

Programme: - MCA-Semester-IV

Subject Code 401

UML and Design Patterns

Assignment No.1

What is component and deployment diagram? Explain with suitable example.

Assignment No.2

What is pattern? Explain types of pattern.

Assignment No.3

Write a short note on the following

- a) Observer
- b) Multiplicity

Assignment No.4

Write a short note on the following

- a) Component diagram
- b) Singleton

Assignment No.5

Illustrate intent, use, structure and participants of command design pattern.

Assignment No.6

What is role of use-case diagram in UML? Describe various relationships in it.

Assignment No.7

Explain with example chain of responsibility pattern.

Assignment No.8

Explain classes, objects, interfaces and their relationship in class diagram.

Assignment No.9

Explain Singleton Pattern. Explain use of this pattern.

Assignment No.6

Write short notes on the following:

- a) Aggregation and composition
- b) Prototype design pattern

Assignment No.10

Explain the intent of bridge pattern. Draw its structure and explain the role of participant.

Subject code 402
UNIX and Linux Internals

Assignment No.1

Explain the concept of Buffer Cache in detail. List advantages and disadvantages of using buffer cache.

Assignment No.2

What do you mean by a Shell? List different Shells available in Linux / Unix. Explain different features of BASH Shell.

Assignment No.3

Differentiate between the following:

- a) Hard Link vs. Soft Link
- b) C programming vs. Shell programming

Assignment No.4

Write an Interactive and well documented C Program under UNIX / Linux to read and display a text file.

Assignment No.5

Explain the Internal Structure of FILES in UNIX. What is an inode? Explain the role of inode in accessing and deleting a file?

Assignment No.6

What is the need for Swapping? Write description of Swapping Algorithm.

Assignment No.7

Write a short note on any two of the following

- a) U Area
- b) Disk Drivers

Assignment No.8

Write a short note on any two of the following

- a) Terminal Drivers
- b) Piping concept

Assignment No.9

What are different data structures involved in memory management subsystem? Explain how they work cohesively to provide memory management services in UNIX/Linux.

Assignment No.6

Write a short note on any two of the following

- a) Super Block
- b) 'init' process

Assignment No.10

Explain the booting procedure of UNIX/Linux operating system in details.

Subject code 403

I.T. E-I Theory of Automata

Assignment No.1

Define the relation. State various properties of relations.

Define the terms natural and formal language.

Assignment No.2

Differentiate between

- i) PDA and Post machine
- ii) Finite automation and PDA

Assignment No.3

Write a short note on the following

- a) Syntax analysis
- b) Moore Machine

Assignment No.4

Write a short note on the following

- a) Post Canonical System\
- b) Regular Expression

Assignment No.5

Design Mealy machine to find out 2's complement of a given binary number.

Assignment No.6

Explain Chomsky Hierarchy of grammars.

Assignment No.7

Write a Markov algorithm to find 1's complement of a given binary number.

Assignment No.8

Design TM to find 2's complement of given binary number.

Assignment No.9

Explain Chomsky hierarchy of grammars in details.

Assignment No.10

Construct a PDA accepting the following language $L = \{a^n b^n \mid n \geq 0\}$

Subject code 403

I.T. E-I Data Warehousing and Data Mining

Assignment No.1

Define a Data Warehouse and explain its characteristic.

Assignment No.2

Write short notes on the following

- a) K-means method
- b) Rough sets

Assignment No.3

Compare Data warehouse Vs Operational Systems.

Assignment No.4

Explain with example a multidimensional Data model.

Assignment No.5

Write short notes on the unsupervised learning

Assignment No.6

Explain the term Data Integration and Transformation.

Assignment No.7

Explain Apriori algorithm (Using Candidate Generation)

Assignment No.8

Explain Snowflakes with example for multidimensional databases.

Assignment No.9

Explain the differences and similarities between databases and data warehouse.

Assignment No.10

What is data mart? Explain the different types of data marts.

Subject code 403

I.T.-E-I-Embedded Systems Concepts & Modeling

Assignment No.1

What is an embedded system? Explain the requirements and categories of embedded systems.

Assignment No.2

What is semaphore? Explain in detail.

Assignment No.3

Write a short note on the following

- a) Wireless Networking
- b) Distributed computing

Assignment No.4

- a) Differentiate between Embedded Operating System and Real Time Operating System.
- b) Explain Digital Signal Processing System with its block diagram.

Assignment No.5

Write a short note on the following

- a) Digital Signal Processing
- b) 8- bit microprocessor

Assignment No.6

Differentiate between Embedded operating system Vs Real time operating system

Assignment No.7

Differentiate between Micro - processor Vs Micro - controller

Assignment No.8

Soft real time system Vs Hard real time system.

Assignment No.9

Describe IEEE 802.11 protocol in detail.

Assignment No.10

Write a short note on the following

- a) VLSI
- b) Parallel Programming

Course No-404

I.T.-E-II-Programming with STL

Assignment No.1

Why STL? Explain sequence containers.

Assignment No.2

Explain in detail how namespaces helps in modularization.

Assignment No.3

What is STL? Explain sequence containers in detail.

Assignment No.4

What is an iterator? Explain forward interior.

Assignment No.5

Explain with example, how function object differ from function pointer.

Assignment No.6

What is queue adaptor? Explain use of queue adaptor with example.

Assignment No.7

What is difference between mutating and non-mutating algorithms? Explain any three mutating sequence algorithms.

Assignment No.8

Write a short note on the following:

- a) Unnamed namespaces
- b) Allocators

Assignment No.9

Write a short note on the following:

- a) Predicate functions
- b) `std::stack`

Assignment No.10

What is exception handling? Explain try and catch block.

Assignment No.1

Discuss different locking mechanisms supported by SQL server.

Assignment No.2

Differentiate between Stored Procedures and Stored Functions. Illustrate with suitable example.

Assignment No.3

Write a short note on the following.

- a) Security Mechanisms
- b) Data Types in SQL Server
- c) Codd's Rules with reference to SQL server.

Course No-404**I.T.-E-II-Embedded System Design and Programming****Assignment No.1**

Explain the various development tools for embedded system.

Assignment No.2

Explain the Programming languages for embedded system.

Assignment No.3

Write short notes on Any Two

- a) .Bit oriented instructions
- b) Target hardware platform
- c) TMOD

Course No-405**BM E-I-Marketing Management****Assignment No.1**

What are the approaches under the study of marketing? Which approach do you think is the best? Why?

Assignment No.2

Explain market entry strategies suitable for marketers of electronic goods in India

Assignment No.3

Write short notes on the following:

- a) Types of marketing control
- b) Marketing organization

Assignment No.4

Write short notes on the following:

- a) Buying motives
- b) Components of marketing plan

Assignment No.5

“Marketing begins with identification of consumer needs and wants and ends with consumer delight”. Explain with example.

Assignment No.6

What is Marketing Research? How will you study market potential for cyber café in rural India? Explain in detail.

Assignment No.7

What is market segmentation? What are the parameters for segmenting the market for:

- a) Furniture
- b) Card

Assignment No.8

‘Marketing Planning precedes marketing control’ justify by citing example.

Assignment No.9

Write short notes on the following:

- a) Sales audit
- b) Product life cycle

Assignment No.10

What is Target Marketing? Develop an effective target marketing plan for marketers of

- a) Air travel services
- b) Computer training centre

Assignment No.1

Define Managerial Economics. Discuss scope of Managerial Economics

Assignment No.2

Define 'firm' what are various types of Firm?

Assignment No.3

Write short notes on Any Two

- a) Cross Elasticity of Demand
- b) Income Elasticity of Demand
- c) Demand Curve