

5. Data Structures and Algorithms

5.1 Asymptotic analysis

☐☐☐ Asymptotic analysis

5.2 Lists, stacks and queues

☐☐☐ Lists, stacks and queues

5.3 Hashing

☐☐☐ Hashing

5.4 Trees and heaps

☐☐☐ Trees and heaps

5.5 Graphs and traversal

☐☐☐ Graphs and traversal

5.6 Sorting

☐☐☐ Sorting

5.7 Searching

☐☐☐ Searching

6. Computer Architecture

6.1 Instruction set architecture

☐☐☐ Instruction set architecture

6.2 Datapath and control

☐☐☐ Datapath and control

6.3 Pipelining

☐☐☐ Pipelining

6.4 Memory hierarchy

☐☐☐ Memory hierarchy

6.5 Input/output

☐☐☐ Input/output

6.6 Parallelism and performance

☐☐☐ Parallelism and performance

7. Operating Systems

7.1 Processes and threads

☐☐☐ Processes and threads

7.2 Scheduling

☐☐☐ Scheduling

7.3 Synchronisation

☐☐☐ Synchronisation

7.4 Virtual memory

☐☐☐ Virtual memory

7.5 File systems

☐☐☐ File systems

7.6 Protection and security

☐☐☐ Protection and security

8. Databases

8.1 Relational modelling

☐☐☐ Relational modelling

8.2 Relational algebra and SQL

☐☐☐ Relational algebra and SQL

8.3 Normalisation

☐☐☐ Normalisation

8.4 Indexes and query plans

☐☐☐ Indexes and query plans

8.5 Transactions and concurrency

☐☐☐ Transactions and concurrency

8.6 Security and data governance

☐☐☐ Security and data governance

9. Computer Networks

9.1 Layering and architecture

☐☐☐ Layering and architecture

9.2 Link layer and IP IP

☐☐☐ Link layer and IP

9.3 Routing

☐☐☐ Routing

9.4 Transport (TCP/UDP) (TCP/UDP)

☐☐☐ Transport (TCP/UDP)

9.5 Application protocols

☐☐☐ Application protocols

9.6 Network security

☐☐☐ Network security

9.7 Distributed systems fundamentals

☐☐☐ Distributed systems fundamentals

10. Algorithm Design and Analysis

10.1 Recurrences and analysis tools [number]

☐☐☐ Recurrences and analysis tools

10.2 Divide and conquer

☐☐☐ Divide and conquer

10.3 Greedy algorithms

☐☐☐ Greedy algorithms

10.4 Dynamic programming

☐☐☐ Dynamic programming

10.5 Graph optimisation

☐☐☐ Graph optimisation

10.6 Reductions and NP-completeness NP

☐☐☐ Reductions and NP-completeness

11. Theory of Computation and Compilers [number]

11.1 Automata and regular languages

☐☐☐ Automata and regular languages

11.2 Context-free languages and parsing theory

☐☐☐ Context-free languages and parsing theory

11.3 Computability

☐☐☐ Computability

11.4 Lexical analysis

☐☐☐ Lexical analysis

11.5 Parsing [number]

☐☐☐ Parsing

11.6 Semantic analysis and code generation

☐☐☐ Semantic analysis and code generation

12. Software Engineering

12.1 Requirements

☐☐☐ Requirements

12.2 Architecture and design

☐☐☐ Architecture and design

12.3 HCI and accessibility

☐☐☐ HCI and accessibility

12.4 Version control and teamwork

☐☐☐ Version control and teamwork

12.5 Testing and continuous integration

☐☐☐ Testing and continuous integration

12.6 Security and professional ethics

☐☐☐ Security and professional ethics

12.7 Team project

☐☐☐ Team project

13. Artificial Intelligence and Machine Learning

13.1 Search

☐☐☐ Search

13.2 Knowledge and reasoning

☐☐☐ Knowledge and reasoning

13.3 Probability models

☐☐☐ Probability models

13.4 Regression and classification

☐☐☐ Regression and classification

13.5 Optimisation and learning

☐☐☐ Optimisation and learning

13.6 Evaluation and leakage

☐☐☐ Evaluation and leakage

13.7 Fairness and limitations

☐☐☐ Fairness and limitations