

المفردات

Control and system Department
Software Engineering Subject
Fourth Year Computer Eng.
Fourth Year Mechatronics Eng. Theoretical : 2Hrs/week (semester)

1. THE PROCESS AND PRODUCT 2(Hrs.)

2. CONVENTIONAL METHODS FOR SE. 10(Hrs.)

[SYSTEM Eng - Analysis Concepts and principles - Analysis modeling]

[Design concepts and principles - Architectural design - User interface design - Component design]

[S/W Testing Techniques - S/W Testing Strategies - Technical metrics for S/W]

3.OBJECT ORIENTED S/W ENG.: 8(Hrs.)

[object oriented concept and principle - object oriented analysis - object oriented design - object

oriented testing - Technical metrics for object oriented systems].

4.SOFTWARE PROJECT MANAGEMENT: 10(Hrs.)

[project management concepts - S/W process project metrics - S/W project planning - risk analysis

and management - project scheduling and testing - S/W quality assurance - S/W configuration and management].

المصادر

References

1 Software Engineering **A practitioner's approach**

ROGER S. PRSSMAN

2nd Edition ADDISON WESLEY :: 4th Edition MCGraw Hill 1997 2

SOFTWARE ENGINEERING

Martin L.Shooman

3rd 6th printing 1988

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المحاضرة الاولى

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Definition (1):

The establishment and use of sound engineering principles in order to obtain economically software that is reliably and works efficiently on real machines

Definition (2):

It is the process by which the quality software is produced. The quality software

must achieve the following characteristics :-

1. quality software performs precisely as required under all circumstances.
2. quality software is entirely bug free.
3. quality software is delivered on time.
4. quality software is delivered within budget.

A GENERIC VIEW OF SOFTWARE ENGINEERING

Definition Phase

Development

Phase

Maintenance

Phase

The software process contains three generic phases which are:-
definition phase , Development phase , Maintenance phase

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Software Life Cycle model

1. The classical life cycle model
2. The Rapid prototype model (prototyping)
3. The Fourth generation techniques (4GT).

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Requirment Analysis

Client Analyst

Problem
precise specification of
the problem Designer
Customer

+

User

Analysis tasks

Analysis Principles

□ **Problem recognition**

□ **Evolution and solution**

synthesis.

□ **Specifications.**

□ **Review.**

1. The information domain , as well as the functional domain, of the problem must be represented and understood.

2. The problem must be partitioned in a manner that uncover detail in a layered or hierarchical fashion.

3. Logical and physical representations of the system should be developed.

Information Domain

Partitioning

Information Flow

Information Contents

Information structure

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Requirments Analysis Methods

Data Flow Oriented Analysis Methods

Data Flow Diagram (DFD)

Examples:-

1. Home Safe system.

2. Temperature control system.

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المحاضرة الرابعة

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Data Dictionary

Abstruction

Information hiding

Modularity Reduce complexity

Extended Backus-Naur Form(EBNF)

Examples:-

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