9/11/2020

9 to 13 => Software Engineering
13 to 25 => DevOps (Pradeep Sir)
26 to 27 => Software testing (Vijay Sir)

Software Engineering

↓

Set of Programs
~~Produ~~procedures
documentation
data, etc

Software

application
- Ex any application that is running in our software.
& it is used by user
Ex VLC, etc
→ Needs to be installed

System
- Drivers
- used for operating computer softwares.
- already installed

Imp

Sw Engineering => application of systematic, disciplined quantifiable approach to development, operation & maintenance of software.

Unique Characteristics of Software

1. Malleable → can be made/shaped accord^n to requirement
2. human-intensive
3. Intangible → (cannot be touched) & hard to measure
4. Complex
5. Hardware
6. Doesn't ~~wear tear~~ rust → physically can not be.

Software Requirement Specifications (SRS)

→ Designed/documented accord^n to the requirement of its client

⇒ Requirements

1. Process → shared understanding of the problems
2. Product → Product of the Process ie, Documentation

⇒ SRS is about basically what does my project consist of
not
~~does~~ How project is to be done (process ~~etc~~)

S – ~~Speci~~ ~~Sepi~~ Specific
M → Measurable
A – Achievable
R → Reliable / Realistic
T → Timebound

Requirements Specification

① Non Functional ② Functional

→ what is going to be the behaviour of the system
→ Includes Process Requirements

Software Eng tools → Technical GDs
→ ~~Codenvy~~
↳ Requirement Elicitation Topic

① CloudEnvy →
② GroupHub
③ Docker
④ Leankit
⑤ ZOHO creator →

The Essence of Practice Imp.

① Understand the Problem → stakeholders, unknowns (assumption), compartamentalized analysis model Representation.
② Plan a Solution
③ Carry out the plan → ~~compo~~ does the component meet req. the real coding (testing)
④ Examine the result for accuracy

10/11/2020

~~Incremental model of software~~

Incremental Model of Software → model 2

(Homework)

WRSPM model →

for CCEE
→ Software ethics
→ Requirement Elicitation
→ SQA management

Phases of SDLC

→ Planning ← defines the
↳ Analysis
↳ Design
↳ Development
↳ Testing
↳ Implementation
↳ Maintainence

Planning

~~① Planning~~ ① What is the system to be developed.

② Scope of the Project

③ Develop of Project Plan

Analysis — Business Requirement

Design — Technical Architecture
System Model

Development — Database
Coding

Testing – Testing is done in this phase

Implementation – Completion of User Documentation

Maintainance – Phase when you need help Desk.

#

Scope Creep → Designed Scope is something but it is not satisfied

Scope Creep → occurs when Scope is something and planners keeps increasing scope

Feature Cr

↳ where you keep on adding additional features which are not the part of initial planning

#In Development Phase

→ task
→ Resources
→ time constraints

Analysis – aka Feasibility Phase

→ Involve Users and IT specialist to make the documentation of Project

→ ① Business Requirement Gathering

② Prioritize the Requirements

↳ document

Requirement Definition Document

Design Phase

① technical Architecture
↓
what Hardware, Software & equipments are reqquired

② System model Designing
↓
Graphical Representation of Design is System Modelling

Developement Phase

→ ER Diagram
→ Mapping tables in Database
→ take all of the details & designs and start building the actual system (Database & Programs)
⇒ before testing

Testing Phase

→ verification of the system.

① Write Test Conditions ② Perform testing

Types

① Unit testing → Individual unit of code is tested
② System testing →
③ Integration → Combined units are tested
④ User Acceptence →

Implementation Phase

- System is distributed to all the knowledge workers / people at the end user part / customers) and they start using & checked whether system meets Requirement

① **Detailed User Documentation** :- Guidlines how to use the system

② **Boarding training** :- Workshop training or online training or video is provided to use the product.

Types

① Parallel
② Plunge
③ Pilot
④ Phased

① **Parallel** :- Implement 2 systems simultaneously old and new

② **Plunge** :- Discard the old system completely & use the new system

③ **Pilot** :- Start with small group of people ~~unit~~ initially and then it increasing gradually accord^n to the user acceptance

④ **Phased** :- Implementation on different phases. of the product (entire project)

Maintenance Phase

When you monitor and support new system to meet the ~~test~~ user requirements.

① Building Help Desk
↳ Customer Care → ex

② Provide an environment to support the changes.

⇒ Planning + Analysis ⇒ aka Requirement ~~Pet~~ Phase

SDLC Models Software Development lifecycle

Imp → Frameworks that describes the activities performed at each stage of Software Development Project

1. Waterfall
2. Incremental Model
3. V-Model
4. Spiral model
5. LEAN
6. Agile Model
7. Prototyping
8. Sashimi
9. DevOps

⇒ All these models are classified in 2 classification

- Predictive Vs Adaptive
- Incremental Vs Iterative

① Predictive Vs Adaptive

→ Predictive → good understanding of problems, changes are not expected

Adaptive → Not 100% sure. based on feedback improvement is done on the new system.
↳ whenever feedback is involved after every build

② Incremental Vs Iterative

Incremental → have fairly good idea about the Requirement.
Process of building is incrementing in Phases & individual phases can be used differently

Iterative - Additional things are done on the same (old) models. (Enhancing current model)

Imp
③ Incremental and Adaptive Iterative ⇒ Agile Model
④ or sometimes none

↓
inside a model there is another model.

SDLC Models

1) Waterfall
2) Incremental
3) V-shaped
4) Sashimi
5) Spiral
7) LEAN
8) Agile
9) Prototyping
10) DevOps