POLARISQL: An Online Tutoring System for Learning SQL Language

Soraya Chachoua, Jamal Malki, Pascal Estrailier

HAL Id: hal-01899908
https://hal.science/hal-01899908

Submitted on 20 Oct 2018

POLARISQL: An Online Tutoring System for Learning SQL Language

Soraya CHACHOUA, Jamal MALKI, Pascal ESTRAILIER

University of La Rochelle, L3I laboratory, France
{soraya.chachoua, jamal.malki, pascal.estraillier}@univ-lr.fr

In this paper, we describe our online tutor for SQL language learning called *POLARISQL*[1]. This online tutor was developed by our team in the framework of a global e-learning project environment called *POLARIS*[2] in *L3I*[3] laboratory. The main role of an online tutor is to facilitate and to support students in the process of knowledge acquisition. They allow one-to-one individualized training [3,4].

1 SYSTEM REQUIREMENTS

In this context, the specifications of such a system must meet the requirements of the various system's users. As an example, the adaptability notion needs a thorough knowledge of the learner profile, history, evolution, etc., and the learning model. Therefore, the concept of the learning model will introduce a new working methodology mainly based on activities such as *Lecture course*, *Directed working group*, *Laboratory course* and *Tutorial course*.

2 FUNCTIONAL COMPONENTS

Figure 1 shows POLARISQL tutor portal webpage loaded in a browser. Through this screenshot the user (student, teacher, etc.) can authenticate by inserting a database name, a user name and password[4]. After a successful authentication the user will be directed to the workspace page of the platform as illustrated in Figure 2. The platform's workspace contains several frames:

- frame 1: working document is an SQL editor to write code ;
- frame 2: working document's actions: in the latter, users could perform several actions such as: Edit a working document, execute a (script, line or selected lines), download a content, (save, upload and create) a working document.
- frame 3: output document: displays the queries result execution.
- frame 4: output document's actions: users can manage an output document by different actions such as: clear and save an output document and disconnect from the platform.

---

[1] http://polarisql.univ-lr.fr
[2] http://l3i-education.univ-lr.fr/portail/
[3] http://l3i.univ-larochelle.fr/
[4] Demo account : Database Name=MODELE, Username=demo, Password=demo

Fig. 1. POLARISQL's authentication page   **Fig. 2.** POLARISQL's workspace page

3   DESIGN AND IMPLEMENTATION

The design of POLARISQL is inspired from the traditional teaching processes carried out during practical working classes: query formulation, query execution and results visualization. The backend of POLARISQL platform takes an SQL program as input and produces its execution over the DBMS. At the end of each working session we obtain tow kinds of traces, namely: execution's traces and application's trace[2,1].

     The frontend is a website located in POLARISQL URL as illustrated in Fig.1. We implemented the design layout of our platform inspired from the different authoring systems used during a traditional practical work class such as text editor, execution terminal and oracle server user interface.

4   DISCUSSION AND PERSPECTIVE

POLARISQL is a web-based platform which takes in the working document (text editor) as input an SQL program code, then executes it in the backend and displays results in the output document. Moreover, the platform retrieves all the activities' traces in order to allow an evaluation process. The latter, helps adapt resources and learning strategies for the students

References

1. Didier Courbet. Les applications des sciences humaines à la publicité: De la psychanalyse à la socio-cognition implicite et au neuromarketing. *Humanisme et entreprise*, 276, 2006.
2. Tarek Djouad, Lotfi Sofiane Settouti, Yannick Prié, Christophe Reffay, and Alain Mille. Un système à base de traces pour la modélisation et lâ€™élaboration dâ€™indicateurs dâ€™activités éducatives individuelles et collectives. mise à lâ€™épreuve sur moodle. *Mise à lâ€™épreuve sur Moodle. Technique et Science Informatiques*, 2010.
3. Wenger Etienne. Artificial intelligence and tutoring systems, 1987.
4. Stellan Ohlsson. Some principles of intelligent tutoring. In *Artificial intelligence and education*, volume 1, pages 203–238, 1987.