APPENDIX I

GLOSSARY AND ABBREVIATIONS

Absolute address:

A binary number that is permanently assigned as the address of a storage location. A binary number which needs no further modification to uniquely identify a storage location.

Absolute addressing, @#A:

The PDP-11 supports one form of Absolute Addressing which is when the contents of the location following the instruction are taken as the address of the operand. This mode is the equivalent of immediate deferred.

Absolute Loader:

A stand-alone system program which, when in core, enables the user to load into core memory data punched on paper tape in absolute binary format.

A/D:

Analog-to-Digital.

Address:

A label, name, or number which designates a location where information is stored.

Address Constant:

A value, or expression, used in the calculation of absolute or virtual storage addresses.

Algorithm:

A procedure for accomplishing a given task consisting of a finite number of sequential steps.

Alphanumeric:

Pertaining to a character set that contains both letters and numerals, and usually other characters.

And:

A logical operation such that the result is true, if all conditions are true; otherwise the result is false.

Argument:

1. A variable or constant which is passed to a subroutine as information;
2. A variable upon whose value the value of a function depends.

Arithmetic unit:

The component of a computer where arithmetic and logical operations are performed. Part of the central processor.

Array:

A set or list of contiguous data elements.

ASCII:

An abbreviation of American Standard Code for Information Interchange.

Assemble:

To translate from a symbolic language program to a machine language program by substituting binary operation codes for symbolic operation codes and absolute or relocatable addresses for symbolic addresses.

Assembler:

A program which translates symbolic programs into machine language programs and assigns memory locations for variables and constants.

Assembly Language:

See Language, assembly.

Autodecrement deferred addressing, @-(Rn):

See deferred addressing.

Autoincrement deferred addressing, @(Rn)+:

See deferred addressing.

Auxiliary storage:

Non-processor storage that supplements core memory such as disk or magnetic tape.

B

Base address:

A given address from which an absolute address is derived by combination with a relative address.

Binary:

Pertaining to the number system with a radix of two.

Binary Code:

A code that makes use of exactly two distinct characters, Ø and 1.

Binary Loader:

See Absolute Loader.

Bit:

A binary digit.

Bit Map:

A table describing the allocation of space. Each bit in the table indicates the state (occupied or free) of one segment of storage, for example a block on a bulk storage device.

Block:

A group of physically adjacent related words, of a specified size on a device. The smallest system-addressable segment on a device.

Bootstrap:

A technique or device designed to bring itself into a desired state by means of its own action.

Bootstrap Loader:

A routine whose first few instructions are sufficient to bring the rest of itself into the computer from an input device.

Branch:

A point in a routine where one of two or more choices is made under control of the routine.

Buffer:

A storage area.

Bug:

A mistake in the design or implementation of a program which may cause erroneous results.

Byte:

A contiguous group of binary digits usually operated upon as a unit. A PDP-11 byte has eight binary digits or bits.

C

Carriage return:

The Teletype operation that causes the next character to be printed at the left margin. A non-printing character.

Carriage return/line feed:

Two Teletype functions often associated together. The first causes the physical return of the printing head to the left and the second advances the carriage to a new line.

Central processor:

The unit of a computer that controls the interpretation and execution of predefined instructions. ABBR.,CPU.

CIL:

Core Image Library.

CILUS:

Core Image Library Update and Save Program.

Character:

A single letter, numeral, or symbol used to represent information.

Checksum:

A method for checking the validity of data transfers. For example, when all bytes of a logical block of data, including the checksum, are added together the result should be zero.

Clear:

To erase the contents of a storage location by replacing the contents, normally with zero or spaces; to set to zero.

Code:

The set of instructions.

Coding:

To write instructions for a computer using symbols meaningful to the computer, or to an assembler, compiler or other language processor.

Command:

A used order to a computer system, usually given through a keyboard terminal.

Command decoder:

That part of a computer system which interprets user commands. Also called command-string decoder.

Command-string:

A set of user specified datasets and/or switches.

Command-string Interpreter (C.S.I.):

A DOS Monitor routine, which is used by many system programs; it accepts keyboard input at program run time in a special format.

COMD (COMmunications Directory):

The first few data words of a load module which contain information such as the absolute load address, start address, and size.

Compatibility:

The ability of an instruction or source language to be used on more than one model of the same type of computer.

Compile:

To translate from a source language to object code (usually machine language).

Compiler:

A program which translates from a programming language (source code) to the object code (machine language) of a given machine, i.e., the FORTRAN Compiler for the PDP-11.

Complement:

(one's) To replace all Ø bits with 1 bit and vice versa.
(two's) To form the one's complement and add 1.

Conditional assembly:

Assembly of selected parts of a symbolic program only if certain conditions have been met.

Conditional branch:

Depending upon whether a condition within the program is met, control may transfer to another point in the program.

Console:

Usually the external front side of the central processing unit where controls and indicators are available for manual operation of the device.

Constant:

Numeric data used but not changed by a program.

Contiguous File:

A file consisting of physically adjacent blocks on a bulk storage device.

Convert:

1. To change numerical data from one radix to another.
2. To transfer data from one recorded format to another.

Core Bit Map:

A core-resident bit map with bits flagged for each 16 word block of free memory which has been allocated by the Monitor.

Core Image:

An absolute binary representation of a program or data.

Core Memory:

The main high-speed storage of a computer.

Counter:

A register or storage location (variable) used to represent the number of occurrences of an operation (see Loop).

CPU:

Central Processor.

Current Location Counter:

A counter kept by an assembler to determine the address assigned to an instruction or constant being assembled.

Cycle Time:

The length of time it takes the computer to reference one word.

D

D/A:

Digital-to-Analog.

DAT:

Device Assignment Table that contains the specifications from DOS/BATCH ASSIGN commands.

Data:

A general term used to denote any or all facts, numbers, letters, and symbols. It connotes basic elements of information which can be processed or produced by a computer.

Data break:

A facility which permits I/O transfers to occur on a cycle-stealing basis without disturbing program execution.

Dataset:

A logical collection of data which is treated as an entity by a program. Typically, the items in a dataset have a relationship to each other which simultaneously binds them together and distinguishes them from items in other datasets.

DDB:

Dataset Data Block. Contains Monitor information for a dataset.

Debug:

To detect, locate, and correct mistakes in a program.

DEC:

Digital Equipment Corporation.

Deferred (indirect) addressing:

An addressing mode in which the contents of the selected register are used as the address of the operand. The PDP-11 supports four modes of deferred addressing which are:

1. Register deferred @Rn or (Rn).

   Register contains the address of the operand.

2. Autoincrement deferred @(Rn)+

   Register is first used as a pointer to a word containing the address of the operand, then incremented (always by two; even for byte instructions.)

3. Autodecrement deferred @-(Rn)

   Register is decremented (always by two; even for byte instructions) and then used as a pointer to a word containing the address of the operand.

4. Index Deferred @x(Rn)

   Value x and (Rn) are added and the sum is used as a pointer to a word containing the address of the operand. Neither X nor (Rn) are modified.

Delimiter:

A character that separates, terminates and organizes elements of a character string.

DEP:

Deposit.

Device:

Synonymous with peripheral.

Device Controller:

A hardware unit which electronically supervises one or more of the same type of devices. It is the link between the CPU and the I/O devices.

Device driver:

A program which controls physical hardware activities on a peripheral device. The device driver is the interface between a device and the common, device-independent I/O code in the Monitor.

Device flags:

One bit registers which record the current status of a device.

Digit:

A character used to represent one of the non-negative integers smaller than the radix; e.g., in binary notation, either Ø or 1, or any one of the n symbols in a number system of radix n.

Digital computer:

A device that performs sequences of arithmetic and logical operations on discrete data. A device that contains a stored program which allows it to perform internal sequences of arithmetic and logical operations on discrete data.

Direct address:

An address that specifies the location of where an instruction operand is to be found or referenced.

Direct addressing:

The PDP-11 supports 4 modes of Direct Addressing which are:

1. Register addressing, Rn:

   The register contains the operand.

2. Autoincrement addressing, (Rn)+:

   The contents of the register, (Rn), is used as a pointer to sequential data then incremented.

3. Autodecrement addressing, -(Rn):

   The contents of the register, (Rn), is decremented and then used as a pointer.

4. Index addressing, X(Rn):

   The value X (stored in a word following the instruction) is added to the contents of register Rn to produce the address of the operand. Neither X nor the contents of Rn are modified.

Directory device:

A device (such as a disk) which can be partitioned by software into many distinct files. A directory of these files is maintained on the device to locate the files.

DMA:

Direct Memory Access.

DOS:

A single user Disk Operating System for the PDP-11 used for program development.

Double Operand Addressing:

Assembler operations which imply two operands (such as add, move, and compare) are handled by instructions that specify two addresses.

Double precision:

Pertaining to the use of multiple computer words to represent more significant digits in a number.

Downtime:

The time interval during which a device is inoperative.

Driver:

See Device Driver.

Dummy variable:

An artificial address, instruction, or record of information inserted solely to fulfill prescribed conditions, such as to achieve a fixed word length or block length, but without itself affecting machine operations except to permit the machine to perform desired operations.

Dump:

To copy the contents of all or part of a storage medium, usually onto an external storage medium.

E

Editor:

A system program which provides facilities for inserting, deleting or altering one or more characters or lines of text.

Effective address:

The address actually used in the execution of a computer instruction.

EMT:

Emulator Trap.

EOD:

End-of-Data.

EOF:

End-of-File.

EOM:

End-of-Medium.

ERR:

Error.

EXAM:

Examine.

Exclusive OR:

A logical operation such that the result is true if one and only one operand is true and false otherwise.

EXEC:

Execute.

Execute:

To carry out an instruction or run a program on the computer.

External storage:

A storage device other than memory that can store information in a form acceptable to the computer, e.g., cards, tapes.

F

Fatal Error:

An error from which a user's program cannot recover.

FCTN:

Function.

FIB:

File Information Block. This contains (in core) information from the UFD and other sources when a file is open.

Field:

1. One or more data elements treated as a unit.
2. A specified area of a record used for a particular category.

File:

A named set of related data records.

File structured device:

A device such as disk or DECtape which contains records organized into files and accessible through filenames found in a directory file. See directory device.

Filename:

Alphanumeric characters used to identify a related set of records which constitute a file. A filename consists of up to six letters and digits.

Filename Extension:

An appendage to a filename which is generally used to indicate the type of information in the file. Extensions are separated from the filename by a period, and consist of up to three letters or digits. Abbr., Ext.

Fixed point number:

A number whose radix point position is constant according to a predetermined convention.

Flag:

1. Any of various types of indicators used for identification, or a character that signals the occurrence of some condition.

2. A character (or characters) printed by an assembler or a compiler to indicate that a certain kind of error was detected in a program.

Flip-Flop:

1. A circuit capable of assuming only one of two stable states at a given time.

2. A programming technique used to alternate Input/Output devices during processing.

Floating Point:

A number system in which the position of the radix point is indicated by one part (the exponent part), and another part represents digits (the fractional part).

Floating Point Number:

Two part representation of a binary number, an exponent representing the scale and a fraction representing the significant digits.

Flowchart:

A graphical representation of the operations required to carry out a task (symbolic algorithm)

Format:

The arrangement of data. Also a FORTRAN statement that defines the arrangement of data in an output (or input) record.

Formatted ASCII Mode:

Data in this mode (for example, a MACRO-Assembler source program) is assumed by the Monitor to be in strings of 7- or 8-bit ASCII characters terminated by Line Feed, Form Feed or Vertical Tab. In this mode, the Monitor manages all device-dependent conversions at the driver level. For example, Line Feed is supplied after return in character strings from keyboard terminals.

Formatted binary mode:

Data in this mode (for example, the output of the MACRO Assembler) is transferred in 8-bit bytes as read from the device. A checksum as well as a count of the number of bytes is calculated during a WRITE and transmitted with the data. The checksum is verified during a read.

Unformatted binary mode is the same as formatted binary except that no checksum or count is calculated or verified.

Formatted mode:

This generally means that control information is carried along with the data.

Full duplex:

Describes a communications channel capable of simultaneous and independent transmission and reception.

Function:

1. A set of ordered pairs expressing the mapping of one set to another.

2. In FORTRAN, a specified subroutine which returns a computational value whenever it is called.

G

General Register (R):

A special set of high speed memory locations which can be used for arithmetic and logical operations, as well as addressing.

Global Symbol:

A symbol, such as a label, which provides the links, or communications, between object modules.

GSD:

Global Symbol Directory (in object module).

H

Half duplex:

Describes a communications channel capable of transmission and/or reception, but not both simultaneously.

Hardware:

Physical equipment; e.g., mechanical, electrical, or electronic devices.

Head:

A component that reads, records, or erases data on a magnetic storage device.

Immediate addressing, #n:

The operand follows the instruction. This mode is equivalent to using the autoincrement mode with the PC.

INC:

Increment, Increase.

Index deferred addressing, @X(Rn):

See deferred addressing.

Indirect address:

An address in a computer instruction which indicates a location where the address of the referenced operand is to be found.

Indirect addressing:

See deferred addressing.

Initialize:

To set counters, switches, and addresses to some starting value at the beginning of, or at prescribed points in, a computer routine. Abbr., INIT.

Input:

The transferring of data from auxiliary or external storage into the memory unit of the computer.

Instructions:

A command which causes the computer or system to perform an operation. Abbr., INST.

Interleave Factor:

The optimal minimum distance, measured in number of physical device blocks, between logically adjacent blocks of a lined file. For example, if an interleave factor is four and if physical block N is assigned to block 1 of a linked file, then physical block N+4 would be the closest device block that could be assigned to block 2 of that file.

Internal storage:

The storage facilities within the computer. Also called main memory and core memory.

Interpreter:

A routine that translates and executes source language statements at run time.

Interrupt:

When special conditions declared by the programmer or the hardware have been fulfilled, the current task of the processor may be suspended and another task may be initiated (the interrupt service routine). The suspended task is resumed if the interrupt service routine has been performed and if no further interrupt occurred. Abbr., INTR.

Interrupt vector address:

A unique address which points to two consecutive memory locations containing the start address of the interrupt service routine and priority at which the interrupt is to be serviced.

I/O:

Abbreviation for input/output.

IOT:

Input/Output Trap.

Iteration:

Repetition of a group of instructions.

J

Job:

A group of data and control statements which does a unit of work: i.e., a program and all its related subroutines, data and control statements.

Julian Date:

A 5-digit (decimal) numerical representation of the date, in which the two high-order digits give the year (19ØØ=ØØ, 1999-99) and the three low-order digits give the day within the year (January 1 = ØØ1, December 31 = 365 (366 for leap year)). For example, January 28, 1971 is represented as 71028.

Jump:

A departure from the normal sequence of executing instructions in a computer.

Junior Byte:

The PDP-11 supports a 16-bit word, which is two bytes. The low-order byte, bits Ø through 7, is the Junior Byte.

K

K:

An abbreviation for the prefix kilo; i.e., 1ØØØ in decimal notation. In the computer field, two to the tenth power, which is 1Ø24 in decimal notation. Hence, a 4K memory has 4096 words.

KB:

Keyboard.

KSB:

Keyboard Swap Buffer. The non-resident routines which process keyboard commands are brought into the keyboard swap buffer.

L

Label:

One or more characters used to identify a source language statement or line.

Language, assembly:

A machine-oriented language in which the user has to take into account the characteristics of the machine.

Language, computer:

A systematic unambiguous, human-oriented means of communicating instructions and information to the computer.

Language, machine:

Instruction expressed in binary that can be directly processed by the computer.

Language, source:

A problem-oriented computer language such as FORTRAN or BASIC in which programs are written without regard to the structure of the machine and which requires translation in order to be executed by the computer.

Leader:

The blank section of tape at the beginning of a tape.

Least significant digit:

The rightmost digit of a number.

Librarian (LIBR):

A system program for the DOS/BATCH system providing facilities for creating, deleting, and listing the contents of libraries.

Library:

A file which consists of one or more object modules.

Library routines:

A collection of standard routines which can be incorporated into larger routines.

Line:

A string of ASCII characters which is terminated by a LINE FEED, FORM FEED or VERTICAL TAB.

Line Feed:

The console terminal operation which advances the paper by one line.

Line Number:

In source languages such as BASIC and FORTRAN, a number which begins a line of the source program for purposes of identification. A numeric label.

Linkage:

In programming, code that connects two separately coded routines.

Linked File:

A file consisting of a set of blocks within which an ordering is specified through the use of a link word or pointer embedded within each block.

Linker:

A systems program which creates a load module to be loaded into core memory. The linker associates external symbols to provide communication between independently assembled user programs and libraries.

List:

1. A set of related items.
2. To print out a listing on the line printer or terminal.
3. See Pushdown list.

Load:

To place a program or data into internal storage.

Load Map:

A table produced by the Link system program which gives information concerning the load module's makeup; e.g., the transfer address and the low and high limits of the relocatable code.

Load Module:

The output of the linker. A program in formatted binary form ready for loading and executing on a PDP-11.

Location:

A place in storage or memory where a unit of data or an instruction may be stored. Abbr., LOC.

Location counter:

See Current Location Counter.

Loop:

A sequence of instructions that is executed repeatedly until a terminal condition is satisfied.

LP:

Line Printer.

M

Machine Language Programming:

In this text, synonymous with assembly language programming (the term is sometimes used to mean the actual binary machine instructions).

MACRO:

1. The PDP-11 assembler that operates under the DOS Monitor. It provides the programmer a means of writing relocatable programs with meaningful symbols which are assembled into object modules that can be processed by the linker.

2. A macro is a prototype statement in the MACRO-language which enables the programmer to generate a recurring coding sequence each time it is invoked.

Macro instruction:

An assembly language instruction that invokes a variable number of machine language instructions.

Manual Input:

The entry of data by hand into a device at the time of processing.

Manual Operation:

The processing of data in a system by direct manual techniques.

Mask:

A bit pattern which selects those bits from a word of data which are to be used in some subsequent operation.

Matrix:

1. A table can be considered to be a matrix.
2. A lattice work of input and output leads with logic elements connected at some of their intersections.

MBR:

Memory Buffer Register.

Memory:

1. Core Memory.
2. Pertaining to a device on which data can be stored and from which it can be retrieved.

Memory protection:

A method of preventing the contents of some part of main memory from being destroyed or altered.

MFD:

Master File Directory. Contains the names and locations of all UFD's (user file directories) on a file-structured device.

Modular Programming:

A programming technique in which the programmer breaks down the entire program into constituent subroutines.

Monitor:

The master control program that observes, supervises, controls, or verifies the operations of a system.

Most Significant Digit:

The leftmost nonzero digit.

MRT:

Monitor Residency Table. Contains the address (on disk or in core) or all non-resident Monitor modules.

MSB:

Monitor Swap Buffer. The non-resident routines which when processing requests to the Monitor are brought into the main swap buffer.

N

NEG:

Negate.

Nesting:

1. Including a program loop within another program loop.

2. Parenthetical nesting, such as (A+B*(C+D)), where interpretation proceeds from innermost to outermost level.

Normalize:

To adjust the exponent and fraction of a floating-point quantity so that the fraction appears in a prescribed format. ABBR., NOR.

O

Object Module:

The output of a compiler or assembler that contains control information and a relocatable binary program.

Object program:

The relocatable binary program which is the output of a compiler or assembler.

Octal:

Pertaining to the number system with a radix of eight.

ODT (On-Line Debugging Technique):

A system program that aids in debugging assembled (and linked) object programs.

Off-line:

Pertaining to equipment or devices not under direct control of the computer.

Offset:

In branching, the number of words from the current contents of the Program Counter to the destination address. Offset = (Dest.Address-PC)/2.

On-line:

Pertaining to equipment or devices under direct control of the computer; also to programs operating directly and immediately to user commands; e.g., BASIC.

One's Complement Arithmetic:

See Complement.

Operand:

That which is effected, manipulated, or operated upon by an instruction. The address or symbolic name portion of an assembler instruction.

Operator:

1. That symbol or code which indicates an action (or operation) to be performed; e.g., + or *.
2. A user communicating directly with the computer through the keyboard.

OR:

(Inclusive) A logical operation such that the result is true if one or more operands are true, and false if all operands are false.

(Exclusive) A logical operation such that the result is true if one and only one operand is true and false if otherwise.

Origin:

The absolute address of the beginning of a section of code.

Output:

Information transferred from the internal storage of a computer to output devices or external storage.

Overflow:

A condition that occurs when a mathematical operation yields a result whose magnitude is larger than the computer's data size is capable of handling.

Overlay:

A segment of a program that is brought into core upon request.

P

Page:

For the PDP-11, a 128_{10} word section of core memory, beginning at an address which is a multiple of 200_{8}.

PAL:

An Assembly Language which enables the programmer to write source (symbolic) programs using letters, numbers and symbols which are meaningful to him.

Parity Bit:

An additional nondata bit that is attached to a set of data bits to check their validity. ABBR., PB.

Pass:

An assembler usually requires two passes during which a source program is translated into binary code.

Patch:

To modify a program or routine by inserting a machine language correction in an object deck, or directly into the computer through the console.

PC:

See Program Counter.

PDP:

Programmed Data Processor.

Peripheral:

In a data processing system, any unit of equipment distinct from the central processing unit, which may provide the system with outside storage or communication. ABBR., PERIF.

PIP File Utility Package (Peripheral Interchange Program):

PIP performs file transfer and some editing and control functions for the PDP-11.

Position Independent Code (PIC):

This code uses addressing modes which form an effective memory address relative to the program counter (PC). Under DOS, source programs which are position independent may be loaded and run anywhere in available core without modification or relinking.

Priority Interrupt:

An interrupt which is given preference over other interrupts within the system.

Procedure:

A sequence of steps (or computer instructions) which collectively accomplish some desired task.

Processor Status Word:

A register which contains information on the current priority and state of the processor, and the result of previous operations.

Program:

An encoded algorithm used to perform a task. ABBR., PGM.

Program Counter (PC):

A register used by the control-unit to record the locations in memory (addresses) of the instructions to be executed. The PC (register 7 of the 8 general registers) always contains the address of the next instruction to be executed, or the second or third word of the current instruction.

PSW:

See Processor Status Word.

Punched paper tape:

A paper tape on which a pattern of holes is used to represent data.

pseudo-operation:

An instruction to the assembler; and operation code that is not part of the computer's hardware command repertoire.

Pushdown list:

A list that is constructed and maintained so that the next item to be retrieved is the item most recently stored in the list.

Q

Queue

A list. In DOS a queue of outstanding device driver requests is maintained.

R

Radix:

The base of a number system, the number of symbols required by a number system. See binary, octal.

Radix-5Ø

A format in which three ASCII characters (from a subset of all ASCII characters) are packed into a single 16-bit word.

Random access:

A mode of locating records independently of their relation to other records in a file.

Read:

1. To accept or copy information or data from input devices or memory register, i.e., to read out.
2. To position or deposit information into a storage or output medium, or a register, i.e., to read in. ABBR., RD.

Real-time:

Pertaining to computation performed while the related physical process is taking place so that results of the computation can be used in guiding the physical process.

Record:

A collection of related items of data in a file, treated as a unit.

Recursive subroutine:

A subroutine capable of calling itself and returning at some later point, to the program which initially called it.

Register:

A device capable of storing a specified amount of data, usually one word. See General Register. ABBR., REG.

Register deferred addressing, @Rn or (Rn):

See deferred addressing.

Relative Address:

1. The number that specifies the difference between the actual address and the program counter.
2. In the PDP-11 the character period (.) is used to represent the current location counter: addresses can be indicated relative to the current location counter; .+5 indicates five locations from the current location.

Relative addressing, A:

Addressing mode which computes the effective address of a relative address by adding the relative address to the updated PC. This mode is assembled as index mode using register 7.

Relative deferred addressing, @A:

This mode is similar to the relative mode, except that the second word of the instruction, when added to the PC, contains the address of the operand.

Relocatable:

Used to describe code which must be linked to resolve certain addresses and may be relinked to different addresses within core memory.

Relocation bias:

The constant whose value is the absolute base of the module after it has been relocated. With this constant all the addresses of locations in the source module will be incremented by the linker.

Response time:

Time between initiating some operation from a terminal and obtaining results. Includes transmission time to the computer, processing time, access time to file records needed, and transmission back to the terminal.

Restart:

To resume the execution of a program.

ROM:

Read-Only Memory.

Routine:

A set of instructions arranged in proper sequence to cause the computer to perform a desired task.

Run:

Execution of a program.

Run time:

The time in which a program is executed.

R/W:

Read/Write.

S

SAM:

Swap Area Manager.

Segment:

1. That part of a long program which may be resident in core at any one time.
2. To divide a computer program into parts such that the program can be executed without the entire program being in core at any one time.

Serial access:

Describes memory devices having structures such that data elements become accessible for read/write in sequential order; ex., magnetic tapes, circulating memories.

Shift:

A movement of bits to the left or right.

Simulate:

To represent the function of a device, system, or computer program with another system or program.

Single Operand Addressing:

Assembler operations which imply one operand (such as clear, increment, test) are handled by instructions that specify one address.

Single Step:

Manual operation of the computer in which each instruction is performed by setting the single-step or single instruction switch and repeatedly depressing CONTinue.

Software:

The collection of programs and routines associated with the computer.

Source Language:

See Language, source.

Source program:

A computer program written in a source language.

SP:

Stack Pointer.

Stack:

A pushdown list set aside by the system for temporary storage.

Stack Pointer (SP):

A pointer to keep track of the last item added to the stack.

Statement:

An expression or instruction in a source language.

Storage allocation:

The assignment of blocks of data and instructions to specified blocks of storage.

Storage capacity:

The amount of data that can be contained in a storage device.

Storage device:

A device in which data can be entered, retained, and retrieved.

Store:

To enter data into a storage device.

String:

A connected sequence of alphanumeric characters.

Subroutine:

A block of code which provides a facility for maintaining a single copy of a given routine which can be used in a repetitive manner by other programs located anywhere in memory.

Subroutine, closed:

A subroutine not stored in the main part of a program. Such a subroutine is normally called or entered with a JMP instruction and provision is made to return control to the main routine at the end of the subroutine.

Subroutine, open:

A subroutine that must be relocated and inserted into a routine at each place it is used.

SVT:

System Vector Table. A table in the DOS/BATCH Resident Monitor.

Swapping:

The movement of programs or program sections to and from secondary storage.

Switch:

A switch specification consists of a slash (/), followed by one or more letters or digits, and optionally followed by one or more value specifications; for example: /DATE: 24,3,70 might be a switch to enter March 24, 1970 in a date field.

Symbol Table:

A table in which symbols and their corresponding values are recorded.

Symbolic address:

A label assigned to a specific word in a routine for the convenience of the programmer.

Syntax:

The rules governing statement structure in a computer language.

System:

A combination of software and hardware which performs specific processing operations.

System Program:

A program (such as MACRO, ODT or EDIT) which enables the user, for example, to write, assemble, debug, or edit his own programs.

T

Table:

A collection of data stored for ease of reference; generally an array.

Temporary Storage:

Storage locations reserved for immediate results.

Terminal:

A peripheral device used for user communication with the system.

Time-sharing:

A method of allocating central processor time and other computer services to multiple users so that the computer, in effect, processes a number of programs simultaneously.

Time quantum:

In time-sharing, a unit of time allotted to each user by the Monitor.

Toggle:

1. Same as flip-flop.
2. Pertaining to any device having two stable states: on or off.
3. Using switches to enter data into the computer memory.

Transfer address:

The address where the execution of a load module has to start.

Translate:

To convert from one language to another.

Trap:

A series of errors and programming conditions which cause the processor to switch modes saving the previous program status word and program counter and replacing them with new values, stored in fixed locations (trap vector), corresponding to those required by the routine servicing the trap.

Some events which will cause traps:

1. power failures
2. addressing errors
3. TRAP, 1Ø7, EMT instructions

Truncation:

The reduction of precision by dropping one or more of the least significant digits; e.g., 3,141.592 truncated to 4 decimal digits is 3,141.

TTY:

Teletype.

Two's complement arithmetic:

See Complement.

U

UFD:

User File Directory. Contains the names and locations of all files created under UIC (User Identification Codes). (See MFD).

UIC:

User Identification Code. A code which associates a user with one of the UFD's on a device.

Underflow:

A condition that occurs when a floating point operation yields a result whose magnitude is smaller than the computer is capable of handling.

Unformatted:

See Formatted.

Unibus:

One of the key components of the PDP-11 architecture through which the Central Processor, memory, and all peripheral devices are connected together.

User:

Programmer or operator of computer systems.

User Program:

Any program other than a system program. See System Program.

V

Variable:

A symbol whose value changes during execution of a program.

Vector:

A pair of memory words in the address space below 4ØØ in core, consisting of a pointer to a service routine and priority status information for the processor. Each peripheral device in the PDP-11 system has a hardware pointer to its own vector. ABBR., VEC.

W

WC:

Word count.

Word:

In the PDP-11 a 16-bit unit of data which may be stored in one addressable even location. There are 2 bytes per word.

Write:

To transfer information from core memory to a peripheral device.