

Date | | | | |

Sa Su Mo Tu We Th Fr

Artificial intelligence



1. slide-1 (Ind) (Theory)

2. slide (Search) \rightarrow 1 set (BFS, DFS, A*, IDA*)
(SMA) \rightarrow (NO need)

3. slide-4 (Proposition logic) \rightarrow 1 set (Truth table, logical inference, logical equivalence, POPL)

4. slide-3 (Local search) \rightarrow 4th set
(simulated annealing, hill climbing, constant satisfaction problem,

planner, partial planner, logical QSR

slide 6: ~~Ex. Bayesian~~. Bayesian - 1 set (Bayes rule, Example, joint probability, Bayesian network, decision network)





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slide-7 (Decision tree)-1 Set

(Decision tree, ID₃, CART algorithm)

slide-8 logical description

Basic Definition,

current best hypothesis with example,

least common search (version space
algorithm ZEST)

Cryptography

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Ch-1

definition, Application of security

PURPOSE

1.3 → security attacks

Table (1.2) (security services)

1.7 → attack surface, Attack tree

Ch-2 (no need)

Ch-3

Figure 3.1 and explanation

cryptography (→ বিষয় অধ্যয়ক্ষণ)

cryptanalysis and brute force attack

computationally secure and unconditionally

secure

compute করতে গেলে মানব (ন্য)





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Cipher cipher, monoalphabetic cipher

Transposition cipher, substitution cipher

3.5 (only definition)

ch-4

4.4 → the strength of DES

confusion, Diffusion

ch-6

AES structure, Algorithm, key scheduling function, Avalanche effect

ch-7

Double DES secure NIST (FIPS)

3DES

Table 7.1



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data integrity algorithm

use to protect block of data such as message from alteration

ch-8

use of Random number, condition, test

8.2, Blum Blum sub generator (procedure)

8.3. Pseudo random number block use

7/9

RC4 → stream cipher (IP, PT, algorithm)

8.6 True random number, true random number generation





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Ch-9

Public key cryptography is ?

Requirement, uses

Table 9.2

uses and application

Digital signature

Requirement of PKC

9.2: RSA algo. (Decryp description) +

Example.

Public key, private key generate

Ans : 1



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ch-11

Hash & Cryptographic hash

Hash এর application, বাধায় ব্যবহৃত হয়

11.2 → two simple hash function

hast ইওথার নাত

Brute force

Preimage and second preimage,

collision resistant attack.

Sha - 512 (steps + description)

Ch-12

message authentication কর

ନିମ୍ନଲିଖିତ କରା ୨୫

MAC 92 Description

HMAC Structure (*** Description)





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ch-13

Digital signature क्या है? कौन सवाल है?

Possible attack, requirement

प्रिमियम फीचर्स

Direct digital signature

13.2 : DSA Approach

Figure: 13.3

ch-14

Symmetric key distribution

Hierarchical key control

Session key lifetime

figure: 14.4

14.2

Secret key with authentication

14.3 Key distribution



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Ch-15

user authentication এবং স্বেচ্ছার
mutual authentication

15.3 (structure, কিভাবে ব্যবহার করা হয়,
problem)

Ch-19

mail কিভাবে পাঠানো হয় (fig 19.1)

component fig (19.2)

[smtp] ○ only asks ascii value দ্বারা
225
solve

Table 19.1

19.3 Problem

article 19.4

Table 19.4

confidentiality

confidentiality and authentication
compatibility



Software Engineering and Information System

Lecture - 1 (Information for management)

- ① Data and Information basics.
- ② Types of Information. (Details)
- ③ Management Hierarchy and Information Needs (Pyramid)

Lecture - 2 (System Analysis and Design Life cycle)

- ① Life cycle of system Analysis and Design (g steps)
- ② Attributes of System Analysis
- ③ System Life Cycle Diagram

Lecture - 3 (Feasibility Analysis)

- ① ~~Learning~~ Goals, characteristics of a goal-
- ② Cost-Benefit Analysis (only present value)
- ③ ROI
- ④ what is feasibility Analysis? steps in feasibility Analysis?

Lecture - 4 (Information Gathering)

- ① Information gathering strategies ✓ ② Information source ✓ ③ Interview Technique

Lecture-05 (Data flow Diagram)

- ✓(i) why DFD?
- ✓(ii) what are Data flow Diagram?
- ✓(iii) symbols used in DFD?
- ✓(iv) DFD for Hostel mess management. (~~use~~ for understanding)

Lecture-06 (Object oriented system modeling)

- ✓(i) object and their properties
- ✓(ii) what is class
- ✓(iii) Inheritance ~~is~~? Polymorphism

Lecture-07 (Design representation scheme)

- ✓(i) HIPO Diagram
- ✓(ii) IPO Chart
- ✓(iii) Warmer / Onn Diagram

Lecture-08 (Software Process)

- ✓(i) Definition of Software Process
- ✓(ii) A Generic Process model
- ✓(iii) Prescriptive models → Spina
- ✓(iv) waterfall model, Incremental model, The spiral.

Lecture 08-01

① SCRUM framework - An Agile Process (overview)

Lecture-09 (Modular Software Development)

① Modularity

② Characteristics of good design

③ Coupling (Content, common Control)

④ Cohesion cohesion

Lecture-10 : (Design pattern)

① what is design pattern ? Uses ? types ?

② singleton , Abstract factory, Adapter,
strategy design Pattern

③ mvc ? why mvc is not a Design
pattern ?

Chapter-14 ✓ (previous)

① what is a "Good" Test ?

② white Box and Black Box testing ?

③ BPT, Cyclomatic complexity (calculation)

Chap-26 :

Software Quality Assurance (Basics)

(previous) Lecture-11 : (SOILD Principles) ✕ ✕ ✕ ~

Malibub SIP

Software & Software Engineering :

- ① what is Software? Legacy Software
- ② what is Software Engineering?
- ③ Types of Software Applications?

Project Management Concepts :

Some terms:

- | | | |
|---|--|-------------------------------------|
| ① Program manager
② Project
③ Team lead
④ Senior Developer | ① QPs (briefly) | Page
slide 11, 12, 13 |
| | ② The Software Team | |
| | ③ The Product, Process, Project
& Concept | |
| | ④ Dev Developer | |

⑤ Testing Engineer

P.

Metrics

- ① McCall's Triangle of quality
- ② Measure, metrics and Indicator
- ③ Measurement principle

Metrics for Process and projects:

- ① measurement (Page 2, 3)
- ② Fig - 22.1, 22.3
- ③ size oriented metric (LOC, kLOC)
- ④ function oriented (FP)

Software project planning:

Software Scope (basics)

Project scheduling:

- ① Relationship between people and effort
- ② why Scheduling? (basics)
- ③ Critical path (math, algorithm
both back and forward)

UML

- ① what is UML?
- ② Use Case Diagram
- ③ Class Diagram
- ④ Activity Diagram