

A Framework for Web-Based Learning Object Repository in Computer Engineering Education

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ABSTRACT Innovative approaches have enhanced and increased the importance and quality of engineering education. In this context, using new techniques and software provides flexible and effective results. In this paper, a web-based educational learning object repository (LOR) software tool, namely *Süleyman Demirel Üniversitesi Nesne Ambarı (Sdunesa)*, was developed for computer engineering education. This software uses a developmental research method, which is also a derivative of the design-based research method. The developed web-based educational *Sdunesa* tool is used to store and share learning objects (LO) and their metadata. Moreover, the developed software tool is metadata independent by the help of metadata conversion engine and Extensible Markup Language (XML) web services. To achieve these features, the *Sdunesa* tool was developed with web 2.0 technologies. *Sdunesa* is dedicated to the computer engineering field. Qualitative and quantitative research analyses of the software are applied to the students and instructors for evaluation purposes and to demonstrate that the developed software is beneficial for computer engineering education.