

INTRODUCTION

EXERCISE SOLUTIONS

1.2 Three definitions of “bit”:

- (1) A binary digit (p. 1).
- (2) Past tense of “bite” (p. 1).
- (3) A small amount (pp. 6, 10).

1.3

ASIC	Application-Specific Integrated Circuit
CAD	Computer-Aided Design
CD	Compact Disc
CO	Central Office
CPLD	Complex Programmable Logic Device
DAT	Digital Audio Tape
DIP	Dual In-line Pin
DVD	Digital Versatile Disc
FPGA	Field-Programmable Gate Array
HDL	Hardware Description Language
IC	Integrated Circuit
IP	Internet Protocol
LSI	Large-Scale Integration
MCM	Multichip Module

2 DIGITAL CIRCUITS

MSI Medium-Scale Integration

NRE Nonrecurring Engineering

OK Although we use this word hundreds of times a week whether things are OK or not, we have probably rarely wondered about its history. That history is in fact a brief one, the word being first recorded in 1839, though it was no doubt in circulation before then. Much scholarship has been expended on the origins of OK, but Allen Walker Read has conclusively proved that OK is based on a sort of joke. Someone pronounced the phrase “all correct” as “oll (or orl) correct,” and the same person or someone else spelled it “oll korrekt,” which abbreviated gives us OK. This term gained wide currency by being used as a political slogan by the 1840 Democratic candidate Martin Van Buren, who was nicknamed Old Kinderhook because he was born in Kinderhook, New York. An editorial of the same year, referring to the receipt of a pin with the slogan O.K., had this comment: “frightful letters . . . significant of the birth-place of Martin Van Buren, old Kinderhook, as also the rallying word of the Democracy of the late election, ‘all correct’ Those who wear them should bear in mind that it will require their most strenuous exertions ... to make all things O.K.” [From the *American Heritage Electronic Dictionary (AHED)*, copyright 1992 by Houghton Mifflin Company]

PBX Private Branch Exchange

PCB Printed-Circuit Board

PLD Programmable Logic Device

PWB Printed-Wiring Board

SMT Surface-Mount Technology

SSI Small-Scale Integration

VHDL VHSIC Hardware Description Language

VLSI Very Large-Scale Integration

1.4

ABEL Advanced Boolean Equation Language

CMOS Complementary Metal-Oxide Semiconductor

JPEG Joint Photographic Experts Group

MPEG Moving Picture Experts Group

OK (see above)

PERL According to some, it’s “Practical Extraction and Report Language.” But the relevant Perl FAQ entry, in `perlfaq1.pod`, says “never write ‘PERL’, because perl isn’t really an acronym, apocryphal folklore and post-facto expansions notwithstanding.” (Thanks to Anno Siegel for enlightening me on this.)

VHDL VHSIC Hardware Description Language

1.8 In my book, “dice” is the plural of “die.”