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Outline of computing
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   See also: Index of computing articles
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Branches of computing [edit]

 Computer science (see also Outline of computer science) • Information technology – refers to the application (esp in businesses and other organisations) of computer science, that is, its use by mankind (see also Outline of information technology)

Information systems – refers to the study of the application of IT to business processes

The following outline is provided as an overview of and topical guide to computing:

Computing – activity of using and improving computer hardware and computer software.

Computer science – (outline) Computer science

Scientific computing

 Computer engineering (see also Outline of computer engineering) Software engineering (see also Outline of software engineering) Computer science [edit]

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Theory of computation

 Metacomputing Autonomic computing

Computers [edit] Main articles: Computer and Outline of computers See information processor for a high-level block diagram. Computer Computer hardware

 Processor design Computer network Computer performance by orders of magnitude

History of computing hardware

Instruction-level taxonomies [edit] After the commoditization of memory, attention turned to optimizing CPU performance at the instruction level. Various methods of speeding up the fetch-execute cycle include:

• designing instruction set architectures with simpler, faster instructions: RISC as opposed to CISC Superscalar instruction execution

VLIW architectures, which make parallelism explicit

Main article: Outline of software Software engineering

 $Software \ [edit]$

 Computer programming Computational Software patent

 Firmware System software Device drivers

Operating systems

Utilities

Databases

Speech recognition

Speech synthesis

History of computing

Punched card

• IBM 1400 series

Application Software

 Geographic information system Spreadsheet Word processor

Programming languages

 interpreters Compilers Assemblers

 History of computing hardware from the tally stick to the quantum computer History of computer science History of computer animation

History of computer graphics

History of computer vision

History of computer networking

History of computing [edit]

• IBM System/360 • History of IBM magnetic disk drives

Business computing [edit]

• Customer relationship management

Data warehouse

• Decision support system

Electronic data processing

Enterprise resource planning

Hospital information system

• Supply chain management

Utility Computing

Human factors [edit]

Accessible computing

Computer user satisfaction

Wide area network

City Area Network

Village Area Network

Local area network

Mesh networking

Source coding

Internet

• Metropolitan area network

• Geographic information system

 Unit record equipment • IBM 700/7000 series

 Accounting software Computer-aided design Computer-aided manufacturing Computer-aided dispatch

 Management information system • Material requirements planning Product Lifecycle Management Strategic enterprise management

Human resource management system

 Human-centered computing Computer network [edit] Wired and wireless computer network [edit] Types

Wireless local area network

• Computer-induced medical problems

Human-computer interaction (outline)

 Network management Computing technology based wireless networking (CbWN) [edit]

Collaborative workspace

 Wyner-Ziv coding for cooperative wireless communications Security Dirty paper coding for cooperative multiple antenna or user precoding Intelligence

Cognitive communications

Game theory for wireless networking

Cryptology – cryptography – information theory

• Social engineering – Dumpster diving

Flexible sectorization, Beamforming and SDMA

 Software Software defined radio (SDR) Programmable air-interface Downloadable algorithm: e.g., downloadable codebook for Precoding Computer security [edit]

• Cracking - demon dialing - Hacking - war dialing - war driving

Floating point (Single precision, Double precision, etc.)

• Physical security – Black bag job Computer security Computer surveillance Defensive programming Malware

 Fixed point Rational number Decimal

• Excess-3 BCD (XS-3)

Biquinary-coded decimal

• storage: Character – String – text

Binary-coded decimal (BCD)

Integral data types – bit, byte, etc.

Security engineering

Numeric data [edit]

Real data types:

Data [edit]

 representation: Binary – Octal – Decimal – Hexadecimal (hex) Computer mathematics – Computer numbering formats Character data [edit]

Other data topics [edit] Data compression Digital signal processing

 Data Protection Act Classes of computers [edit]

Image processing

• Data management

Home computer

Laptop

Mainframe

Routing

Polish analog computer Minicomputer AKAT-1 Microcomputer Personal computer Portable computer

 Programmable logic controller or PLC Server Smartphone Supercomputer Tablet computer • Video game console Workstation Organizations [edit]

Companies – current [edit]

Apple

Asus

Avaya

Fujitsu

Gateway Computers

Dell

Personal digital assistant (aka PDA, or Handheld computer)

 Intel Corporation IBM Lenovo

Companies – historic [edit]

Amdahl Corporation, bought by Fujitsu

Compaq, bought by Hewlett-Packard

Honeywell, computer division bought by Bull

Acorn, bought by Olivetti

• Bendix Corporation

 Control Data Cray Data General • Digital Equipment Corporation, bought by Compaq, later bought by Hewlett-Packard Digital Research – produced system software for early Intel microprocessor-based computers

Elliott Brothers

• ICL

Leo

Olivetti

Osborne

PERQ

Raytheon

Symbolics

UNIVAC

Packard Bell

Prime Computer

• English Electric Company

• Lisp Machines, Inc. Marconi • Nixdorf Computer, bought by Siemens Norsk Data

 Royal McBee RCA Scientific Data Systems, sold to Xerox Siemens

Wang Professional organizations [edit] Association for Computing Machinery (ACM)

Computer Measurement Group (CMG)

British Computer Society (BCS)

• Institution of Electrical Engineers

Standards bodies [edit]

Canadian Information Processing Society (CIPS)

• International Electrotechnical Commission (IEC)

See also: Standardization and Standards organization

 International Electrotechnical Commission (IEC) International Organization for Standardization (ISO) Institute of Electrical and Electronics Engineers (IEEE) Internet Engineering Task Force (IETF)

World Wide Web Consortium (W3C)

Open standards bodies [edit]

Application Response Measurement (ARM)

See also Open standard

 Bill Gates Paul Allen Apple Inc.

Steve Jobs

Microsoft

V • T • E

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profit organization.

Computing publications [edit] thousand links to the home pages of computer scientists.

Major figures associated with making personal computers popular.

• Apdex Alliance – Application Performance Index

 Steve Wozniak External links [edit]

amaani

Part of an early computer, EDSAC.

card. The main goal of CbWN is to optimize the system performance of the flexible wireless network. Codebook design for side information based transmission techniques such as Precoding

This notebook computer is

connected to a wireless access point using a PC card wireless

• representation: ASCII – Unicode – Multibyte – EBCDIC (Widecharacter, Multicharacter) – FIELDATA – Baudot

There are several terms which describe classes, or categories, of computers: Analog computer Calculator Desktop computer Desktop replacement computer Digital computer Embedded computer

 Groupe Bull HCL Hewlett-Packard · Hitachi, Ltd. Microsoft NEC Corporation Novell Panasonic Red Hat Silicon Graphics Sun Microsystems Unisys

• Burroughs Corporation, merged with Sperry to become Unisys

General Electric, computer division bought by Honeywell, then Bull

• Sinclair Research, created the ZX Spectrum, ZX80, and ZX81

• Sperry, which bought UNIVAC, and later merged with Burroughs to become Unisys

Varian Data Machines, a division of Varian Associates which was bought by Sperry

based on Motorola 6800 and 6809 microcomputer chips

• Micro Instrumentation and Telemetry Systems produced the first widely sold microcomputer system (kit and assembled)

A computer Lab

• Southweat Technical products Corporation produced microcomputers systems (kit and assembled), peripherals, and software

Institute of Electrical and Electronics Engineers (IEEE), in particular the IEEE Computer Society

• Digital Bibliography & Library Project – as of July 2007, lists over 910,000 bibliographic entries on computer science and several Persons influential in computing [edit]

• FOLDOC: the Free On-Line Dictionary Of Computing

Wikipedia outlines

General reference

Categories: Computing | Outlines of computing and engineering | Outlines

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Computing at Wikipedia's sister projects

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