

EXPORTED TABLES FOR DECISIONS AS A MEANS OF DECISION MAKING IN AUTOMATED SYSTEMS FOR PRACTICAL WEB – BASED EDUCATION

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Annotation. This report proposes the using of tables of decisions in automated system for practical web-based education. The automated assessment of the progress the student is subject to means and methods of artificial intelligence. It takes place in the final stage of training when checking the practical mastering from the studied material. Then the coursework is assigned to the student for developing.

The using tables of decisions enables the lecturer to coordinate the requirements for selecting course work to the specifics of the subject. The tables are filled by him in advance, together with the introduction of the teaching material. Algorithm for decision is the same at different requirements of teachers, which increases the effectiveness of social intelligent agents, that manage the work of the student with the automated system for practical web - based learning.

Keywords: tables for decisions, web-based education, automated valuation, assigning the coursework

1. Introduction

Characteristic of working with an automated system for practical web-based training is that for each training-topic, to the students are assigned tasks previously merged into a system of tasks [1]. The system of tasks is developed in accordance with fundamental psychological principles for the formation of knowledge.

For the final grade in many disciplines be assigned a complex task - Course work. Therefore, the learning with system for automated web-based training ends with a solution of coursework (development of coursework or coursework), which is the final verification of the ability of students to apply practical knowledge of the studied subject area.

This article presents decision-making for assigning the coursework bearing in mind the overall performance of students during the training with web-based system. For the automated determination of the theme of the course work are using tables for decision.

2. Applying of basic psychological principles in automated system for web-based practical training

In building the structure and working methods with an automated system for web-based practical learning takes into account the following basic psychological principles to the development of knowledge of students [2]:

- Principle of conformity and denotation

The formation of the psychic system and its development is due to the reflection of surrounding objects in specific internal images. I.e. the quality of the environment, determine the quality of forming and development of the learners.

- Principle of interiorising of the knowledge and their expressing in actions

Answers, directions and guidance on teaching are given in the most appropriate way, for the student who uses an automated system for practical web-based education. So is supported interiorising of the knowledge and the development of meaningful elements in his mental system.

Exteriorisation means that such built elements of the psychic system are expressed in outer acts as solving problems implementing the mastered knowledge. Therefore, in studying with this system could develop skills to solve problems - alone or with assistance.

- Principle of operation

Mental system the student is formed and developed in the processes of action. Learners alone or with assistance from the system can solve the tasks (this is the action).

- Principle of differentiation and specialization, and the principle of hierarchical integration.

In accordance with these principles in automated web-based system for practical education, the decision of the task is decomposed of tasks-components and knowledge is organized hierarchically.

- Principle of storage

This is the quality stability of knowledge. Therefore, in the training must be reviewing old knowledge. In the automated system for web-based practical training, this is achieved with the inclusion of already learned tasks as components of more complex tasks or help to solve problems by analogy.

So to conclude that the system of tasks should include:

- Tasks to be applied directly to the properties of the target object;
- Tasks, whose decisions are analogous to the solutions of the first group;
- The third, highest level of development of the student knowledge correspond with the tasks in which students can purposefully, through reasoning, to reach new knowledge of the target object.

Detailed, the implementation of psychological principles to the development of knowledge of students in the system for web-based education is discussed in [3].

The systematic organization of the middle for web-based training is a prerequisite for motivating students [4]. An important element for maintaining constant interest in the work is the examination of knowledge, which is made in solving the test after each topic. For verification of the test result, which is reflected in line one can use different approaches, as shown in [5]. Through the tables of decision is easily to submit rules for selecting an action or sequence of actions depending on different combinations of satisfying certain of conditions [8], [7]. It is suitable for use in system for web-based practical training for election on a course assignment.

3. Decision-making for selecting course work through tables of decisions

Table of decision-conditionally making is divided into four quadrants, as shown in Table 1.

Table 1.

Conditions	Options to meet the conditions
Actions	Need for actions

For the solution of choice at program realization with tables for making decision are using logical functions that are organized as a separate incoming program modules.

One version of the implementation of a combination of different conditions are available in one column. The sequence of actions to be done for this variant is available in the same column in the area identified as a need for action.

When the condition is fulfilled in the column of the option means Yes (Truth) and failing - NO (Lie). Conditions for selection of action that are located in a column are associated with the logical operation "AND". In applying this table only one column has a value of "Truth" and sequence of actions indicated by Yes in the same column is executed.

The style of work the student with an automated system for web-based practical training is monitored and delicately guided by intelligent agent [8]. For each topic, it recorded and stored in appropriate manner information on:

- Whether the student decides independently tasks for directly implementation of the studied properties, theorems, etc. or only examine submitted decisions;
- Whether the student received true intermediate results;
- Whether he reaches the correct answers after having considered the decisions of similar tasks;
- If self decide complex tasks such as successfully determined the subtasks in which decompose composite tasks;
- Whether the student has decided correctly most of the tasks in the test at the end of the topic?

The automated assessment of the progress the student is subject to means and methods of artificial intelligence. In this paper is proposed to use the expanded decision tables for deciding whether a student has mastered sufficiently topic. When the conditions that must be checked for a decision are too many are used extended tables of solutions. As part of these conditions are checked in a separate table. In the main table are using the result of preliminary examination of separate conditions in a separate table.

In an automated system for web-based practical training, elements of which are presented here, the grade of mastering by student of each of the topics is assessed in advance. For each topic using additional decision table which is an extension of the main table. Additional table, in general, is on the type of Table 2.

The tables are introduced by the teacher while preparing the web - based learning material. Therefore, the number of conditions on which a decision is taken to award the course work is different. The number of actions, i.e. the types of assignments which to be undertaken may also be different. It depends both from the number of topics and from the methodological decision of the teacher what type of assignments to be awarded.

4. Conclusions

In this article completes the description of the system for web-based practical training by presenting the organization of the final stage of work the student with the system, namely the assigning a course work that complements the training of students.

It is proposed for determining with which topics the student has not familiar satisfactorily to be used decision tables. Advanced decision table is used to determine the type of course work. The aim of the course work is not only to determine whether the knowledge were mastered. But for the insufficiently mastered knowledge, to supplement through practical tasks.

In system for web-based practical training decision tables are introduced from each lecturer and comply with its requirements and specifics of the topic. In upgrading the system they can easily change as the algorithm for decision making and programs that realize it stay unchanged.

5. References

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ИЗНЕСЕНИ ТАБЛИЦИ НА РЕШЕНИЯТА КАТО СРЕДСТВО ЗА ВЗЕМАНЕ НА РЕШЕНИЯ В АВТОМАТИЗИРАНИ СИСТЕМИ ЗА ПРАКТИЧЕСКО WEB – БАЗИРАНО ОБУЧЕНИЕ

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Анотация. В настоящия доклад се предлага използването на таблици на решения в автоматизирана система за практическо web-базирано обучение. Автоматизираната оценка на напредъка на студента е предмет на методите и средствата на изкуствения интелект. Тя се извършва в последния етап на обучението, когато се проверява практическото усвояване на изучавания материал и се възлага за разработване курсова задача или курсов проект.

Използването на таблици на решенията дава възможност преподавателят, подготвящ курса да съобрази изискванията за избиране на курсова работа със спецификата на предмета. Таблиците се попълват от него предварително, заедно с въвеждането на обучаващия материал. Алгоритъмът за вземане на решение е един и същ, при различните изисквания на преподавателите, което повишава ефективността на социалния интелигентен агент, управляващ работата на студента с автоматизираната система за практическо web – базирано обучение.

Ключови думи: таблици за вземане на решения, web – базирано обучение, автоматизирано оценяване, възлагане на курсова работа