ACS2913
Software Requirements Analysis and Design

Instructor: Victor Balogun

OVERVIEW OF SYSTEMS ANALYSIS AND DESIGN

Lecture Overview

- Software Development and Systems Analysis and Design
- Systems Development Lifecycle
- Iterative Development
- Sample project: Developing RMO's Tradeshow Systems
- Introduction to Ridgeline Mountain Outfitters (From Textbook)

Software Development and Systems Analysis and Design

When talking about software development, you can build:

Computer application(app)

- A computer software program that executes on a computing device to carry out a specific set of functions
- Modest scope
- By definition, and application supports a specific task.

Information system

- A set of interrelated components that collects, processes, stores, and provides as output the information needed to complete business tasks
- Broader in scope than “app”
- Includes database and related manual processes

Software Development and Systems Analysis and Design

Analysis and Design are important parts of what is known as the “Systems Development Lifecycle”

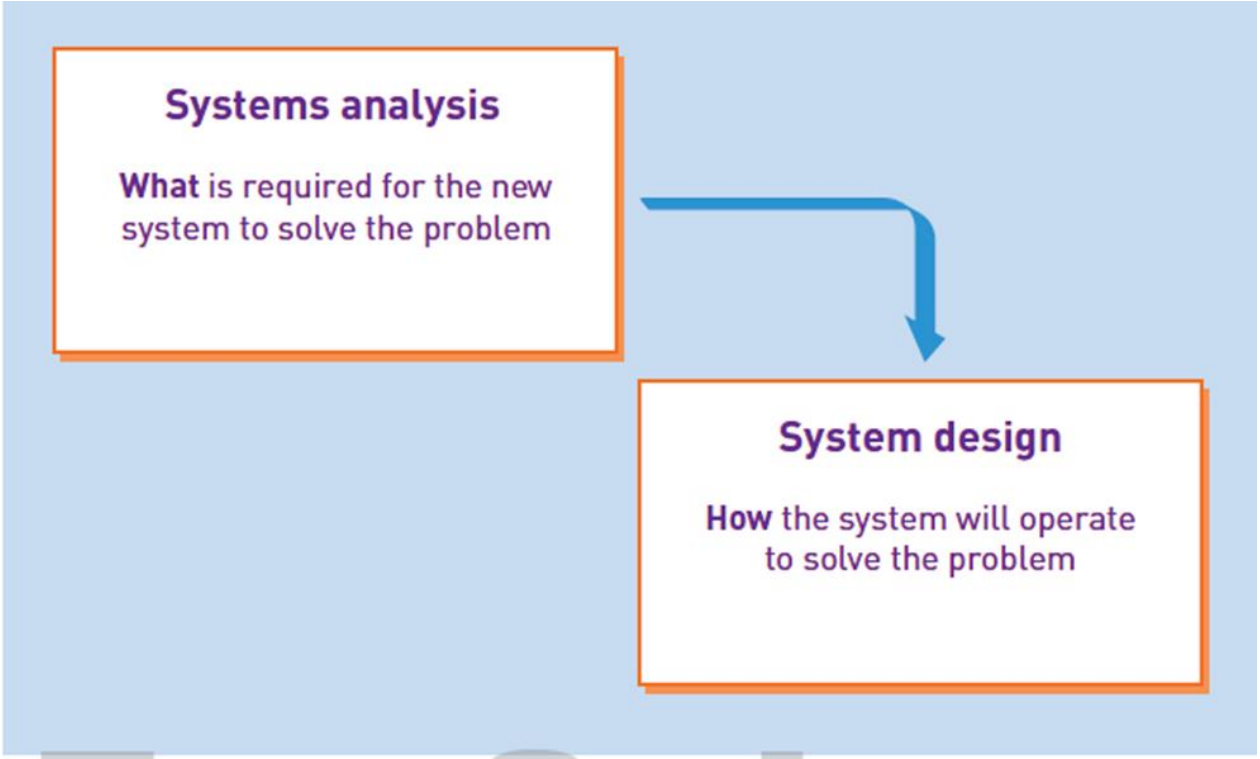
Systems analysis

- Activities that enable a person to understand and specify what an information system should accomplish

Systems design

- Activities that enable a person to define and describe in detail the system that solves the need

Can a house be built without a plan and a blueprint?



Systems Analysis and Design

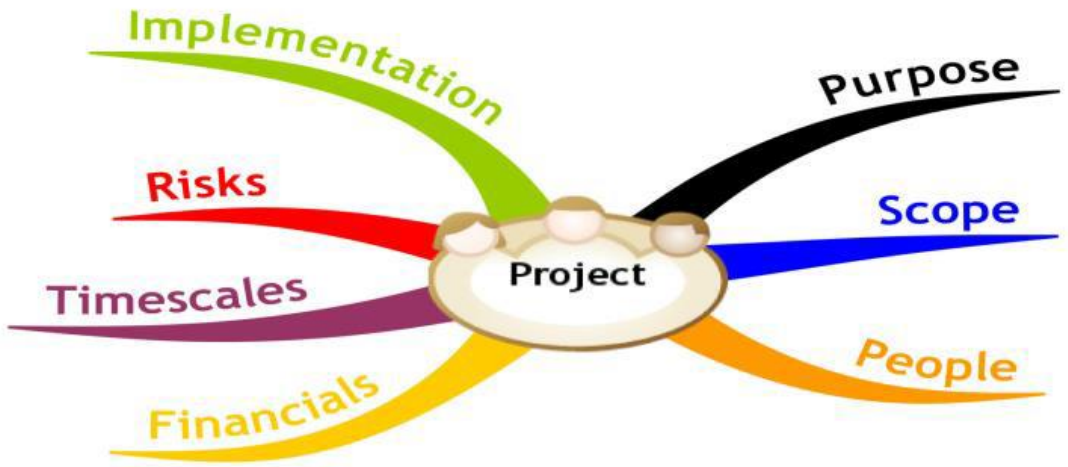
There are methodologies that provide the tools and techniques to complete the development process:

- Understand the “business need”
- Capture the vision
- Define a solution
- Communicate the vision and the solution
- Build the solution (or direct others to build it)
- Launch the information system

Systems Development Projects

Project: A planned undertaking that has a beginning and end and that produces some definite result

- Do you create a project every time that a new system is going to be developed?



- Requires knowledge of systems analysis and systems design tools and techniques

Systems Development Lifecycle

SDLC –the entire process consisting of all activities required to build, launch, and maintain an information system

We will identify 6 main activities for the SDLC

1. Identify the problem or need and obtain approval
2. Plan and monitor the project
3. Discover and understand the details of the problem or need
4. Design the system components that solve the problem or satisfy the need
5. Build, test, and integrate system components
6. Complete system tests and then deploy the solution

SDLC (Cont’d)

Information systems development process (or Methodology)

Set of comprehensive guidelines for carrying out the activities of the SDLC

- Waterfall
- Spiral
- Prototyping..

Most processes/methodologies now use Agile and Iterative development

SDLC (Cont'd)

Agile development

- an information system development process that emphasizes flexibility to anticipate new requirements during development
- Fast on feet; responsive to change

Iterative development

- an approach to system development in which the system is "grown" piece by piece through multiple iterations
- Complete small part of system (mini-project), then repeat processes to refine and add more, then repeat to refine and add more, until done

Agile – Iterative Development

An iterative system development process that develops the system in “sprint” increments lasting from two weeks to two months

- Concentrates on maximizing the team’s ability to deliver quickly and respond to emerging requirements

Scrum: a method to keep the agile system development effort focused and moving quickly

- The scrum master coordinates all activities

Extreme programming (XP) promotes incremental development of a system using short development cycles to:

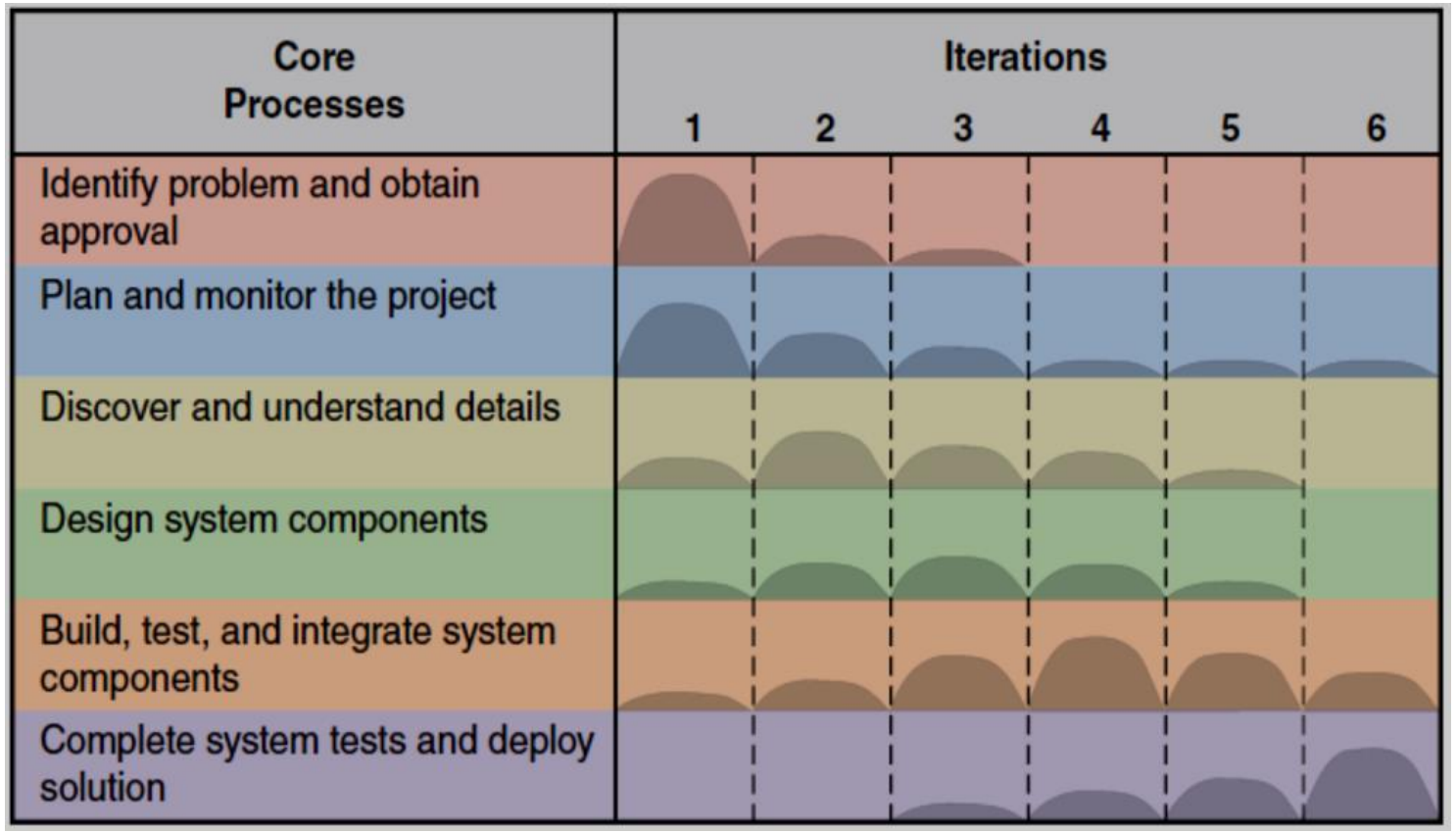
- Improve productivity
- Accommodate new customer requirements

SDLC (Cont'd)

Benefits of Iterative Development

- Core functions can be deployed in early iterations
- Newer technologies can be explored early on to avoid re-architecting system

Iterative and Agile SDLC



Summary

- This course is about developing information systems that solve an organization need
- System development involves 6 core processes, known as the SDLC
- The course will elaborate on the basic concepts introduced in Chapter 1
- Important terminology:
  - Computer application
  - Information system
  - Project
  - Systems analysis
  - System design
  - System development lifecycle (SDLC)
  - Information system development process (methodology)
  - Agile development
  - Iterative development