

A Dictionary of
Computing

FIFTH EDITION

OXFORD
UNIVERSITY PRESS

OXFORD

UNIVERSITY PRESS

Great Clarendon Street, Oxford OX2 6DP

Oxford University Press is a department of the University of Oxford.
It furthers the University's objective of excellence in research, scholarship,
and education by publishing worldwide in

Oxford New York

Auckland Bangkok Buenos Aires Cape Town Chennai
Dar es Salaam Delhi Hong Kong Istanbul Karachi Kolkata
Kuala Lumpur Madrid Melbourne Mexico City Mumbai Nairobi
São Paulo Shanghai Singapore Taipei Tokyo Toronto

Oxford is a registered trade mark of Oxford University Press
in the UK and in certain other countries

© Market House Books Ltd. 1983, 1986, 1990, 1996, 2004

The moral rights of the author have been asserted

Database right Oxford University Press (maker)

First published 1983

Second edition 1986

Third edition 1990

Fourth edition 1996

Fifth edition 2004

All rights reserved. No part of this publication may be reproduced,
stored in a retrieval system, or transmitted in any form or by any means,
without the prior permission in writing of Oxford University Press,
or as expressly permitted by law, or under terms agreed with the appropriate
reprographics rights organization. Enquiries concerning reproduction
outside the scope of the above should be sent to the Rights Department,
Oxford University Press, at the address above

You must not circulate this book in any other binding or cover
and you must impose this same condition on any acquirer

British Library Cataloguing in Publication Data

Data available

Library of Congress Cataloging in Publication Data

Data available

ISBN 0-19-860877-2

1

Typeset in Swift by Market House Books Ltd.

Printed in Great Britain by Clays Ltd, St Ives plc

called *smileys*, regardless of mood. E-mail messages are largely restricted to the *ASCII character set, which precludes the use of text attributes such as bold, italic, or underline but does have a full set of punctuation marks. These are typically used to make faces sideways on the line (see table).

:~)	smiling
:-(	sad or frowning
:-(	sour
!~)	winking
:-D	laughing

Emoticon Examples of some emoticons

empty list (null list) See **LIST**.

empty medium A *data medium that does not contain variable data but may have a frame of reference or preformatting. Compare **VIRGIN MEDIUM**.

empty set (null set, void set) A *set with no elements. It is usually denoted by ϕ .

empty string (null string) A string whose *length is zero. It is commonly denoted by ϵ or Λ . The possibility of strings being empty is a notorious source of bugs in programs.

EMS memory See **EXPANDED MEMORY**.

emulation The exact execution on a given computer of a program written for a different computer, accepting the identical data and producing the identical results. Emulation is thus the imitation of all or part of one computer system by another system. It may be achieved by software, microprogram, or hardware. A particular emulation could be used as a replacement for all or part of the system being emulated, and furthermore could be an improved version. For example, a new computer may emulate an obsolete one so that programs written for the old one will run without modification. See also **SIMULATION**, **COMPATIBILITY**.

emulator Any system, especially a program or microprogram, that permits the process of *emulation to be carried out.

enable To selectively activate a device or

function. When a number of devices are connected in parallel, selective operation can be achieved by an enabling action - such as a signal on a discrete line or a pattern of signals on the common line or lines - that will set only the desired device into a state in which it can receive further signals. Compare **INHIBIT**.

enable pulse A pulse that must be present to allow other signals to be effective in certain electronic logic circuits. Although the term is now used to describe an electronic logic function it was originally used in an analogous way in connection with *core stores, where the coincidence of two pulses was required to change the state of a core: one of the pulses was the write pulse and could be common to a number of cores; an enable pulse was simultaneously applied to a particular core and thus enabled the write pulse to change the state of that core.

encapsulated PostScript (EPS) A format for importing and exporting *PostScript files, usually used for illustrations. An EPS file is a single-page PostScript file, similar to any PostScript file but with certain extra conditions. In particular, an EPS file has to contain a bounding box comment describing the size of the illustration. The file can contain graphics or text or a combination of the two and may contain embedded fonts. Files of this type can be inserted into a page on a desktop publishing application, and the graphic will be embedded in an output PostScript file of the page. In general, a basic EPS file appears as a gray rectangle in the screen view of the page. For positioning purposes, it is convenient to have an EPS file with an embedded bitmap preview, giving a low-resolution representation of the illustration. There are various ways of doing this. On Macintosh machines, EPSF files are commonly used. These have a PICT preview in the resource fork of the file. On PCs it is usual to have an embedded low-resolution TIF file as a preview. EPSI is an Adobe specification for a device-independent ASCII bitmap preview.

encapsulation 1. See **OBJECT, INFORMATION HIDING**.

2. See **INTERNETWORKING**.

encoder 1. The means by which an en-