

Software Project Management

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Agenda

- Software project Concept
- Software Project Management Basic Concept
- Managing Software Project Management
- Improving Software Project Management

What is Software Project

- Software Project doesn't mean developing application
- Several types of Software Project
 - Application development
 - One-offs / bespoke systems
 - Off-the-self application
 - Customized off-the-shelf application
 - Process and System Engineering Service
 - System Integration service
 - Vertical
 - Horizontal
 - Consulting services
 - Installation and training services

Managing Software project

- The Project Manager
- The Project Stakeholder

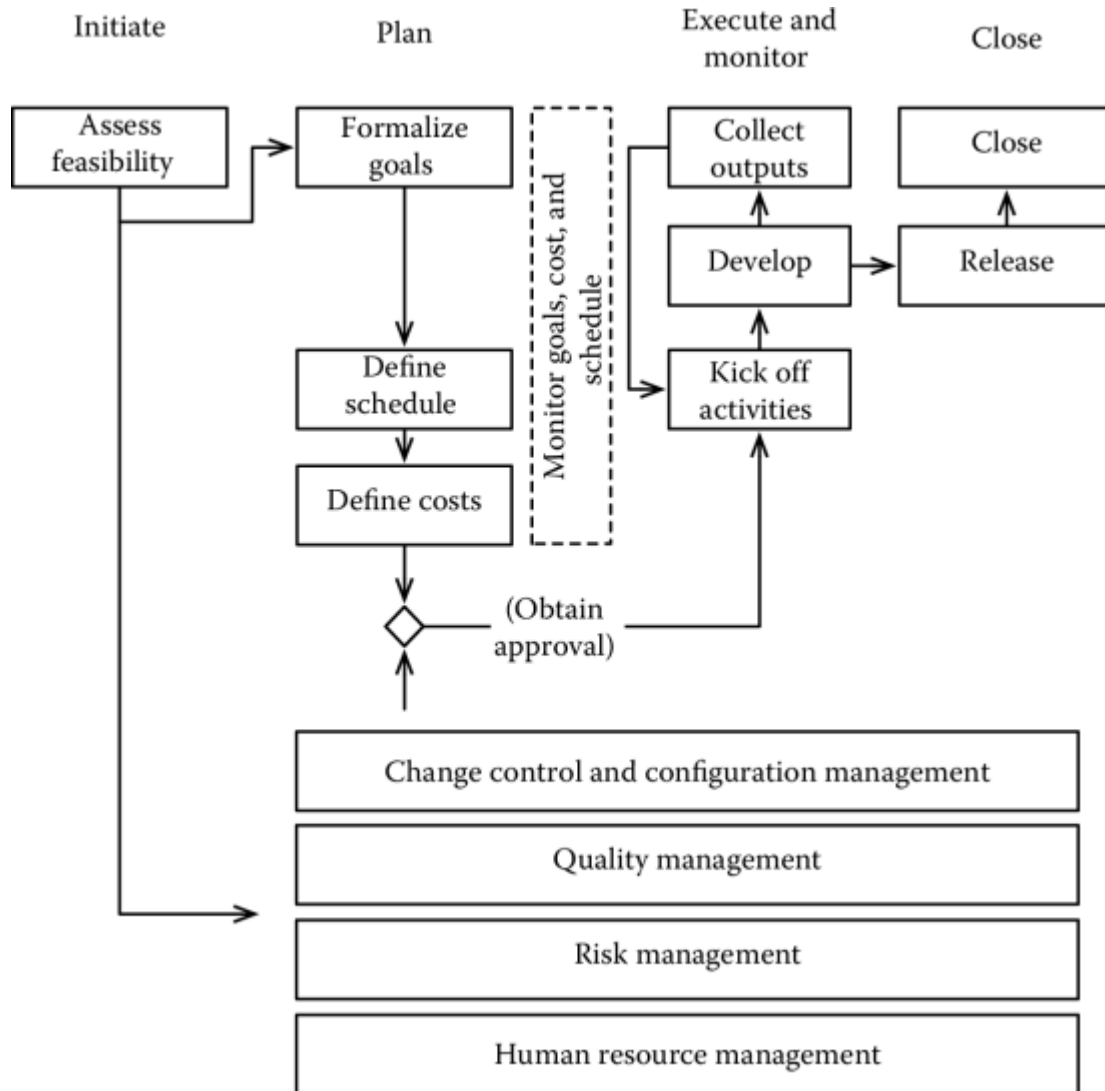
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project stakeholder as any individual or an organization that is actively involved in a project, or whose interest might be affected as a result of project execution or completion. (PMI, 2004)

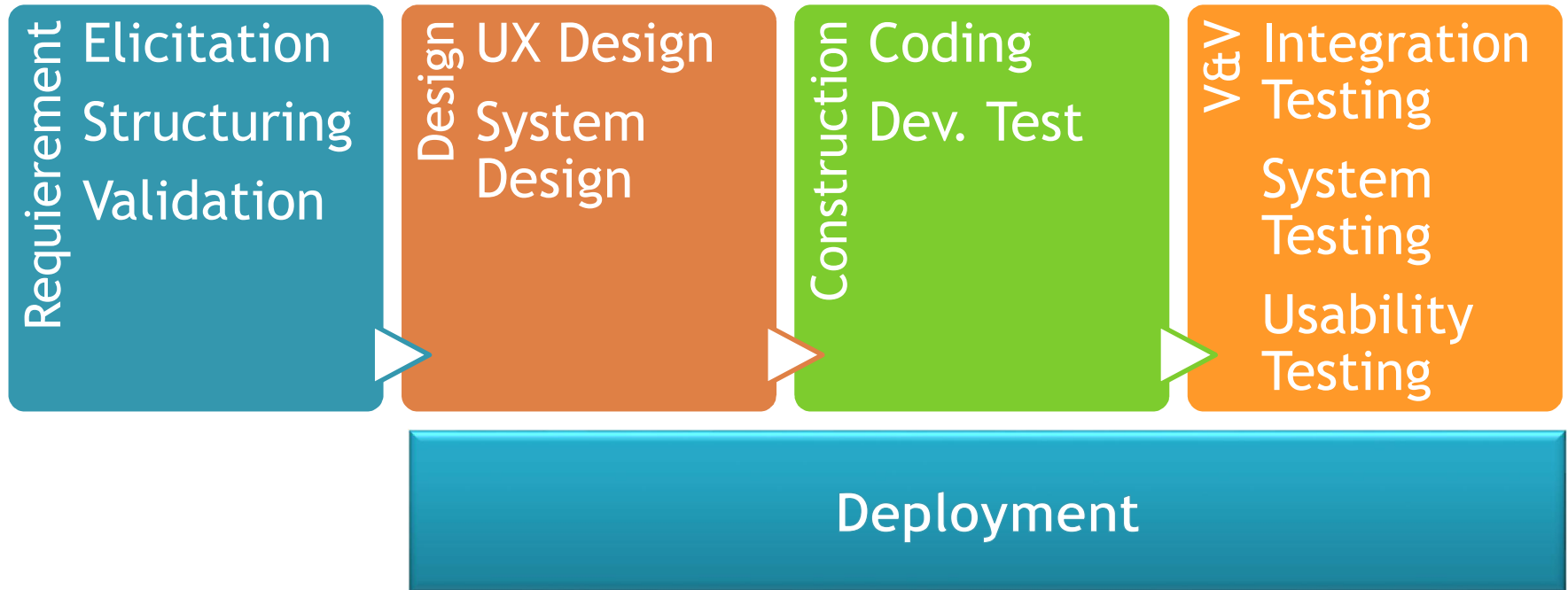
“Does ‘high-rise’ refer to the building or the budget?”

Software Project Management Activities Diagram



(Villafiorita. 2015)

Managing Software Development Lifecycle Process



Requirement Engineering



Elicitation

- the activity during which the list of features of a system are elicited from the customer.
- can be performed with interviews, workshops, or the analysis of existing documents

Structuring

- Identifiable
- Organized
- Annotated

Validation

- Inconsistencies
- Incompleteness
- Duplicates

UX Design

User-centered analysis

- In parallel with requirement
- Profile the user
- Analyze the task
- Define the styles



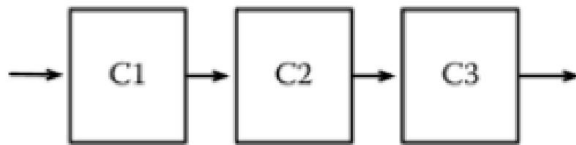
User-centered design

- Storyboard
- Mock ups
- Prototypes

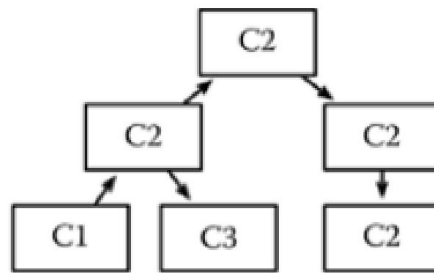
System Design

System Architecture

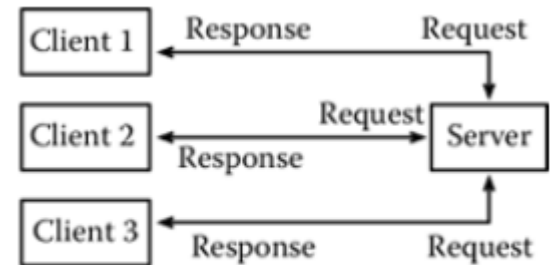
- Pipe and Filter Architecture
- Layered Architecture
- Client Server Architecture



A pipeline architecture



A layered architecture



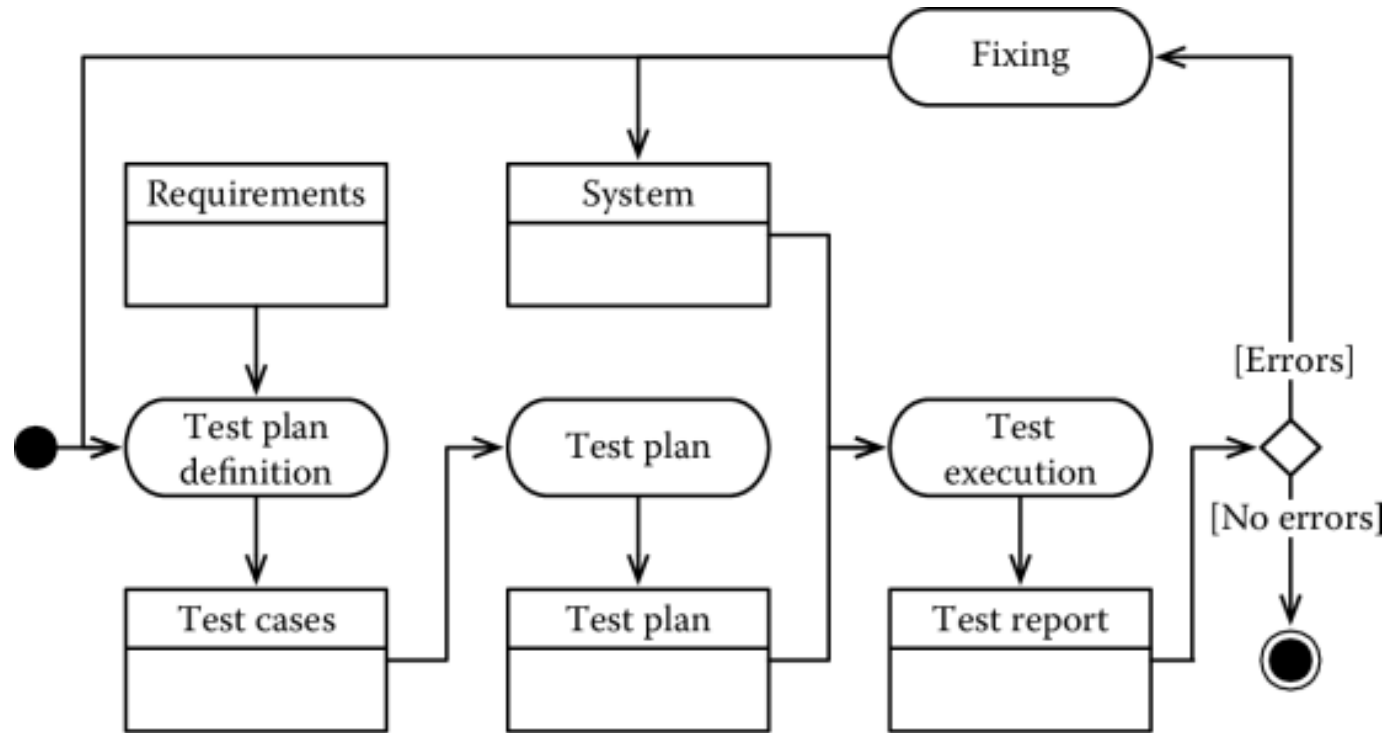
A client-server architecture

Construction

- Choosing Productivity tools
- Measuring software metrics
- Applying coding standards
- Unit Testing

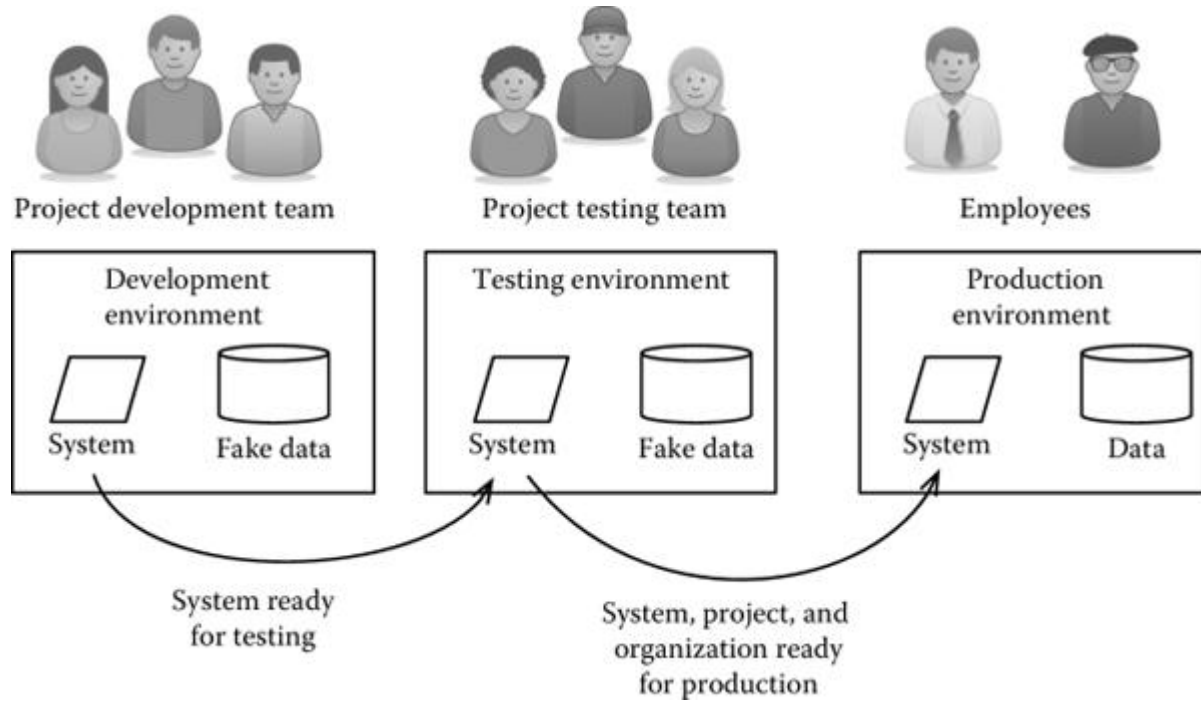


Validation and Verification



(Villafiorita, 2015)

Deployment



Villafiorita, 2015

Migration Strategy

Cut-Over

Parallel approach

Piloting

Phased



Closing A Software Project

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graph LR; A[Perform Data Migration] --> B[Installing a new system]; B --> C[Setup Support Infrastructure]; C --> D[Training Delivery]
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Perform Data Migration

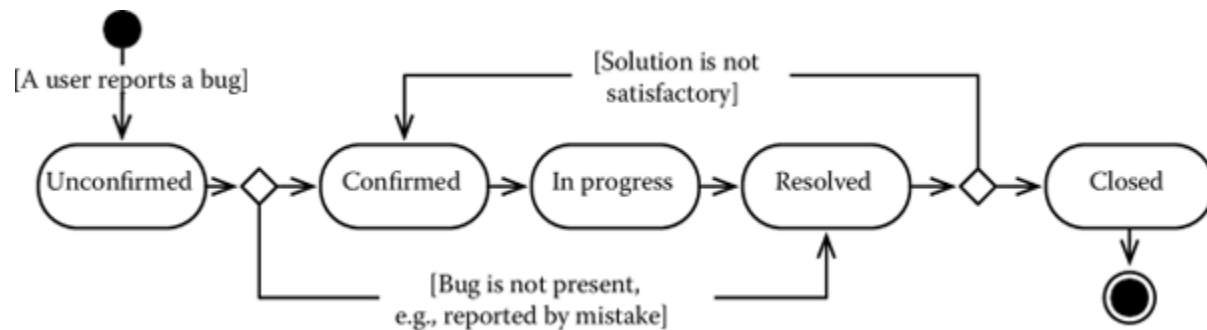
Installing a new system

Setup Support Infrastructure

Training Delivery

Operation and Maintenance Management

- Supporting and Monitoring
 - Providing technical support
 - System Monitoring
- Maintenance (ISO/IEC, 2006)
 - Corrective
 - Preventive
 - Adaptive
 - Perfective



Improving software project

● People-Process-Project Triad



Source: G. Weinberg, Quality Software Management, Vol. 3

$$E = C[M(T)]$$

where

E = net effectiveness (0-1)

C = communication ability and skills (0-1)

M = management concept awareness (0-1)

T = technical ability (0-1)

$$E = CM(CS) \tag{17-2}$$

where

CM = a combination of communication skills and management concept awareness, and

CS = computer science technical ability.

Key points

- Software development project management is to manage SDLC on management point of view
- Project Manager is the 'spear-head' of a Stakeholder
- Improving software project means: effectiveness and efficiency of the project

References

- Villafiorita, A. 2015. Introduction to Software Project Management. Auerbach Publications.
- Jensen, W.R. 2014. Improving Software Development Productivity: Effective Leadership and Quantitative Methods in Software Management. Prentice Hall.