end of a word or before another consonant) or in continuous-divided-hyphen spellings, for example: on the square, about a blue pencil, nebyl, someone, half an orange.

The progress of computer technology has determined the process of the emergence of new diverse sign systems for writing programming language algorithms. The meaning of the appearance of such a language is to simplify the program code.

In computer science, transclusion is the inclusion of one electronic document or part of it in other electronic documents through a hypertext link. Transclusion usually means displaying the document that is being referenced. The document (record) is displayed automatically and is available to the end user. It seems that as a result of transclusion a single complex document is formed, while in fact its parts were quickly assembled from various sources that can be stored.

Oberon is an operating system developed by Niklaus Wirth and Jürg Gutknecht (ETHZ) for the Ceres single-user workstation as part of the "Project Oberon". As the authors wrote, the main goal of the project was "to design and implement the entire system from scratch, and structure it in such a way that it can be described, explained and understood in its entirety." Indeed, the 550-page book contains a complete description of the system, along with source code.

Movies, computer games, modern advertising and any other visual content cannot be imagined without special effects. The 3D artist either combines them with real footage, or completely creates a frame using computer graphics. This profession requires not only creative thinking, but also excellent technical knowledge, possession of tools. You need to constantly improve your skills, practice in solving new problems, improve the quality of your work.

Creating a visualization from scratch on your own will be difficult and time consuming. The use of information technology in teaching is one of the features of a modern teacher. In the context of the widespread computerization of society, there are special requirements for the level of training of an informatics teacher, who must be able to use the latest advances in computer technology and technology in his professional activities. Firstly, the video editor in training can be used by the teacher as a visual aid. The principle of visualization is one of the didactic principles, according to which the use of visualization when working with educational material increases the efficiency of assimilation.

Visualization contributes not only to a better assimilation of theoretical knowledge by students, but also to an understanding of the connection between scientific knowledge and life. The introduction of new technical means into the educational process (PC, programs for digital information processing) expands the possibilities of visual teaching methods.

For example, at any stage of watching a movie, you can speed up the process or slow it down, where necessary, for a more detailed and accurate explanation of the material. Enlargement or distance of those places that need to be given special attention to students (for example, especially small parts of a computer). It is possible to show difficult-to-observe phenomena. This method of teaching is simply necessary for distance learning and just on the elements of the lesson. As a result, we increase interest in the subject being studied by attracting the attention of students with an interesting video film, and broaden our horizons by using material in the film that cannot be told, but only shown.

To implement video training, you can use ready-made educational films, or you can create your own films on a given topic, according to the specific goals and objectives of the lesson. A computer science teacher, in our opinion, should have such professional competence as the ability to create and appropriately use video films. The set of software is so extensive that finding a suitable program, the most convenient and understandable for the teacher, will not be difficult.

Creating videos can be a very valuable skill in the practice of a teacher of computer science. The author's video film is a means of purposeful visual education that increases the interest of schoolchildren in the subject. On the other hand, learning to create videos with various special effects can also contribute to career guidance.

The main work on creating an educational video film consists of 5 parts:

1. setting educational goals and objectives;
2. recording (selection) of video fragments;
3. video film editing;
4. saving the video on the computer in the required format;
5. analysis of the achievement of the tasks set for the video film.

Organization of the educational process. The learning process can be organized in two interrelated and complementary forms:

lesson form, in which the teacher explains the new material (lectures), advises students in the process of solving problems, students pass tests on theoretical material and defend practice;

an extracurricular form in which students after classes (at home or in a computer class) independently perform computer practicums.

The main form of conducting classes are person-oriented workshops on problem solving, which include:

individual tasks are selected for each student (as a rule, for thematic 3-5, for the final up to 1-2), the selection of tasks for each student must be performed based on their mental abilities and psychological attitude to installation.

Tasks for each student are given address, each student in different classes of the workshop has a different option (today the first, the next time the ninth, etc.),

tasks for each student are feasible, i.e. he is certainly sure of his success.

One of the important qualities of the text is the absence of grammatical errors. Grammatical errors in the text can occur, firstly, due to ignorance of a person, and secondly, as a result of a typo when typing. To eliminate grammatical errors, an automated spell checker is built into the Word environment. The basis of this system is a database - spellings of Russian and English words, and a knowledge base - grammar rules. This system checks each written word against the database, and also analyzes the spelling of phrases and sentences (case consistency, comma placement, etc.). When errors are found, the system gives a hint and, in some cases, options for correcting errors. This system is an example of an artificial intelligence system.

By default, Microsoft Word checks spelling and grammar automatically as you type, highlighting possible spelling errors with a red squiggle and possible grammatical errors with a green squiggle. The spell checker is always enabled by default.

You can correct errors as you enter the text, or you can check all the text at once when you finish entering. To correct a mistake as you type, right-click on text underlined with a wavy green or red line, and then select a suggestion or appropriate command from the shortcut menu. When correcting a spelling error, the context menu often suggests words that are close in spelling.

But it is better to carry out a spell check immediately in the entire text after the input. This will save a lot of time.

It should be noted that the word underlined in red is not always spelled incorrectly. It is possible that this is some special term that is not in the dictionary. Very often, proper names are underlined, as well as compound words (for example, “autotext”, “autocorrect”, etc.), which are also missing in the application database.

If a word is spelled correctly but underlined with a red line, you can add it to your custom dictionary

and it will no longer be underlined.

If a typo results in a word that is in the dictionary, then the spell checker will not mark it, for example, if the word “who” is written instead of the word “cat”, or the word “pair” is written instead of the word “desk”. To eliminate such situations, you should carefully reread the text yourself or, even better, ask another person to do so.

General forms of education are divided into frontal, collective, group, pair, individual, as well as with a shift of students.

The frontal form of learning is used when all students work on the same content or when mastering the same type of activity and involves the teacher working with the whole class at the same pace, with common tasks. The collective form of education involves considering the students of the class as an integral team with its own leaders and features of interaction. In group forms of education, students work in groups created on a different basis and for a different period of time.

In paired learning, the main interaction occurs between two students who can discuss the problem, mutually teach or mutually control.

Individual form of education involves the interaction of the teacher with one student. Informatics has formed a new type of individual form of education: one on one with a computer (student - computer). As a result, the student acquires knowledge at his own pace, he chooses an individual route for studying educational material within the framework of a given topic of the lesson.

The form of learning organization is a time-limited construction of a separate link in the learning process.

External forms of organization of education include: a lesson, a lecture, a seminar, an excursion, a workshop, an optional lesson, an exam, circles of subject and technical creativity, student scientific societies, etc. They designate a certain type of lesson and play an integrating role, since they include goals, content, methods, teaching aids, interaction between the teacher and students.

The internal forms of organization of training include: an introductory lesson, a lesson on deepening knowledge, a practical lesson, a lesson on systematization and generalization of knowledge, a lesson on the control of knowledge, skills, and combined forms of classes. They are classified according to the structural interaction of elements in terms of the dominant learning goal.

Combining a combination of general and specific forms of education, teachers receive different systems of forms of education, called class-lesson, lecture-seminar, distance, etc.

The class-lesson system of organization of the educational process is the basis of the structural organization of the national school.

The advantages of the class-lesson system of education: a clear organizational structure, ease of managing class activities, the possibility of collective interactions and solving learning problems, the constant emotional impact of the teacher's personality on children, saving learning time.

Literature used:

1. Ф.Ю. Марданова, Т.Х. Расулов. Преимущества и недостатки метода работы в малых группах в обучении высшей математике. Академия 55 (4), 65-68.
2. ТХ Расулов. Инновационные технологии исследования линейных интегральных уравнений. Наука, техника и образование 93 (9).
3. Т Расулов. О конечности дискретного спектра операторной матрицы 3х3. Методы функционального анализа и топологии 22 (1), 48-61.
4. Т Расулов. Конечность числа собственных значений гамильтониана в фоковском

пространстве. Материалы IAM 5 (2), 156–174.

5. ТХ Расулов. О ветвях высокой решетчатой модели спинного бозона с не более чем двумя фотонами. Теоретическая и математическая физика 186 (2), 293–310.
6. ТХ Расулов. Определяемые значения одного матричного оператора. Сибирский математический журнал 52 (2), 400-415.
7. ТХ Расулов. Исследование роста одного модельного оператора в пространстве Фока. Теоретическая и математическая физика 161 (2), 164-175.
8. ТХ Расулов. Асимптотика дискретного удлинения модели одного оператора, ассоциированного с системой трех отдельных решеток. Теоретическая и математическая физика 163 (1), 34-44.
9. Т.Х. Расулов. Исследования существенного спектра гамильтониана в фоковском пространстве. заявл. Мат. Инф. Наука 4 (3), 395-412.
10. ТК Расулов. Асимптотика дискретного спектра модельного оператора, связанного с системой трех частиц на решетке. Теоретическая и математическая физика 163 (1), 429-437.
11. ТХ Расулов. Исследование значительного роста одного матричного оператора. Теоретическая и математическая физика 164 (1), 62-77.
12. ТК Расулов. О ветвях существенного спектра модели решеточного спинового бозона с не более чем двумя фотонами. Теорет. Мат. Физ. 186 (2), 293-310.
13. ТХ Расулов. Существенный спектр одного модельного оператора, ассоциированного с системой из трех частей на решетке. Теоретическая и математическая физика 166 (1), 95-109.
14. ТК Расулов. Исследование существенного спектра матричного оператора. Теоретическая и математическая физика 164 (1), 883-895.
15. Т.Х. Расулов. Расулов Х.Р. Ўзгариши чегараланган функциялар бўлимини ўкитишга доир методик тавсиялар. Научный прогресс 2 (1), 559-567.
16. Т.Х. Расулов. Число собственных значений гамильтониана модели трехчастичной решетки. Контем. Анализ и прил. Математика 2 (2), 179-198.
17. ТК Расулов. О числе собственных значений матричного оператора. Сибирский математический журнал 52 (2), 316-328.
18. ТК Расулов. Дискретный спектр модельного оператора в пространстве Фока. Теоретическая и математическая физика 152 (3), 1313-1321.
19. ТХ Расулов. Уравнение Фаддеева и расположение значительного вируса модели оператора. Изв. вузов. Матем, 59-69.
20. ТХ Расулов. Структура высокого роста модельного оператора, связанного с системой различных частиц на решётке. Вестник Самарского государственного технического университета. Серия Физико …
21. ТХ Расулов. О редком значительном росте модельного оператора. Математические заметки 83 (1), 78-86.
22. ТК Расулов. Уравнение Фаддеева и расположение существенного спектра модельного многочастичного оператора. Русская математика 52 (12), 50-59.
23. ТК Расулов. О структуре существенного спектра модельного гамильтониана многих тел. Математические заметки 83 (1), 80-87.

24. ТХ Расулов. О дискретном спектре одного модельного оператора в помещении Фока. Теоретическая и математическая физика 152 (3), 518-528.

25. ТК Расулов. Существенный спектр модельного оператора, связанного с системой трех частиц на решетке. Теоретическая и математическая физика 166 (1), 81-93.

26. ТК Расулов. Исследование спектра модельного оператора в фоковском пространстве. Теоретическая и математическая физика 161 (2), 1460-1470.

27. ТК Расулов. Структура существенного спектра модельного оператора, связанного с системой трех частиц на решетке. Вестник Самарского государственного технического университета, сер. Физико-математические…

28. ТК Расулов. О существенном спектре модельного оператора, связанного с системой трех частиц на решетке. Вестник Самарского государственного технического университета, сер. Физико-математические…

29. ТК Расулов. Уравнение Фаддеева и расположение существенного спектра модельного оператора для нескольких частиц. Известия высших учебных заведений. Математика, 59-69.

30. ТК Расулов. О наличии взрослого уровня обобщенной модели Фридрихса. Узбекский Математический Журнал, 56.