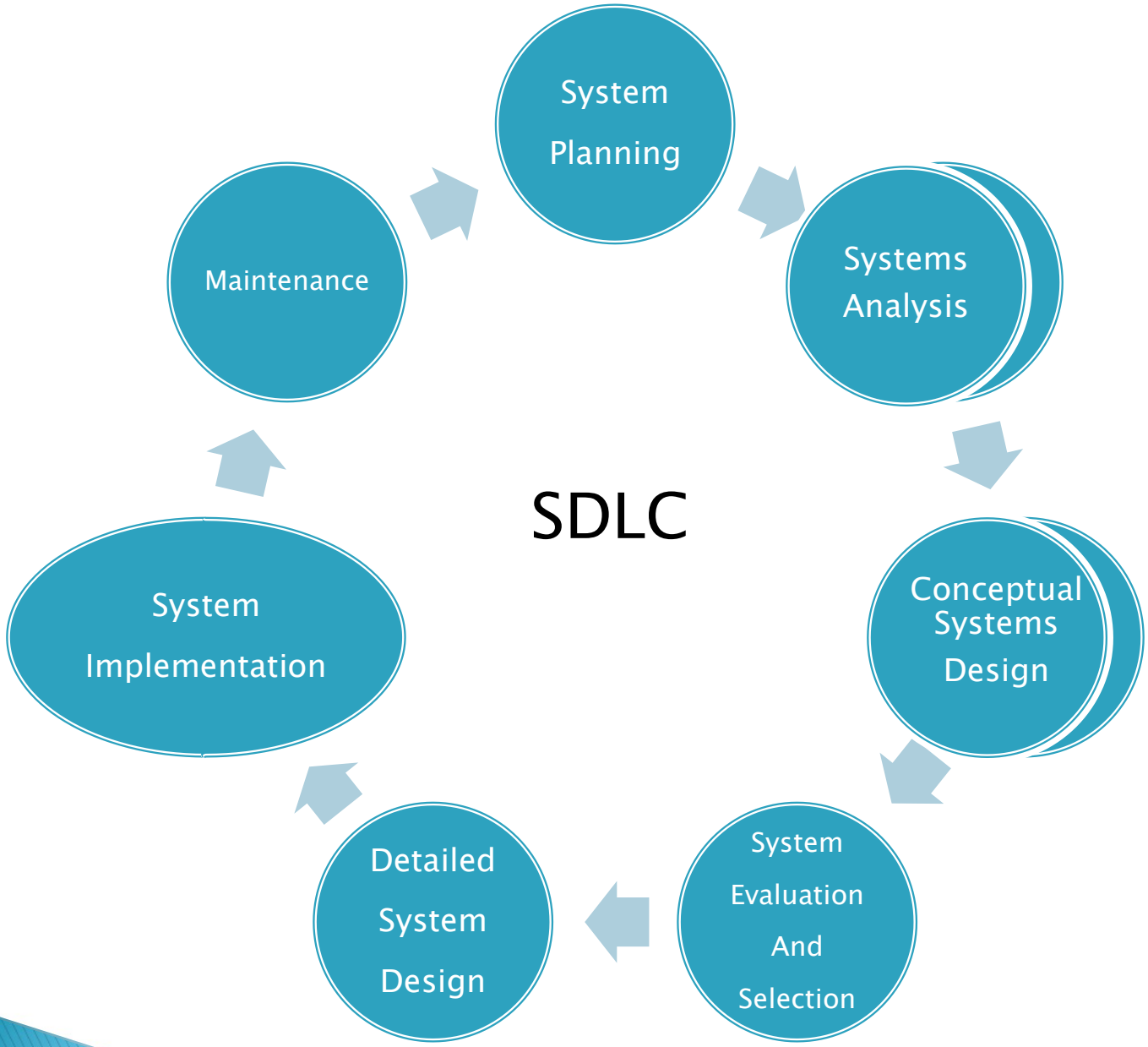
The System Development Life Cycle

System Implementation

Introduction

- The Detailed Systems Design Report contains the blueprint for implementing the output, input, process, database, controls and technology of the new system.
- Systems requiring application programs will undergo a Software Development Life Cycle, analogous to the System Development Life Cycle [software design, software coding, and software testing]


SDLC
System Planning
Systems Analysis
Conceptual Systems Design
System Evaluation And Selection
Detailed System Design
System Implementation
Maintenance

Objectives

- Identify the sources for application software and discuss how to select and evaluate commercial software packages.
- Define the software development life cycle (SWDLC) and discuss each phase (briefly)
- Understand an Implementation plan that includes:
  - Managing an implementation plan
  - Preparing a site for a technology platform
  - Training (system users, operations, managers)
  - System Documentation
  - System Conversion
  - A post-implementation review

The Software Development Life Cycle

Overview

Software design
- this year – structured programming design
- next year – object oriented design

Software coding

Software testing

The Software Development Life Cycle

- software design

The Software Development Life Cycle

- software coding

The Software Development Life Cycle Testing

Describe a software testing scenario and give its purpose:

A software testing scenario involves:

- Developing test cases and testing strategies
- Running the tests
- Reporting the errors detected
- Correcting the errors
- Predicting the level of software reliability

Testing software and removing bugs before the software is deployed reduces the errors that crop up during operations when they are more difficult to fix.

The Software Development Life Cycle Testing

How are test cases designed?

Two basic ways to design test cases:

- White-box testing – focus on the interworkings of the code
- Black-box testing – focus on functionality of the code, what goes in, what goes out, without knowing the details or interworkings of the process.

Create a test case matrix with controlled input and expected output, and actual results.

The Software Development Life Cycle Testing

What should be done when errors occur?

When errors are detected they should be recorded in an Error Report and communicated with the person/people, responsible for correcting and resolving them. Report types:

- Suggestions
- Design Errors
- Coding Errors
- Documentation Errors
- Query

The Software Development Life Cycle Testing

Error Types

- Minor
- Serious
- Fatal

Error resolutions:

- The error is fixed
- The error can not be reproduced
- The error can not be fixed
- The coder disagrees with the testers suggestion
- The error or suggestion is withdrawn
- The error is dismissed because the software works in accordance to the design specifications.

The Software Development Life Cycle Testing

Testing Strategies

- Module – testing the smallest components individually before putting them together.
- Integration – combining modules to make sure they behave as planned
- Systems – testing the software in the context of the total system that it supports.
- Acceptance testing – is the process of allowing both users and operators to test the program to see if it meets their requirement before the program is released and converted to operations.

The Implementation Plan

Objectives

- Understand an Implementation plan that includes:
  - Managing an implementation plan
  - Preparing a site for a technology platform
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Phase 6 Implementation

Managing an implementation plan

Two (big) steps for Systems Implementation:

- Planning – determine the systems implementation tasks are to be performed, and when
- Executing – performs each implementation task

Phase 6 Implementation

Preparing a site for a technology platform

New equipment must be house in an environmentally appropriate save and well-controlled areas.

The site should be prepared prior to the equipment arriving.

Network equipment -> telecom room or network cabinet

Servers -> server rooms

Desktop,laptops -> preparation area

Phase 6 Implementation

Training Programs

- In-house training
- Vendor-supplied training
- Outside training services

Phase 6 Implementation

Training techniques and aids:

- Teleconferencing
- Interactive training software / computer-based training; audio-based training; video-based training; portable media based training
- Instructor-based training
- On-the-job training
- Procedures manual
- Textbook

That is a bit different form help techniques and aids and who are we training? (system users, operations, managers)

Phase 6 Implementation

System Documentation – required to reduce maintenance costs over time. In the long run, maintenance costs will exceed the development costs. Types of documentation:

- User Documentation
- Systems Documentation
- Software Documentation
- Operations Documentation

Phase 6 Implementation

System Conversion

- Direct conversion –
  - Cold turkey – "turn-on" the new system, discontinue the old system.
- Parallel conversion
  - Both systems run at the same time; outputs of each system are compared and reconciled.
- Phase-in conversion –
  - Components or processes are replace over time (segments the processes)
- Pilot conversion –
  - Part of the organization tries out the new system first (segments the organization)

Phase 6 Implementation

A post-implementation review

- Review what went right with the project ;
- Review what went wrong with the project;

Perform this activity both for successful and unsuccessful projects.

Measuring success

On-time delivery

Within Budget

Meet user requirements