SRINIX COLLEGE OF ENGINEERING, BALASORE

**DEPARTMENT OF
COMPUTER SCIENCE & ENGINEERING**

ASSIGNMENT ON

SOFTWARE ENGINEERING

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Assignment-I

1. (i) What are the major differences between system engineering and software engineering? State explains the stages that distinguish the two. [8]

(ii)Explain with two examples of software development projects would be amenable to evolutionary prototyping. Why is evolutionary prototyping suitable in these cases? [8]

2. Explain Water fall Model. What are the problems that are sometimes encountered when the waterfall model is applied? [16]

3. (i) Which is more important-the product or process? Justify your answer. [8]

(ii) With suitable illustration explain SPIRAL model evolutionary software development. [8]

4. (i) Explain the Evaltionary and Incremental Model. What are the Advantages and Disadvantages?

(ii) Write a short notes an System engineering and Computer based System. [8]

5. Explain System Engineering hierarchy.What are the restraining factors to construct a system model? [16]

6. (i) Explain Component Based Development model in detail. [8]

(ii) How do you differentiate software engineering from system engineering? [8]

7. Explain in detail the following s/w process models with a neat diagram.

i) Evolutionary process model. [8]

ii) Incremental Process model. [8]

8. Explain the spiral model? What is the task region in the spiral model? How does the customer wins by getting the system or product that satisfy the majority of the customer's needs and the developer wins by working to realistic and achievable budgets and deadline? [16]

9. What are the necessities of Life cycle model? Elaborate on the various issues of Software life cycle. [16]

10. (i) How does system engineering differ from software engineering? Also write brief notes on computer based system and system engineering hierarchy. [8]

(ii) Differentiate product engineering and business engineering overview [8]

Assignment-II

1. Explain software prototyping? What are the various prototyping methods and tools? [16]

2. (i) Why is traceability an important aspect of requirement management? Why context system models are
useful for requirements validation? [8]
(ii) What is requirement engineering? State its process and explain requirements elicitation problem. [8]

3. Explain with example diagram the functional and behavioral modeling. How do we model the software's
reaction to some external event? [16]

4. (i) How to select the appropriate prototyping approach? Explain. [8]

(ii) Explain about the cardinality and modality with suitable example. [8]

5. Explain in detail about all modeling technique in software requirements. [16]

6. (i) Explain about rapid prototyping techniques. [8]

(ii) Differentiate functional and nonfunctional requirements. [8]

7. Why customer iteration is difficult process? Explain one formal procedure used for customer interaction.
8. Draw an ER and DFD diagram for university information System. [16]

9. (i) Describe the primary difference between structured analysis and object oriented analysis. [6]
(ii) Write a detailed note on scenario based modeling. [10]

10. (i) Compare functional and behavioral models. [4]

Assignment-III

1. Explain the fundamental software design concepts in detail. [16]

    2. Explain the following
    (i) SCM repository [8]
    (ii) SCM process [8]

    3. (i) Draw a translating diagram for analysis model into a software design. Brief about each translations. [8]

    (ii) Give a complete template for documentation design specification. [8]

    4. (i) How interrupts are handled in real time system? Explain. [8]
    (ii) Explain in detail about the real time systems. . [8]

    5. (i)Define the concept of cohesion and coupling. State the difference. [4]
    (ii)Briefly explain the use of global variables in context of coupling cohesion? [4]
    (iii)What are different types of architectural styles exist for software and explain any one software
    architecture.

    6. What is transform mapping? Explain the process with an illustration. What is its strength and weakness?

    7. i) Explain about the various design concepts considered during design? [8]
    ii) Write short notes on user interface design process? [8]

    8. What are the different types of architectural styles exist for software and explain any one software architecture in detail. [16]

    9. i) Explain data architectural and procedural design for a software. [8]

    ii) Describe the design procedure for data acquisition system. [8]

    10. Describe decomposition levels of abstraction and modularity concepts in softwareDesign.

Assignment-IV

1.i) Explain the testing objectives and its principles. [8]
   (ii) Explain the basis path testing in detail. [8]

2. (i) What is the need for software maintanance and maintenance report. [8]
(ii) What are the attributes of the good test? Explain the test case design. [8]

3. (i) What are all formulas for cyclomatic complexity? Calculate cyclomatic complexity for greatest of all these numbers. [8]

(ii) How the RST condition is verified in black box testing? Explain with example. [8]

4. (i) What is the necessity of unit testing? Write down all unit test considerations. [8]
(ii) Explain about system testing. [8]

5. Write a note of
(i) Black box testing. [4]
(ii) Regression testing. [4]
(iii) White box testing [4]
(iv) Integration testing. [4]

6. Why is it so important to include boundary values in your black-box test data? Illustrate with examples
in which a test suite developed using black box techniques might give the impression that 'everything is OK", while a test suite developed with whit box testing techniques (for example, branch coverage) might uncover a fault and vice versa. [16]

7. (i) Discuss the differences between black box and white box testing . [8]

(ii) Explain the different integration testing approaches. [8]

8. (i)Discuss how these testing models may be used together to test a program schedule. [4]

(ii) What do you mean by system testing? Explain in detail [4]
(iii) Explain boundary value analysis. [4]

(iv) Justify the importance of testing process [4]

9. (i)Discuss in detail about alpha and beta testing. [8]
(ii)What do you mean by integration testing? Explain their outcomes. [8]

10. Explain the integration testing process and system testing process and discuss their outcomes:
(i) What do you mean by system testing? Give a case study of a system testing
for operating system? [8]
(ii). What do you mean by boundary value analysis? Give two examples of
boundary value testing. [8]

Assignment-V

1. i) Explain about CASE repository functions in detail. [6]
(ii) Discuss on the various method encountered in cost estimation.

2. (i) Explain in detail about Delphi technique. [6]
(ii) Discuss in detail about software software evaluation. 10]

3. (i)What are the different activities in project planning. 12]
(ii)What is error tracking? Discuss. [4]

4. (i) Brief about 3D function point measures. [8]
(ii) How to measure quality and defect removal efficiency. [8]

5. (i)How to compute a task set selector value for a project? [8]
(ii)Brief about taxonomy of case tools (at least eight) [8]

6. (i) What are the upper and lower CASE tools? What is the purpose of upper-CASE tools? [6]
(ii) Explain in detail the COCOMO model. [10]

7. (i) Describe about software equation. [8]
(ii) Describe about the constructive cost model in detail. [8]

8. (i) Explain in detail about the maintenance process [8]
(ii) Discuss in detail about software evolution. [8]

9. Describe two metrics which are used to measure the software in detail. Discuss clearly the advantages and disadvantages of these metrics. [16]

10. (i) Justify the statement "Software maintenance is costlier". [8]

(ii)Discuss the concept of software maintenance process. [8]

11. (i) Brief about 3D function point measures. [8]

(ii) How to measure quality and defect removal efficiency (DRE). [8]

12. (i) How to compute Task Set Selector(TSS) value? Explain. [8]

(ii) Brief about taxonomy of CASE tools (at least eight) [8]

13. i) Explain the scheduling of software project. [8]

ii) Explain task network. Construct a schematic task network for concept development project.