

شبکه های کامپیووتری

گروه کامپیووتر (نرم افزار) – دانشکده فنی دانشگاه گیلان

دکتر رضا ابراهیمی آتانی

Reza.ebrahimi.atani@gmail.com , rebrahimi@guilan.ac.ir

سر فصل مطالب:

CHAPTER 1 INTRODUCTION

- 1.1 NETWORK APPLICATIONS
- 1.2 NETWORK HARDWARE
- 1.3 NETWORK SOFTWARE
- 1.4 REFERENCE MODELS
- 1.5 EXAMPLE NETWORKS
- 1.6 NETWORK STANDARDIZATION
- 1.7 METRIC UNITS
- 1.8 OUTLINE OF THE REST OF THE BOOK

CHAPTER 2 THE PHYSICAL LAYER

- 2.1 THE THEORETICAL BASIS FOR DATA COMMUNICATION
- 2.2 GUIDED TRANSMISSION MEDIA
- 2.3 WIRELESS TRANSMISSION
- 2.4 COMMUNICATION SATELLITES
- 2.5 THE PUBLIC SWITCHED TELEPHONE NETWORK
- 2.6 THE MOBILE TELEPHONE SYSTEM
- 2.7 CABLE TELEVISION
- 2.8 SUMMARY

CHAPTER 3 THE DATA LINK LAYER

- 3.1 DATA LINK LAYER DESIGN ISSUES
- 3.2 ERROR DETECTION AND CORRECTION
- 3.3 ELEMENTARY DATA LINK PROTOCOLS
- 3.4 SLIDING WINDOW PROTOCOLS
- 3.5 PROTOCOL VERIFICATION
- 3.6 EXAMPLE DATA LINK PROTOCOLS
- 3.7 SUMMARY

CHAPTER 4 THE MEDIUM ACCESS SUBLAYER

- 4.1 THE CHANNEL ALLOCATION PROBLEM

- 4.2 MULTIPLE ACCESS PROTOCOLS
- 4.3 ETHERNET
- 4.4 WIRELESS LANS
- 4.5 BROADBAND WIRELESS
- 4.6 BLUETOOTH
- 4.7 DATA LINK LAYER SWITCHING
- 4.8 SUMMARY

CHAPTER 5 THE NETWORK LAYER

- 5.1 NETWORK LAYER DESIGN ISSUES
- 5.2 ROUTING ALGORITHMS
- 5.3 CONGESTION CONTROL ALGORITHMS
- 5.4 QUALITY OF SERVICE
- 5.5 INTERNETWORKING
- 5.6 THE NETWORK LAYER IN THE INTERNET
- 5.7 SUMMARY

CHAPTER 6 THE TRANSPORT LAYER

- 6.1 THE TRANSPORT SERVICE
- 6.2 ELEMENTS OF TRANSPORT PROTOCOLS
- 6.3 A SIMPLE TRANSPORT PROTOCOL
- 6.4 THE INTERNET TRANSPORT PROTOCOLS: UDP
- 6.5 THE INTERNET TRANSPORT PROTOCOLS: TCP
- 6.6 PERFORMANCE ISSUES
- 6.7 SUMMARY

CHAPTER 7 THE APPLICATION LAYER

- 7.1 DNS--DOMAIN NAME SYSTEM
- 7.2 ELECTRONIC MAIL
- 7.3 THE WORLD WIDE WEB
- 7.4 MULTIMEDIA
- 7.5 SUMMARY

CHAPTER 8 NETWORK SECURITY

- 8.1 CRYPTOGRAPHY
- 8.2 SYMMETRIC-KEY ALGORITHMS
- 8.3 PUBLIC-KEY ALGORITHMS
- 8.4 DIGITAL SIGNATURES
- 8.5 MANAGEMENT OF PUBLIC KEYS
- 8.6 COMMUNICATION SECURITY
- 8.7 AUTHENTICATION PROTOCOLS
- 8.8 E-MAIL SECURITY
- 8.9 WEB SECURITY
- 8.10 SOCIAL ISSUES
- 8.11 SUMMARY

فهرست مراجع:

1. *Computer Networks. 4th edition, Anderw Tanenbaum.*
2. *Computer Networks: A Systems Approach* by Bruce S. Davie, Larry L. Peterson, third edition, 2003.
3. *Communication Networks – A First Course* by Jean Walrand, second edition, published by WCB/McGraw-Hill, 1998.
4. *Data Communications, Computer Networks and Open Systems*, by Fred Halsall, fourth edition, published by Addison Wesley, 1996.
5. *Computer Networking - A Top Down Approach Featuring the Internet* (Addison Wesley), first edition, by James Kurose and Keith Ross.
6. *Data Communication and Computer Network*, Stallings

ارزشیابی:

- پایان ترم ۱۳ نمره
- پروژه درس ۴ نمره
- تکالیف و حضور و غیاب ۳ نمره