

## **DESIGN OF AN ELECTRONIC TEST FOR STUDENTS' EVALUATION IN THE SUBJECT OF INFORMATICS**

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### **ABSTRACT**

*In this paper is presented an application built in Visual Basic 6.0 programming language for creating electronic test regarding the evaluation of students' knowledge for the subject of informatics in pre-university level.*

*The algorithm of the test model is created based on students' evaluation under the administrative guidance of the Ministry of Education, Science and Technology of Kosova. Following algorithm the test was created in hard copy and electronic form in different types.*

*The creation/build of the application includes the subject layout, test design, algorithm design and algorithm testing.*

*During the development of the test model in Visual Basic 6.0 the Interface is created, Editing Properties are adopted, Code has been written and Executed and as well as Application Program has been run.*

*As a result the multiple models of electronic test can be developed for the module/subject of Informatics. The same methodology can be used to build application program to assess the knowledge of students in other modules or subjects.*

**Keywords:** *Test, Evaluation, Algorithm, Application, Electronic Test*

### **1. INTRODUCTION**

In the learning process the assessment of students has great significance, which in most cases is done through tests. A test is intended to measure the knowledge of a particular subject or module. In most cases, students complete a physical test which was distributed to them by the teacher of the subject, even if the subject is Informatics, though most of time students learn Infomatics at the computer lab. By constructing the electronic test students will be filling the test in a computer online.

### **2. METODOLOGY**

A test or examination is an assessment intended to measure a subject's knowledge, abilities, skills, physical training or similar classifications in many other topics. A test can be administered orally, on paper or on a computer.

A standardized test is a test that is administered in a consistent manner to ensure legal points. Standardized tests are often used in education, professional certification, psychology, military and many other fields.

A non-standardized test is usually very flexible in acting field and forms. These tests are usually developed from different instructors and teachers, and they can't be adapted or widely used by other instructors and teachers or other institutions. A non-standardized test can be used to identify the students' abilities, to motivate the student to study and to get a reaction from the student. In some cases one teacher might develop a non-standardized test which is similar to a standardized one in format, acting field and difficulty aiming to prepare his students for a future standardized test. A teacher may develop weekly tests, monthly or two tests in a semester. The length of the test is set depending from the teacher's or the institution's policy.

A test may be developed and administered by a teacher, an institution, a government body, or a test compiler. In some cases, the test's developers cannot be directly responsible for its administration. With the development and the administration of tests, types and the difficulty level of the tests are very diverse and there is not a consensus nor standards for the test formats and the difficulties that comes after. Very often, the format and the difficulty of the test depend on the educative philosophy of the instructor, subject, class size, the institutions' policy and the accreditation demands or the directive organs. In general, the developed and administered tests by individual instructors are not standardized tests but the tests developed by organizations are standardized [3, 4, 6, 7, 8].

## 2.1. TYPES OF TESTS

Further there will be explained some types of tests.

### *Writing Tests*

The writing tests are tests in which the test taker writes on a letter or in a computer. The student can answer the test by writing, in a physical way or in an electronic way.

### *Multiple Choices Tests*

In a test where the questions are multiple choices, a candidate will give a certain number of questions set in every question and the candidate has to answer the correct answer or group of answers.

### *'True or False' Tests*

In True or False tests the test taker is given the opportunity to answer a question in which the sentence of that questions is either true or false.

### *'Filling the Blanks' Tests*

This kind of test wants the test taker to fill the blanks with a word or a phrase with the 'correct' term. Such test requires a higher level of comprehension and memory than the multiple choice tests.

### *Math Tests*

Most of the math questions or the pre-calculation questions in topics like Chemistry, Physics or Economy are considered to be an exceptional style of testing which doesn't match with the other categories even though some of the questions are multiple choice[3,4, 6, 7, 8].

## 3. COMPILING ELECTRONIC TEST IN VISUAL BASIC 6.0

The compiled test belongs to Informatics subject in the pre-collegiate level in where 12 questions are asked, and where 9 of them have one correct answer out of three and the three others are open type. Each question has a certain number of points depending from the level of compiling questions. The test is worth 50 points and the grading system of 1,2,3,4 and 5 is set by the Ministry of Education, Science and Technology of Kosovo. [5].

For the development of the electronic test we have to consider some steps which have to be created in order to achieve a succesful application. The needed steps are: writing the exercise, the block diagram algorithm in the block-diagram form and the try-out (test) of the algorithm. [1].

Designing of the application for the electronic test in Microsoft Visual Basic 6.0 should go through some phases that are important for the creation of a successful application. [2]

- **Realization of interface** – Creation of the form with all the controllers and needed objects;
- **Properties Editing** – Edit each of the controllers or other needed objects;
- **The writting of code (event code)** – Writting of code for controllers or other needed objects;
- **Execution and saving** – Execution and saving of the program as a (.exe) file.

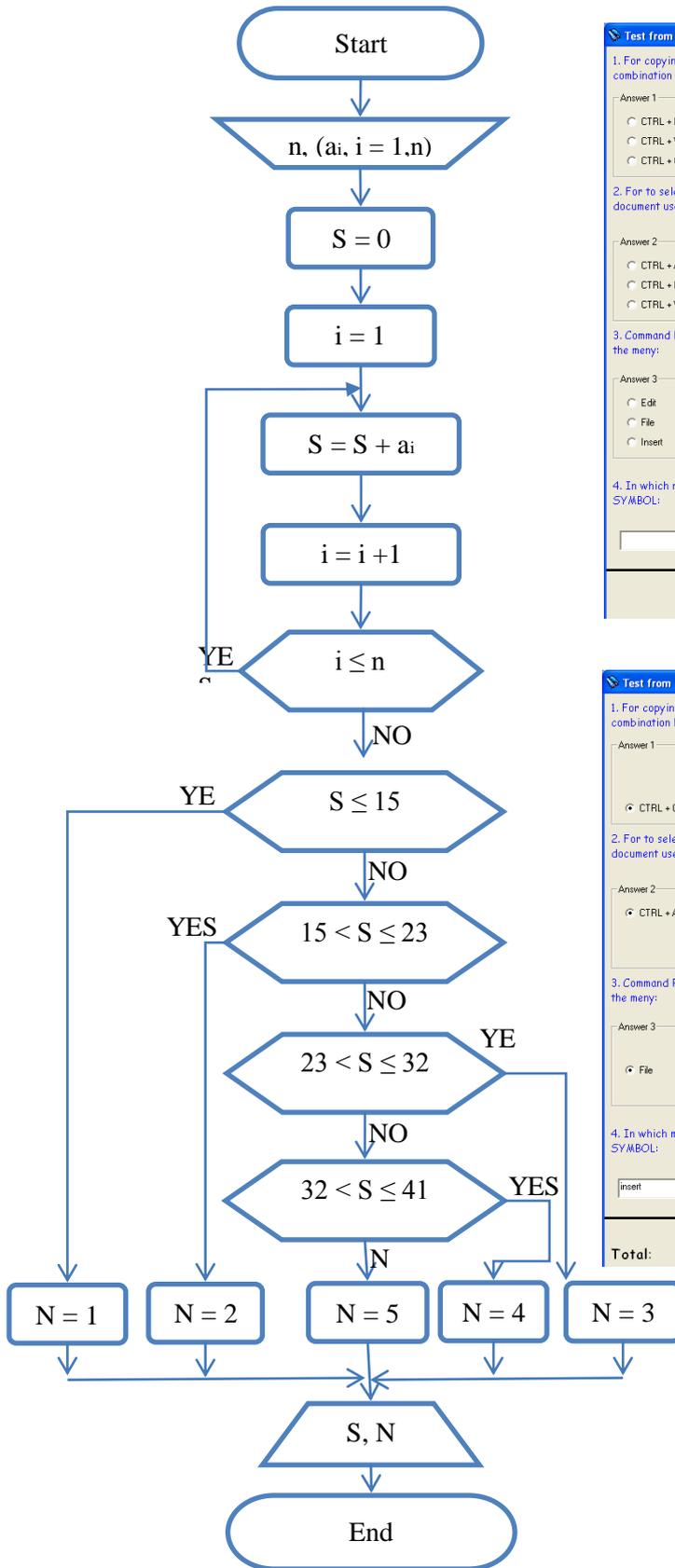


Fig1 Algorithm for electronic test

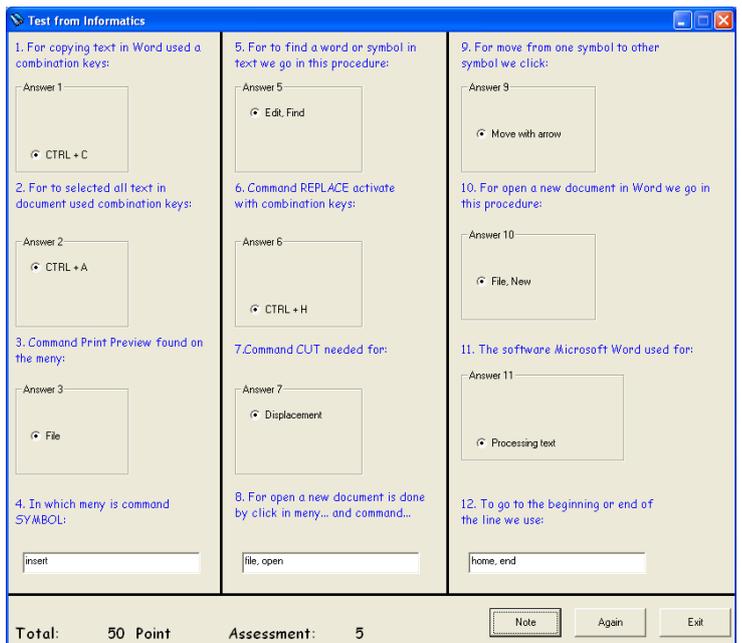
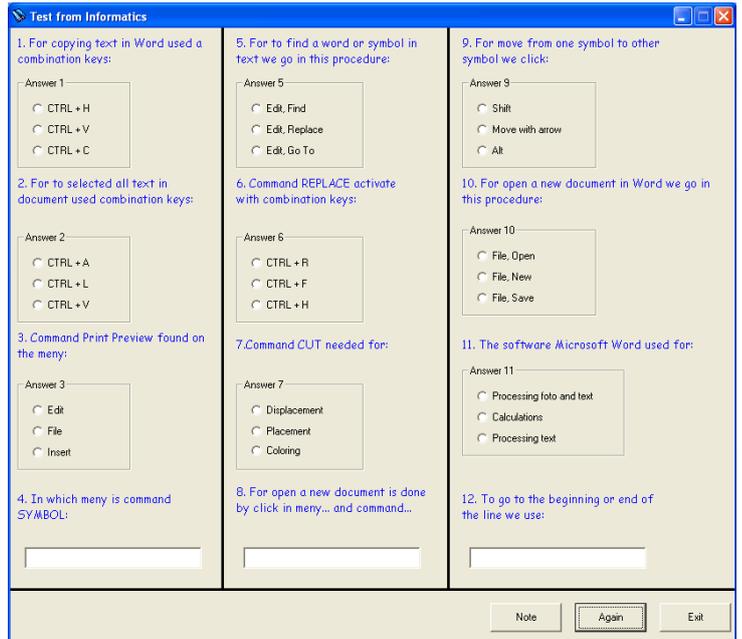


Fig2 Electronic test before and after the execution by the student (S=50 point, N=5 note)

#### 4. CONCLUSION

In this transaction by constructing the electronic test in Visual Basic 6.0 we can gain many important results based on the evaluation of students during the learning process. After assigning the subject for compilation of electronic test, creation of algorithm, construction of the application and its execution, we conclude:

- Electronic test is easily applied in all phases of the class structure, as advocacy, implementation and reflection;
- Time for realization of electronic test is very effective and rational;
- Validity and reliability are increased in electronic test more than in the classic one;
- Applied methodology for compiling electronic test for Informatics can successfully be applied in other subjects as well;
- Educational institutions receives faster and more correct information about the students' achieved results;
- Parents and community can be informed anytime for the achievements;
- The teacher and the student interact through analyses and discussion of points taken from the electronic test;
- Teachers construct professional and qualitative practices for evaluation of students.

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