how to use the transparent Lénárt-sphere for manipulative activities in the class room and how to complement these activities with digital illustrations.

József Udvaros: *Modeling class, object and inheritance terms by the software*

Nowadays almost every computer program operates on the object-oriented principle, what programmers create using object-oriented (OO) programming languages. For application developers it is essential to master the object-oriented thinking. Teachers of programming debate about how and by what means can be OO thinking acquired as fast as it is possible, and whether it is right to start teaching programming OO environment from the first moment. Teachers not only in Europe, but throughout the world have the same very similar views that OO programming is not possible to learn just through using the programming language commands and it cannot be successful without planning OO programming. In this talk the author presents visual software created by himself, which helps students to understand some basic terms about OO programming. The software models class, object and inheritance terms. Author also evaluates questionnaires filled in by students.

Attila Vámosi - Imre Kocsis - Adrienn Vinczéné-Varga: *Analysis of the engineering students' working strategies on the basis of an online test*

Online tests provide a wide variety of analytical methods for evaluation of students' knowledge and their working strategy. Automatic question generation and evaluation have several well-known advantages from the instructor's point of view, e.g. flexibility and time-savings, but there are further possibilities created by well-designed software for the evaluation of the teaching process efficiency and for the analysis of motivation and working method of students. Students can be classified on the basis of their activity on the site (registered login times, logout times, working times; number of attempts, etc.). Special purpose software was developed and applied in a physics course of the Mechanical Engineering training program at University of Debrecen. Evaluation of the results is presented in the talk.

Ladislav Végh: *Interactive animations in teaching and learning computer science algorithms*

Learning programming is one of the hardest tasks for first-year computer science students. They need four types of knowledge for writing programs: basic mathematical knowledge, knowledge of using the IDE, knowledge of the commands and syntax of the programming language, and knowledge to transform the problem into the logic of the program. For the last one, it is necessary for