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Introduction to systems analysis and design

Topic 1

ICT284 Systems Analysis and Design

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About this topic

In the first topic, we'll discuss what information systems are and how they are used in organisations, and how they are developed through a system development life cycle (SDLC). We'll discuss the role of the systems analysist and other stakeholders in the SDLC, and look briefly at some different ways in which the SDLC can be approached. We'll conclude with an example illustrating all of the system development core processes that we will cover in the unit, and the various models, techniques and diagrams that we will use.

Unit learning outcomes addressed in this topic

1. **Explain how information systems are used within organisations to fulfil organisational needs**
2. **Describe the phases and activities typically involved in the systems development life cycle**
3. **Describe the professional roles, skills and ethical issues involved in systems analysis and design work**
4. Use a variety of techniques for analysing and defining business problems and opportunities and determining system requirements
5. Model system requirements using UML, including use case diagrams and descriptions, activity diagrams and domain model class diagrams
6. Explain the activities involved in systems design, including designing the system environment, application components, user interfaces, database and software
7. Represent early system design using UML, including sequence diagrams, architectural diagrams and design class diagrams
8. Describe tools and techniques for planning, managing and evaluating systems development projects
9. Describe the key features of several different systems development methodologies
10. Present systems analysis and design documentation in an appropriate, consistent and professional manner

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Topic learning outcomes

After completing this topic you should be able to:

- Explain what an information system is
- Describe the various job titles and roles associated with analysis and design work
- Appreciate the social responsibilities of analysts and designers
- List some of the stakeholders in IS development
- Identify the phases of the systems development life cycle (SDLC) and their purposes
- Explain what a system development methodology is
- Recognise some of the models and diagrams used in systems analysis and design

Resources for this topic

READING

- Satzinger, Jackson & Burd, Chapter 1
- Online Chapter A (you can skim section 'Systems that solve business problems')
    - Online Chapter A is on My Unit Readings.

ONLINE INFORMATION

- Australian Computer Society (ACS): https://www.acs.org.au/
- ACS Code of Professional Conduct: https://www.acs.org.au/content/dam/acs/rules-and-regulations/Code-of-Professional-Conduct_v2.1.pdf
- ACS Code of Ethics: https://www.acs.org.au/content/dam/acs/rules-and-regulations/Code-of-Ethics.pdf
- http://it.seek.com.au/ - search on systems analyst and business analyst

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Resources for this topic

Except where otherwise referenced, all images in these slides are from those provided with the textbook: Satzinger, J., Jackson, R. and Burd, S. (2016) *Systems Analysis and Design in a Changing World*, 7th edition, Course Technology, Cengage Learning: Boston. ISBN-13 9781305117204

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Tutorial 1 –
Overview of systems analysis and design

In the first workshop, we will introduce some basic concepts about information systems, systems development, and the role of the system analyst. We'll use a simple example to give you some practice in thinking about the activities involved in undertaking a systems development project. The example will introduce in quite an informal way some of the techniques and models we use for representing systems analysis and design activities, and we'll return to these in more detail throughout the unit.

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Topic outline

- Information systems
- The systems analyst
  - Job profiles in systems analysis and design
- How information systems are developed:
  - Stakeholders in systems development
  - The SDLC
  - Approaches to systems development
- Example