

DICTIONARY
OF
COMPUTER
SCIENCE
ENGINEERING
AND TECHNOLOGY

EDITOR-IN-CHIEF
Phillip A. Laplante

DICTIONARY
OF
**COMPUTER
SCIENCE,
ENGINEERING,
AND TECHNOLOGY**

EDITOR-IN-CHIEF
Phillip A. Laplante



CRC Press
Boca Raton London New York Washington, D.C.

Library of Congress Cataloging-in-Publication Data

Dictionary of computer science, engineering, and technology / edited by Phillip Laplante.

p. cm.

ISBN 0-8493-2691-5 (alk. paper)

1. Computer science—Dictionaries. 2. Engineering—Dictionaries. 3. Technology—Dictionaries. I. Laplante, Phillip A.

QA76.15.D5258 2000
004'.03—dc21

00-052882

This book contains information obtained from authentic and highly regarded sources. Reprinted material is quoted with permission, and sources are indicated. A wide variety of references are listed. Reasonable efforts have been made to publish reliable data and information, but the author and the publisher cannot assume responsibility for the validity of all materials or for the consequences of their use.

Neither this book nor any part may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying, microfilming, and recording, or by any information storage or retrieval system, without prior permission in writing from the publisher.

All rights reserved. Authorization to photocopy items for internal or personal use, or the personal or internal use of specific clients, may be granted by CRC Press LLC, provided that \$.50 per page photocopied is paid directly to Copyright clearance Center, 222 Rosewood Drive, Danvers, MA 01923 USA. The fee code for users of the Transactional Reporting Service is ISBN0-8493-2691-5/01/\$0.00+\$.50. The fee is subject to change without notice. For organizations that have been granted a photocopy license by the CCC, a separate system of payment has been arranged.

The consent of CRC Press LLC does not extend to copying for general distribution, for promotion, for creating new works, or for resale. Specific permission must be obtained in writing from CRC Press LLC for such copying.

Direct all inquiries to CRC Press LLC, 2000 N.W. Corporate Blvd., Boca Raton, Florida 33431.

Trademark Notice: Product or corporate names may be trademarks or registered trademarks, and are used only for identification and explanation, without intent to infringe.

© 2001 by CRC Press LLC

No claim to original U.S. Government works
International Standard Book Number 0-8493-2691-5
Library of Congress Card Number 00-052882
Printed in the United States of America 1 2 3 4 5 6 7 8 9 0
Printed on acid-free paper

file

for every nontrivial join dependency $\ast(R_1, R_2, \dots, R_N) \in F^+$, R_i is a superkey of R .

file a collection of related records.

file cache a cache used to buffer data being transferred between file storage (e.g., disk) and main memory.

file descriptor an identifier that allows accessing a file from within a computer program.

file format the structure of the computer file in which an image is stored. Often the format consists of a fixed-size header followed by the pixel values written from the top to the bottom row and within a row from the left to the right column. However, it is also common to compress the image. *See also* graphics interchange format, header, image compression, tagged image file format (TIFF).

file handle *See* file descriptor.

file name a sequence of characters that identifies a file, that is, the name portion of a directory entry (link).

file name generation a method of referring to files and directories using representative text patterns instead of literal file names.

file protection a mechanism to prevent unauthorized file use by setting rights to read, write, and execute.

file system a means of storing, organizing, and accessing files in a computer system.

file transfer protocol (ftp) a client-server protocol which allows a user on one computer to transfer files to and from another computer over a TCP/IP network. Also the client program the user executes to transfer files.

fill a technique for coloring areas bounded by line edges. The algorithms that fill interior-defined regions (the largest connected region of pixels whose values are the same as a given starting pixel) are called flood fill algorithms.

filled Mandelbrot set a Mandelbrot set where colors are not used.

filled pause in speech processing a type of dysfluency that occurs when words such as "er" or "umm" are used. *See also* dysfluency.

fill factor of an index, the percentage of space used in the index.

FILO *See* first-in-last-out.

filter (1) a computer program used to modify the data submitted to its input and sending it to the output.

(2) an optical device that selectively attenuates the intensity of light passing through it according to the light's properties. Common filters attenuate light according to either wavelength or polarization state.

(3) an electronic device that modifies some characteristic of an input signal for conditioning or other purposes. *See* high-pass filter, low-pass filter, bandpass filter.

filtering the process of eliminating object, signal, or image components which do not match up to some pre-specified criterion, as in the case of removing specific types of noise from signals. More generally, the application of an operator (typically a linear convolution) to a signal.

final query tree the query tree following the application of the heuristic optimization rules.

final state in an automaton, a final state is a state which designates that the input stream has been recognized. Synonym for accepting state.

final test electrical test performed after assembly to separate "good" devices from "bad".

fine-adjusting movement in a target acquisition movement, high-bandwidth, low-amplitude sub-movement used to make final trajectory corrections.

fine grained transaction a transaction that performs a small number of updates.

COMPUTER SCIENCE

DICTIONARY OF

COMPUTER SCIENCE, ENGINEERING, AND TECHNOLOGY

A complete lexicon of technical information, the **Dictionary of Computer Science, Engineering, and Technology** provides workable definitions and practical information as it enhances general computer science and engineering literacy. It spans the range of industry disciplines and sectors, including telecommunications, information theory, software, and hardware. If you work with or write about computers, this may be the single, most important resource you can put on your shelf.

The dictionary addresses all aspects of computing and computer technology from multiple perspectives, including the applied and professional vantage points. With more than 7,500 terms, it covers all major topics from artificial intelligence to programming languages, from software engineering to operating systems, and from database management to privacy issues. The definitions provided are detailed rather than concise.

Written by an international team of more than 50 contributors, this comprehensive, up-to-date, and easy-to-read reference of its kind. If you need to know the definition of anything related to computers, you will find it in the **Dictionary of Computer Science, Engineering, and Technology**.

Features

- Covers all aspects of hardware, software systems, and applications
- Provides cross-references for easy back-tracking of terms
- Presents detailed definitions and includes illustrations where required for clarity
- Lists each acronym as a separate entry referenced to the full term or terms it identifies
- Includes all buzzwords

