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Animation and symbol editing with macromedia flash 8.0: The packman application

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Abstract

This paper presents a didactic scenario for the creation of a multimedia application combining image and movement, which is intended for the course "Informatics Applications" of the Vocational High School. This is a two-hour scenario that introduces the student to the creation of a multimedia application, mobilizing the interest for the specific activity, since with simple and fast steps it leads him to the creation of

his first animation. The first hour is dedicated to the general mobilization of the student and the discovery of the basic concepts and techniques, while the second leads him to the acquaintance with the environment of "Macromedia Flash 8.0" and the creation of the first animation. The development and structure of the teaching scenario is based on the standard of level B training for IT teachers.

Keywords: animation, image, motion, symbols

Introduction

Almost all age groups of students (and not just students) have watched cartoons with great interest and pleasure. The given representations are an excellent motivation for engaging with the world of animation. This paper proposes a didactic scenario that aims to bring students in contact with the basic concepts and techniques related to the animation, as well as to introduce them to a way of creating animation through an animation creation and editing software, which is "Flash". The choice of Flash, among many software for the development and processing of animation was made mainly because it is very simple to use and also free open source software, without special requirements of computing power. The proposed scenario concerns the teaching of the course "Multimedia Applications" of the 3rd grade of the Vocational High School, with, preferably, a basic knowledge of image and sound processing.

Description of the educational scenario

According to the curricula in Informatics this didactic scenario is primarily intended for the laboratory course "Multimedia Applications" of the 1st grade of Vocational High School. It can also be taught to students of the General Lyceum in the course "Introduction to the Principles of Computer Science", but also to students of the 2nd grade of the Vocational High School, in any Orientation Group within the course "Introduction to the Principles of Computer Science" [1].

In this case, some adjustments to the structure of the goals and the distribution of time would be useful. Finally, this scenario can be taught to students of the 6th grade of primary school, according to the Unified Reformed Educational Program of Primary education, in the Thematic Units: "I play and learn with the computer-Creative use of applications of ICT ". In this case it is necessary to add at least one teaching hour with a corresponding adjustment of the schedule. It will also be important to remove targets related to concepts, as well as to plan for a more active attitude of the teacher, as the expected needs of this age group are greater [1].

The title of this scenario is "Creating a multimedia application of image, motion and sound using Macromedia Flash 8.0" and was implemented in the course "Informatics Applications" of the First grade of the Vocational high school. The estimated duration for the implementation of this course is 2 teaching hours and the course took place in the school computer lab. The students worked both individually on each computer (to complete the Worksheet activities) and in groups of two. The trainees will be able to:

- Use Macromedia flash,
- Design and create a simple animation,
- List and explain basic concepts related to the moving image,
- Name basic historical elements of the moving image.

Required logistical infrastructure

The implementation of this scenario required a computer lab, with internet access in order to be able to search for images from the internet, Macromedia Flash installed to create the application and the existence of a microphone and speakers (or headset) per PC. It was also suggested that a video projector be used to resolve any questions that may arise about the Macromedia Flash environment ^[2].

The following teaching material was used

- Article published on young people in the digital age (Prensky 2004),
- Small (one page) Google search guide,
- Small manual for the basic elements of Movie Maker (two pages),
- Three page activity sheet,
- Evaluation sheet,
- Teacher observation sheet.

Conclusions

This educational scenario was implemented on a design basis for the most part. However, the time was not enough to complete the second activity. Only one team managed to complete it, indicating that the division of time and tasks should be reviewed.

Throughout the educational process the students' interest was lively and they had an active participation both in the intervals of the presentation with questions, which in many cases were answered by their classmates, as well as in the phases in which they worked in groups to complete the activities ^[3].

The cooperation between the students was exemplary throughout the teaching without problems, since the roles within the group alternated harmoniously. The main difficulty was the limitation of time, as mentioned. The students, already from the initial brainstorm, showed a willingness to participate and submit opinions, dragging the introduction to the lesson out of schedule ^[4].

The process of designing, implementing and reflecting a teaching scenario has a lot to offer in teaching and to each teacher individually. It is the framework that will connect the individual parts of teaching and will substantiate them in a single spiritual edifice, directly and effectively applicable. Specifically, the benefits of the teacher are summarized in the following points:

- The teaching is organized in specific phases, which are implemented in distinct steps with specific objectives and expected, evaluable results. In order to achieve the design, the teacher mentally traverses the teaching and thus predicts (as much as possible) difficulties, sensitive points, teaching needs. An important help in this is the fact that teaching-related bibliographic references are taken into account ^[5].
- Reflection gives the opportunity to improve both the individual teaching and the teacher, as he acquires more and more metadata both on the way of transmitting specific conceptual sets, and on the way of perception and acquisition of concepts by specific groups of trainees ^[6].

Annex

Activity title

"Animation and Symbol editing with Macromedia Flash 8.0"

Objectives

At the knowledge level, learners should be able to:

- Recognize animation,
- Understand the key terms, frame, key frame, blank frame.

At the skill level, learners should be able to:

- Move, rotate graphics and change their scale,
- Apply color effects to graphics,
- Create Layers,
- Create animation with motion tweening,
- Move objects along a specific path,
- Transform shape objects (shape tweening),
- Create objects that move and transform at the same time.

At the attitude level, learners should be able to:

- Develop personal and collective responsibility as members of a team,
- To determine the effectiveness of the specific program.

Prerequisite knowledge of students

During the first four months and in the course "Multimedia Applications", the students were taught another program for creating multimedia applications by the same company, which was the Director, and as a result several basic terms are known to them.

Required logistical infrastructure

- Screen sharing software for distributing the necessary files of the instructor to the students,
- Prerequisite for the installation of Macromedia Flash 8.0 software,
- The computers will be connected to a local network as internet access is also required.
- A PC is required for the instructor connected to a video projector,
- Standard teaching will take place in a computer lab,
- Hardware: One workstation per group of students is required,
- The ability to use e-mail is essential.

Class Organization

For the achievement of the objectives of the specific scenario, the collaborative-exploratory didactic approach has been chosen. The students are divided into small groups (2 - 3 people) and with the help of the teacher are asked to complete the activities suggested in the worksheet. The teacher plays a supporting role, guiding students where necessary and helping them to discover knowledge, actively participating in the teaching process.

Software used

The software available from the website <http://www.adobe.com> will be used for the needs of the scenario.

Duration

The estimated duration for the implementation of this course is two teaching hours.

Brief description of the activity and expected difficulties of the students

In this activity students will learn to use the automatic tweening of the Flash application. It is possible to create two types of tweening - "motion tweening" and "shape tweening". Motion tweening gives motion to graphic properties, while shape tweening has to do with transforming shapes. Students must define the properties of an object, such as position, scale, rotation, hue, and alpha in one initial keyframe, and then change them to the next keyframe. Flash will create the motion for all intermediate frames on its own.

Students are made aware that creating levels helps them better control their objects in the scene. For the needs of the exercise, two (2) levels will be created, one of Packman and one of the corridor. The level of the corridor will be constant while the level of Packman will be the actor himself who will move in the corridor. The Packman is designed by the students with the help of the toolbox.

Expected difficulties for students could be the creation of keys to a new work environment as well as the design of Packman.

Worksheet

For this intervention the students will be given one (1) worksheet with one (1) activity and the students cooperatively try after they have already understood the software environment during the exploration stage to achieve activities 1 and 2.

Worksheet 1 "Packman" lesson: Multimedia Applications

Class	
Team Names:	1..... 2..... 3.....
Date	

Activity 1 Packman

In the packman exercise there will be, as we see, a corridor in which the packman will move from the beginning to the end of it and this movement will be repeated. After setting the scene to 640 * 480 create the following corridor.

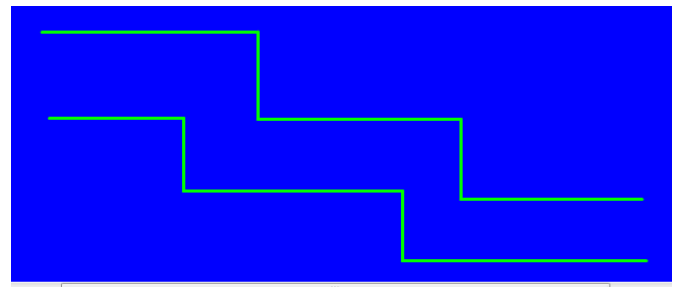
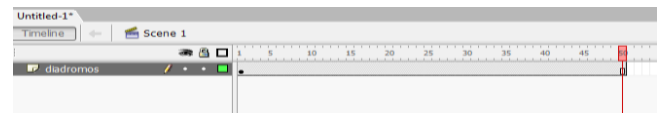


Fig 1: Packman



Then create the actor in the corridor level. Note that the movement will end at 50 frames.

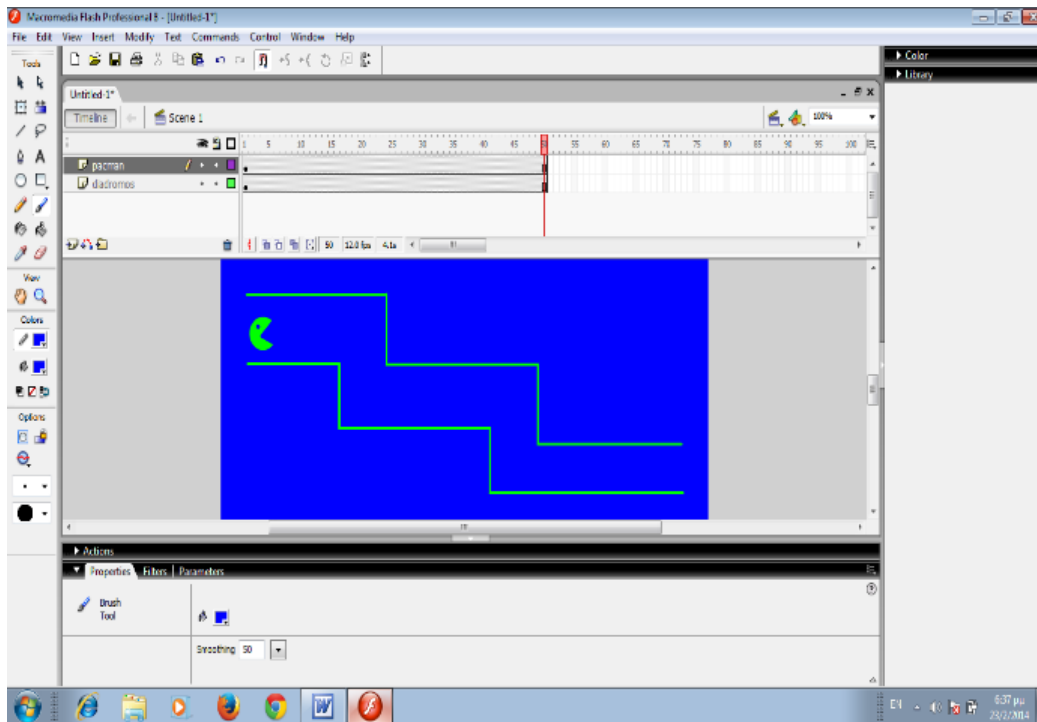


Fig 2: Scene 1

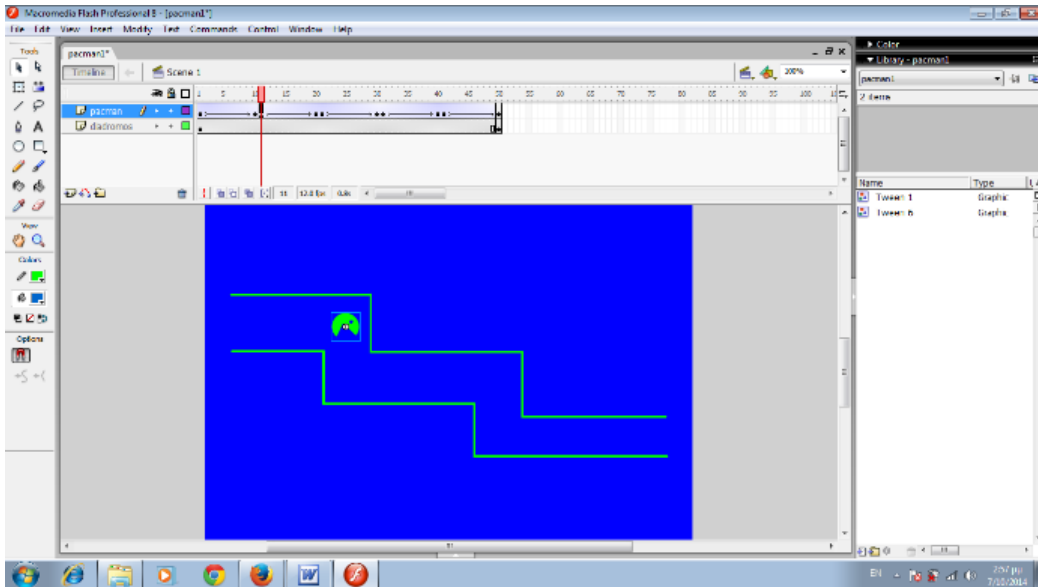


Fig 3: Scene 2

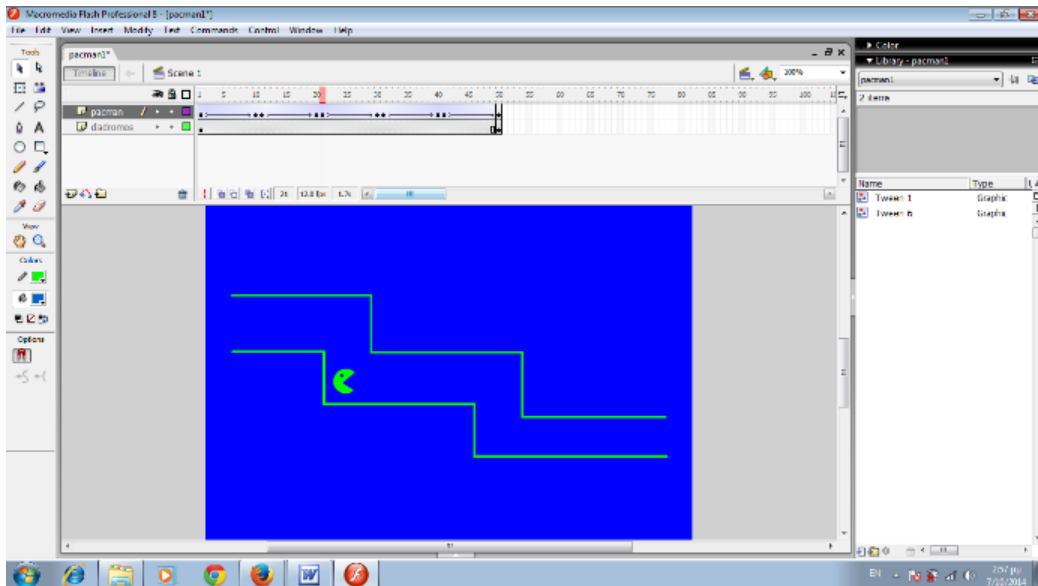


Fig 4: Scene 3

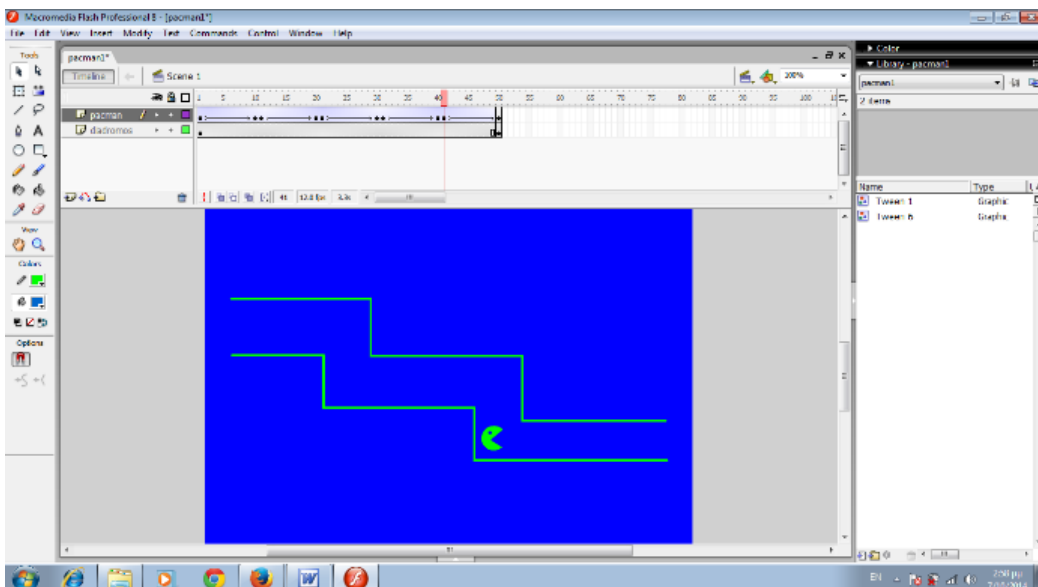


Fig 5: Scene 4

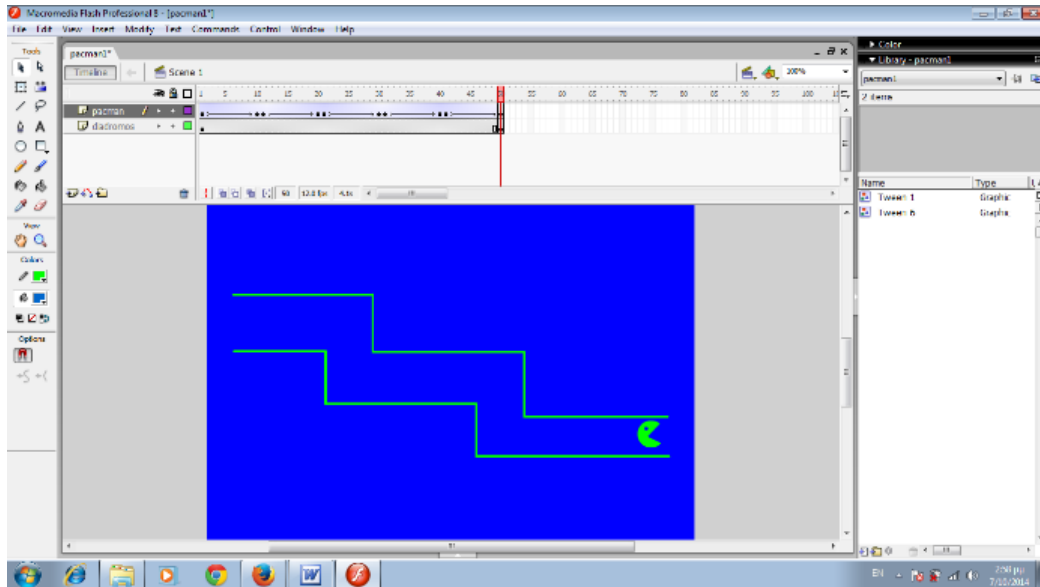


Fig 6: Scene 5

Activity 2

Design the following application so that the pacman following the path goes to his headquarters. You need to keep in mind that all time intervals should be reasonable.

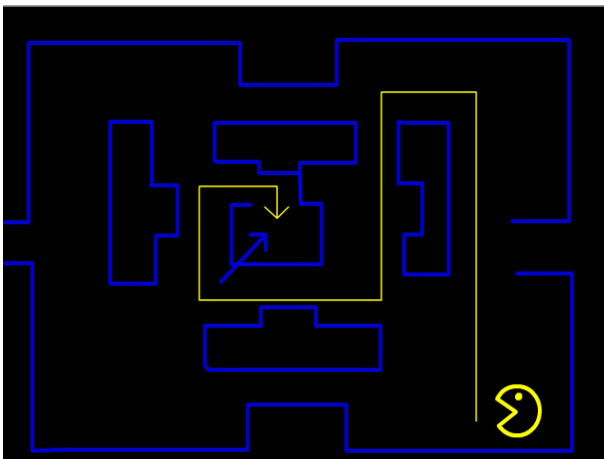


Fig 7

Part B. Reflection

Was the scenario implemented according to its design and objectives? More specifically, for example, was the teaching time sufficient (and its distribution: 2 consecutive hours, etc.)? The logistical infrastructure (computer lab, software, networks, etc.)? Were the objectives of the course specific? Were they achieved? Was there some kind of "teaching noise"?

This educational scenario was implemented on a design basis for the most part. However, the time was not enough to complete the second activity. Only one team managed to complete it, indicating that the division of time and tasks should be reviewed. Despite the fact that the time was not enough, the students responded with interest and tried to complete the activities they were asked to complete.

Did it arouse students' interest? Did the students actively participate in the teaching process? Did they cooperate satisfactorily (if they collaborated during the teaching)?

Throughout the educational process the students' interest was

lively and they had an active participation both in the intervals of the presentation with questions, which in many cases were answered by their classmates, as well as in the phases where they worked in groups to complete the activities. The result of this exercise was enough to excite the students.

Did they cooperate satisfactorily (if they collaborated during the teaching)?

The cooperation between the students was exemplary throughout the teaching without problems, since the roles within the group alternated harmoniously. Of course, the phenomenon was observed that the students who felt more capable, wanted to be the first to take the role of the computer operator. This of course had its positive side because the other member of the team observed the whole process intervening where he could and then with greater confidence took on the role of operator.

What difficulties were presented to the students - skills, knowledge, perceptions?

The main difficulty was the limitation of time, as mentioned. The students, already from the initial brainstorm, showed a willingness to participate and submit opinions, dragging the introduction to the lesson out of schedule. Consequently, the students did not find it difficult to attend and respond to what was asked of them. If we want to focus on one point that, comparatively, made it more difficult for the students, it was the creation of keys and key frames as well as the design of Pacman. However, any initial difficulties that they had, were overcome relatively quickly.

If you were to re-design the scenario, would you change all or parts of it and which ones? Justify and write in detail

Small but crucial changes in the scenario are enough to satisfy, on the one hand, the time constraints and, on the other, the goals of the unit. In order to adapt the needs of the specific scenario to the limitation of one teaching hour, some adjustments in the goal setting are necessary. Specifically, judging by the degree to which a few students completed the second activity, it is estimated that removing the second

activity the time would be enough. Finally, in the phase of reorganization of views, special emphasis should be given to the demonstration of the transformations of objects.

How did the scenario design, implementation and reflection benefit you as an educator?

The process of designing, implementing and reflecting a teaching scenario has a lot to offer in teaching and to each teacher individually. It is the framework that will connect the individual parts of teaching and will substantiate them in a single spiritual edifice, directly and effectively applicable. Specifically, the benefits of the teacher are summarized in the following points: The teaching is organized in specific phases, which are implemented in distinct steps with specific objectives and expected, evaluable results. In order to achieve the design, the teacher mentally traverses the teaching and thus predicts (as much as possible) difficulties, sensitive points, teaching needs. An important help in this is the fact that teaching-related bibliographic references are taken into account.

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