

Systems Analysis and Design

1 Systems Analysis and Design

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We begin our study of Systems Analysis and Design by examining what a system is and what a systems analyst does.

1.1 Systems

A system is a method to perform a task.

Well known systems include:

- Windows XP - enables the human user to easily use computer hardware
- Banking System - enables customers to save money and pay for goods or services
- College Enrolment System - enables people to become students on a course of study
- College Timetabling System - enables the right students to attend the right classes at the right time
- Library Loans Circulation System - enables members to borrow resources such as books, magazines and compact disks

A system can itself contain smaller systems. For example a library system might have a system for cataloguing loan stock, a system for obtaining new stock and a system for loaning items to borrowers and recording their return.

1.2 Systems Analysis

Analysis means *to loosen up*. In systems analysis we break a system down into its component parts. For example, look at the college library system for borrowing a book:

- a borrower selects a book from its shelf and takes it to the check-out desk
- a librarian passes the borrower's membership card through a card reader
- the library computer system checks that the borrower is current and that they have no outstanding loans
- the librarian passes the book's id number through the scanner
- the library computer system adds the book details to the borrowers record
- the librarian stamps the return due by date in the book
- the borrower walks away with the book

1.3 Systems Analysis and Design

Synthesis means *to put together*. In systems analysis and design, not only do we break a system down into its component parts but we also synthesise new systems to meet new and changing requirements.

For example, a college library system uses data such as student id number, name, address, course and course end by date directly from the college enrolment system. Currently, a problem is that a student's photograph on the enrolment system cannot be transferred to the library system. A design is needed that, when implemented, can transfer all students' photographs from the enrolment system to the library system and connect each photograph with its respective student.

A systems analyst is a person who looks at systems and breaks them down into their component parts, and creates designs for new systems that meet new requirements.

Exercise 1.1

1. Identify and describe five systems you are familiar with.
2. List the systems used by the college library.
3. List the sequence of actions involved when a loaned item is returned to the college library.

Bibliography

<http://en.wikipedia.org/wiki/system> accessed 8 Dec 2007

<http://greatsystems.com/systems.htm> accessed 8 Dec 2007

http://en.wikipedia.org/wiki/systems_analysis accessed 8 Dec 2007

<http://www.isoxford.com/heritage/index.htm> accessed 8 Dec 2007