3.22 Designing and implementation of new computer software system for the Centre for Open and Distance Learning

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ABSTRACT

Nearly 150000 students were qualifying for university education in Sri Lanka annually. But only 18000 students are selected to follow different undergraduate courses in local universities where we have free education. Remaining students have to follow external degree programmes conducted by National universities, professional courses conducted by private sector institutes or Government institutes and few are going abroad for higher education. Large portion of students are registered annually at the University of Kelaniya among the students who follows external degree courses at different national universities. Nearly 85500 students were registered from 1993 to 2008 and 13716 students were graduated from them so far. We have identified that after the year 2005 more than 10000 students are registering annually. Five different degree courses are offered and 16 exams and 16 seminars need to be conducted for them annually by the CODL. We require more robust, powerful, user friendly and reliable Computer Software System (CSS) by considering rapidly growing students capacity and services rendered to them. On the other hand we require a CSS, because a new exam evaluation system (NEES) has been introduced from the student batch 2007. In that NEES offered course units with particular credit value and each student needs to be completed specified no of credits within a specified period of time relevant to the degree followed. CSS is a Management information System (MIS) type Multi-user Computer System working in a local network environment and password restricted users will be operated the system. Main functionalities will be student registration, conducting exams, printing admissions, printing transcripts and certificates and other required sub functionalities come under above. All functional requirements, non-functional requirements and domain requirements were identified. System was designed by integrating concurrency control and user authorization. The authorized users will only be the CODL Staff and categorize them according to their job assigned. (i.e. Student registration user, Examination data entry user etc.). User authorization subsystem considers different functionalities of the CSS and gives access to each user category by considering their job assigned. Limitations and constraints have to be considered when developing the CSS. It will not be connected to the Campus wide network and run in a separate server with a view to avoid internet hacking and reduce the internet virus risk. Examination results are being published on the CODL web, which runs in a separate server. Storing data in the database is unlimited and the database backup facility is an important feature. Potential usefulness of the CSS are the Maintainability and Modularity. An Integrated software process model was used to model the CSS between two software process models, Incremental development and Rapid application development. More user friendly and interactively interfaces will be developed in CSS. Designing the CSS is done using Rational Rose with object oriented software design techniques. It was developed on .Net framework using VB.Net as the front-end tool and SQL Server as the back-end tool.