

Standards for a Small Project

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Synectics for
Management Decisions,
Inc.



Introduction

- Goal: Become CMM Certifiable
 - More structured approach to SW Development
 - Better, more complete documentation
 - SW Configuration Management tool
 - Purchased IBM Rational ClearCase
 - Policies and procedures
 - Who will write it? Me, I guess.

Documenting the Process

- Everybody agrees it is important, but...
- Nobody wants to do it
- Key:
 - Integrate it into the process.
 - Make it a natural part of the flow.
 - The SW Development Manager makes sure it gets done.
- Result:
 - “Paper” trail for every step in SDLC.

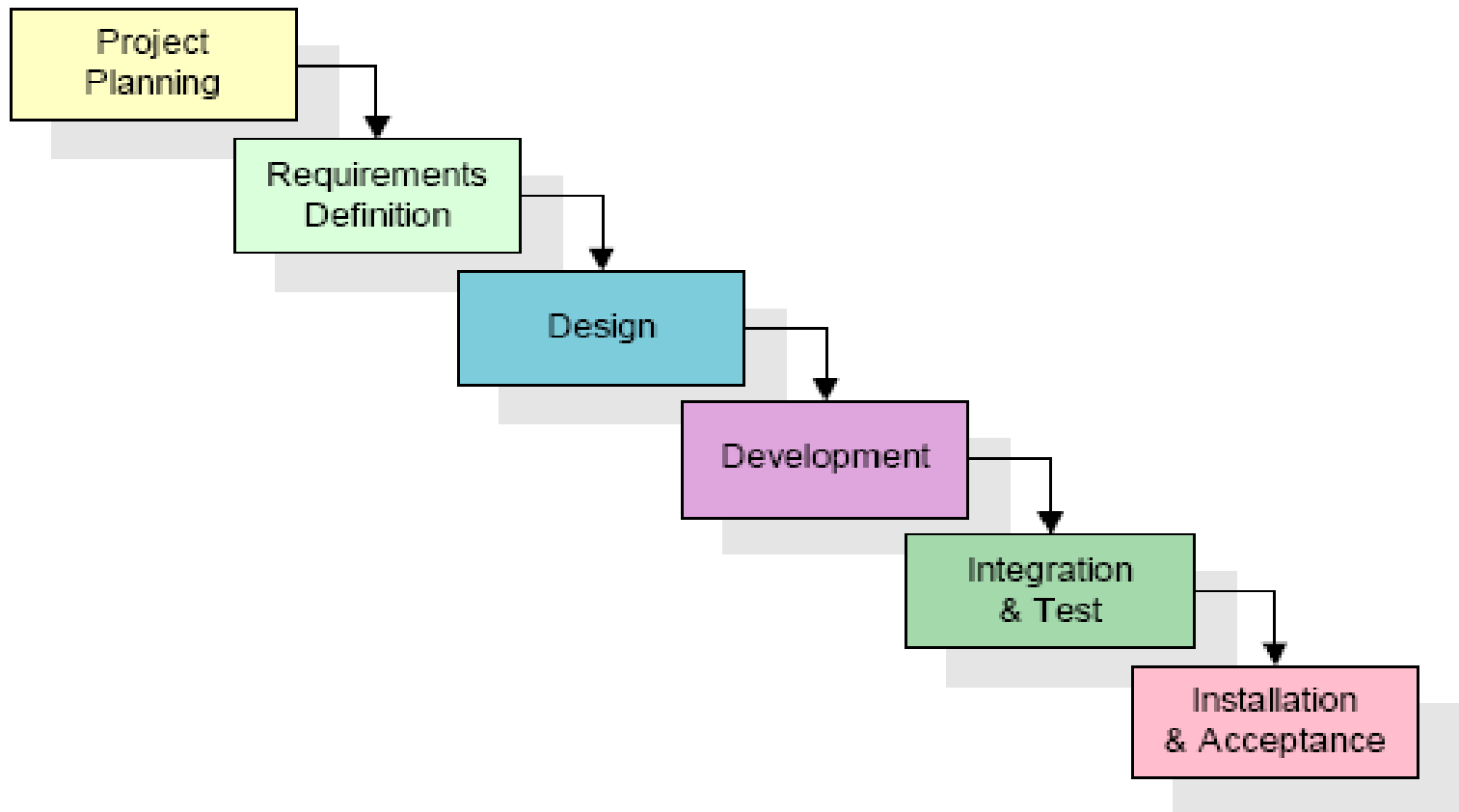
Where to Document?

- Needed:
 - Storage place everyone could get to, even from offsite.
 - Store e-mails, as well as documents or references to documents in ClearCase.
 - Includes date and time stamps and who made the entry.
 - Some security.
- Our solution (for now)
 - Public folder in MS Exchange
 - Accessible from MS Outlook

Personnel

- Contract Project Manager
- Software Development Manager
- Developers
- DBA
- Assistant DBA
- System Administrator
- Assistant System Administrator

System Development Life Cycle



Project Planning a.k.a. Initiation

- Sources
 - Contractual Requirement
 - Client Request
 - Internal Recommendation
 - Bug Report
 - Enhancement Request
- Forms
 - Contract
 - E-Mail Request
 - Action Item from Meeting
 - Telephone Call

Project Planning Mandates

- The software development manager must receive written notice of every new project, large or small.
- The software development manager must approve the project and assign personnel.
- A schedule for the analysis will be set at this time, if relevant.

Requirements Definition

- Sources
 - Project Planning
 - Memo of Understanding
 - Requirements meeting
 - Formal Requirements Analysis
- Forms
 - Project Planning Document
 - Memo of Understanding
 - Minutes of meetings
 - Formal Requirements Document

Requirements Definition Mandates

- The software development manager must certify that the requirements document meets expectations given the type of project.
- The person who initiated the project or her/his designated representatives or successors must concur that the requirements as stated in the document accurately reflect his/her expectations of what the project should accomplish.

Design

- Sources
 - Knowledge of Developers
 - Outside suggestions, articles, white papers, sample source code
 - Formal Design Process
- Forms
 - Check out comments
 - E-Mail or Memo
 - Design Document

Design Mandates

- The DBA must review and approve all database designs.
- The System Administrator must review and approve any design features calling for changes in system configurations.
- The software development manager must certify that the design document if any meets expectations given the type of project.
- Requirement changes or deferrals require concurrence from the person or persons who initiated the project.

Development

- Use of ClearCase Views
- Folders
 - Deleting Files and Folders
- Experimental Development
- Object Code
- Table Upgrades

JDeveloper and Version Control

- Select “Versioning” from the menu bar
- Choose “Select System”.
 - This will place you in the extension manager node of JDeveloper Preferences.
- Choose “Version Control”
- Select the radio button for your Version control tool



- + Environment
- Accelerators
- + Audit
- + Business Components
- + ClearCase
- + Code Editor
- Compare
- Database Connections
- Data Control Palette
- + Debugger
- Deployment
- + Diagrams
- Documentation
- Extension Manager**
- File Types
- Generators
- + Jalopy
- Java Visual Editor
- + JClient
- + JSP and HTML Visual Editor
- + Metrics
- TCP Packet Monitor
- UIX Visual Editor
- Web Browser and Proxy
- WebDAV

Profile: All (Default) ▼

Save As..

Delete

Check for Updates...

Extensions to Use:

- External Tools
- Javadoc Commenter
- Javadoc Generation
- Library Management
- Metrics
- Performance Tuning
- Refactoring
- Search Files
- + UML Modelers
- Version Control
 - CVS
 - ClearCase**
 - Oracle SCM
- + Business Tier Development
- + Client Tier Development
- + Database Tier Development
- + Web Tier Development
- + System Extensions

Functionality of Selected Extension:

Choose for ClearCase version control.

Help

OK

Cancel

Development Procedures

- Identify the source code files.
- Check out existing files, or add the most recent version to ClearCase and check it out.
- Remember to cancel the check out if the file won't be changed.
- Create new files in a ClearCase view, and added to version control when they are complete enough to be usable for testing.
- Write a comment on check out.

Development Good Practices

- Check in all checked out files daily, and after major changes.
- Update development views before beginning work on a development project.
- The main documentation of individual units of source code will be in comments in the source file.
- If there is a standard for documentation of this type of unit, such as Javadoc for Java code, it shall be followed.

Unit Testing Goals

- Ensure that
 - The code responds appropriately to unexpected inputs. It should normally either report an error, or use a reasonable default.
 - The code produces the expected results from all expected inputs.

Unit Testing Mandates

- Executable scripts, and/or a document giving precise step-by-step instructions for implementation of all system changes must be written and unit tested.
- The software development manager must certify that the documentation meets expectations.
- The software development manager must certify that the source code meets expectations.
- All changed files must be checked into ClearCase.
- For larger tasks, a test plan for the entire task shall be written.

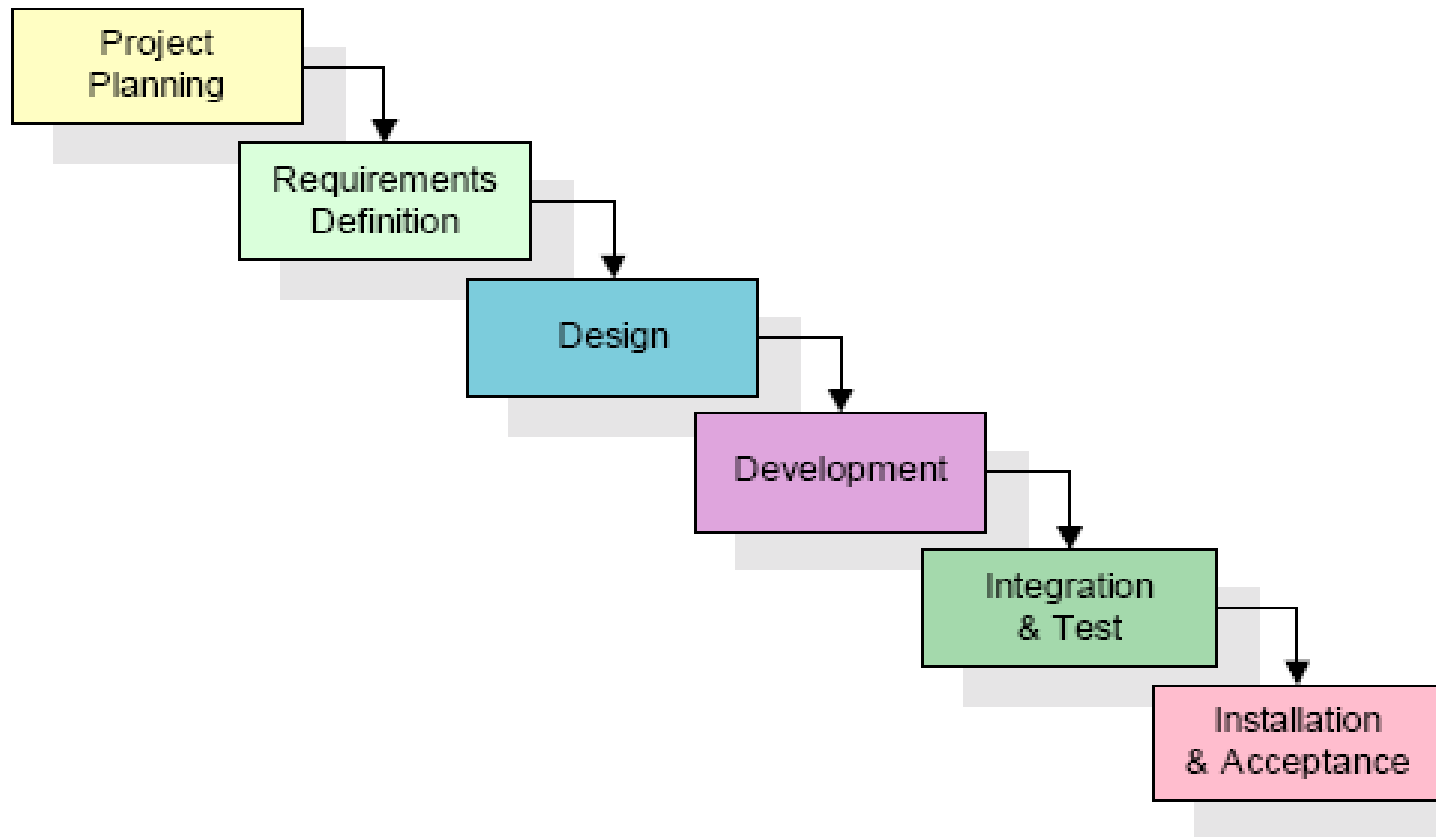
Integration and Test Mandates:

- The software development manager must certify that the software as changed passed all tests satisfactorily.
- The database administrator must certify that all database standards have been followed.
- At the software development manager's discretion, the most recent versions of system source code may be labeled in ClearCase as belonging to a new configuration or system version.

Installation and Acceptance

- Installation
 - Current versions of files marked as production
 - System or system changes are installed in production.
- Acceptance
 - System or system changes are certified in good working order in production.
 - Initiator agrees that system meets requirements as defined in the requirements phase.
 - Does not need to meet all requirements ever identified – these are subjects for ...

System Maintenance



Conclusion

- Use of a version control tool, to help us save old versions, keep track of the latest versions, and share our source code.
- Clear definition of project responsibilities.
- A paperless trail of documentation for each development task
- Better management control.
- Better quality control.

Stay in Touch

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