



METADATA

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Abstract

This laboratory guide is addressed to undergraduate Computer Engineering students that attend a Computer Networking course. The book includes a series of laboratory exercises that aim at familiarising students with the operation of modern network devices. More specifically, students will gain experience in programming network devices in a simulation environment by using the freely distributed Packet Tracer simulator developed by Cisco. The Packet tracer tool allows the user to apply configuration procedures to network devices that are part of a computer network in a virtual environment. The exercises are designed for 2 (most of them) or 4-hour teaching periods. The exact duration varies depending on the extend of the discussion

that will take place in the classroom. Moreover, the exercises are developed in such a way that can be performed by a student without supervision and with the simulator as the only requirement. In this guide several networking-related issues are analysed, such as: basic configuration of network devices (security configurations, remote access), IPv4 and IPv6 addressing and subnetting, static and dynamic routing, Access Control Lists (ACLs), Virtual LANs (VLANs), Spanning Tree Protocol (STP) IPv4 services (DHCP, NAT) and network security related issues. For all of the above subjects, network topologies are developed and the configuration procedures are described in detail in order for the system to be fully operational.

