New Vocabulary of Advanced Linux Programming for Intermediate English learners.
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posted on github.com/k-five

preface

fitness	# noun. 1. the state of being physically healthy and strong – > a magazine on health and fitness # 2. the state of being suitable or good enough for something – > There were doubt about her fitness to hold office. = > Every effort has been made to make this book as complete and as accurate as possible, but now warranty or fitness is implied.
imply	# verb. AW. 1. to suggest that something is true or that you feel or think something, without saying it directly – > Are you implying (that) I am wrong? # 2. to make it seem likely that something is true or exists | synonym: suggest – > The fact that she was here implies a degree of interest. # 3. (of in idea, action, etc) to make something necessary in order to be successful | synonym: mean – > The project implies an enormous investment in training.
proofread	# verb. to read and correct a piece of written or printed work – > Has this document been proofread? # proofreader (: noun) – > to work as a proofreader for a publishing company = > proofreader: Debra Neel.
bachelor	# 1. a man who has never been married # 2. usually Bachelor: a person who has a Bachelor's degree (= a first collage degree) – > Bachelor of Arts / Engineering / Science = > Mark received a bachelor of arts degree in computer science from Harvard in 1994.
master	# noun. 1. {of services} a man who has people working for him, often as servants in his house – > They lived in fear of their master. # 5. {university degree} (also master's degree) a second university degree – > He has a Master's in Business Administration.
doctor	# noun. a person who has been trained in medical science, whose job is to treat people who are sick or injured – > You would better see a doctor about that cough. # 2. a person who has received that highest university degree – > a Doctor of Philosophy / Law = > He obtained a doctor of philosophy degree from Stanford in 2000.
expert	# noun. AW. a person with special knowledge, skill or training in something – > a computer / medical expert # adjective. down with, having, or involving great knowledge or skill – > an expert driver – > to seek expert advice / an expert opinion # + adverb. expertly

– > The music was expertly performed.

presently
adverb. at the time you are speaking or writing; now | synonym: currently
– > There are courses presently available.
= > He presently works as an online producer for scifi.com.

obsess
verb. [obsess something] to completely fill you mind so that you cannot think of anything else, in a way that is not normal
– > He is obsessed by computers.
2. [obsess (about something)] to be always taking or worrying about a particular thing, especially when this annoying other people
– > I think you should try to stop obsessing about food.
= > At home he runs Debian GNU/Linux and obsesses about such topics as system administration, security, software internationalization, and XML.

entice
verb. to persuade someone or something to go somewhere or to do something, usually by offering them something | synonym: persuade
– > The animals refused to be enticed from its hole.
– > Try to entice your son to eat by offering small portions of his favorite food.
= > This opportunity has enticed thousands of capable developers worldwide to contribute new components and improvement to GNU/Linux.

rival
a person, company, or thing that compete with another in sports, business, etc
– > Japan was their biggest economic rival.
adjective. a rival bid / claim / offer
verb. (l or ll) to be as good, impressive, etc as someone or something else | synonym: compare with
– > Golf cannot rival basketball for excitement.
= > The modern GNU/Linux systems rival the features of any proprietary system and distributions.

span
noun. 1. the length of time that something lasts or is able to continue
– > The project must be completed within a specific time span.
verb. to last all through a period of time or to cover the whole of it
– > His acting career spanned 55 years.

sophisticate
noun. a sophisticated person
– > She was not the sophisticated that Jack had imagined her to be

sophisticated
adjective. 1. having a log of experience of the world and knowing about fashion, culture, and other things that people think are socially important
– > Mark is a smart and sophisticated young man.
2. (of a machine, system, etc) advanced and complicated in the way that it works or presented
– > highly sophisticated computer systems
= > GNU/Linux's APIs provide access to sophisticated features such as interprocess communication, multi-treading and high performance networking.

predate
(also antedate) verb. [predate something] to be built or formed, or to happen, at an earlier date then something else in the past | opposite: postdate
– > Few of the town's fine building predate the earthquake of 1755
= > A great deal of this software predate the Linux kernel.

postdate # to happen, exist, or be made at a later date than something else in the past | opposite: predate

peculiar # adjective. 1. strange or unusual, especially in a way that is unpleasant or worrying | synonym: odd
– > a peculiar smell / taste
– > For some peculiar reason, she refused to com inside.

peculiarity # noun. (plural: peculiarities) 1. a strange or unusual feature or habit
– > a physical peculiarity
2. a feature that only belongs to one particular person, thing, place, etc | synonym: characteristic
– > the cultural peculiarities of Americans
= > To develop GNU/Linux you need to know the peculiarities of the system, its limitations, additional capabilities, and conventions.

applicable # adjective. that can be said to be true in the case of someone or something | synonym: relevant
– > Much of the form was not applicable (= did not apply) to me.
= > The information in this book is equally applicable to C++ program.

lingua franca # noun. a shared language of communication used between people whose main languages are different
– > English has become a lingua franca in many part of the world.
= > C languages APIs and conventions are the lingua franca of GNU/Linux.

convention # noun. AW. 1. a large meeting of the members of a profession, a political party, etc | synonym: conference
– > to hold a convention
2. the way in which something is done that most people in society expect and consider or be polite or the right way to do it
– > social convention
– > By convention the co-chair was always a woman.
= > This book follows a few typographical convention.

typography # noun. the art of work of preparing books, etc for printing, especially designing how text will appear when it is printed
adjective form: typographical and typographic
– > a typographical error
adverb form: typographically

typo # plural: typos. (informal) a small mistake in a typed or printed text.

Getting Started # 1

accustom # phrasal verb. accustom yourself / someone to something: to make yourself/someone familiar with something or become used to it
– > It took him a while to accustom himself to the idea.

accustomed # adjective. familiar with something and accepting it is normal or usual | synonym: used to
– > My eyes slowly grew accustomed to the dark.
– > This was not the kind of behavior I was accustomed to.
= > If you are already accustomed to programming under Linux, you can skip ahead to Chapter 2.

versus
preposition. (abbreviation: v. or vs.) 1. (sports or law) used to show that two teams or sides are against each other
– > It is Texas versus Nebraska in the championship game.
2. used to compare two different ideas, choice, etc
= > Pay careful attention to Section 2.3 "writing and using library", for more information about static versus dynamic linking that you might not already know.

contrast
noun. AW. 1. a different between two or more people or things that you can see clearly when they are compared or put close together; the fact of comparing two or more things in order to show the differences between them
– > There is obvious contrast between the cultures East and West.
= > We will occasionally point out similarities and contrast between Windows and Linux.

affectionate
adjective. showing caring feeing and love for someone | synonym; loving
– > He is very affectionate toward his children
– > an affectionate kiss
+ adverb form: affectionately
– > William was affectionately known as Billy.
= > Emacs (text editor) is affectionately known as the One True Program, or just OTP for short.

acquaint
[acquaint someone/yourself with something]: (formal) to make someone/yourself familiar with or aware of something
– > Please acquaint me with the fact of the case.
– > You will first need to acquaint yourself with the filing system.
= > If you want to get a little better acquainted with Emacs, choose the Emacs Tutorial entry on the help menu.

ambition
[C] 1. something that you want to do to achieve very much
– > It had been her lifelong ambition

ambitious
adjective. 1. determined to be successful, rich, powerful, etc
– > a fiercely ambitious young manager
= > If you are ambitious, you can program Emacs to perform literally any kind of automatic formating you can imagine.

manifest
formal, verb. [manifest something (in something)] to show something clearly, especially a feeling, an attitude, or a quality | synonym: demonstrate
2. manifest itself (in something): to appear to become noticeable | synonym: appear
– > The symptoms of the disease manifested themselves ten days later.
= > Also, in certain instances, compiling with optimization can uncover bugs in your program that did not manifest themselves previously.
adjective: formal, easy to see or understand

correspond
verb. AW. 1. to be the same as or match something | synonym: agree, tally
– > Your account and hers do not correspond.
2. to be similar to or the same as something else | synonym: equivalent
= > The British job of Lecturer corresponds roughly to the U.S. job of Associate Professor.
= > The object file should be rebuild whenever the corresponding source files change.

convey
verb 1. to make ideas, feeling, etc known to someone | synonym: communicate
– > Colors like read convey a sense of energy and strength.
= > You can convey all the information to make by putting the information in a file named Makefile.
2. (formal) to take, carry, or transport someone or something from one place to another
– > Pipe convey hot water from the boiler to the radiators.

trivial
adjective. not important; not worth considering
– > a trivial detail
– > I know it sound trivial, but I am worried about it.
= > If you now change main.c in some trivial way and type make again, you will see the following…

confirm
verb. AW. 1. to state or show that something is definitely true or correct, especially by providing evidence
– > His guilty expression confirmed my suspicions.
= > The above command confirms that the problem is indeed a NULL pointer passed into atoi.

denote
verb. formal. AW. to be sign of something | indicate
– > A very high temperature often denote a serious illness.
2. to mean something | synonym: represent
– > In this example X denotes the time taken and Y denotes the distance covered.
= > The number denote man page sections.

reside
verb. AW. + adverb / preposition, formal. to live in a particular place
– > He returned to the US in 1939, having resided abroad for may years.
= > There header file reside in /usr/include and /usr/include/sys.

verify
verb. 1. to check that something is true or accurate
– > We have no way to verifying his story.
2. [verify something | verify that …] to show or say that something is true or accurate | synonym: confirm
– > Her version of events was verified by neighbors.
= > … take a look in the corresponding header file to verify that the function's signature is the same as what is listed in the man page.

inquire
(also enquire) verb. (somewhat formal) to ask someone for some information
– > I called the school to inquire about the application process
thesaurus: ask, inquire, demand

inquirer
a person who asks for information

inquiring
adjective. 1. showing an interesting in learning new things
– > a child with an inquiring mind
= > There header files make a good reading for inquiring minds.

arbiter
[arbiter (of something)] a person with the power of influence to make judgment and decide what will be done or accepted
– > The law is the final arbiter of what is considered obscene
= > The final arbiter of how the system works in the system source code itself.

entitle
verb. 1. to give someone the right to have or to do something
– > You will be entitled to your pension when you reach 65.
= > … if not; you are entitled under the term of the GNU General Public License to request it from the distributer.
2. [entitle something + noun] to give a title to a book, play, etc

– > He read a poem entitled "Salt".

nitty-gritty # [the nitty-griity] [singular] (informal) the basic or most important details of an issue or a situation
– > Time ran out before we could get down to the real nitty-gritty.
= > On Linux systems. a lot of the nitty-griity details of how the the system call work are referenced in header files in the directories /usr/include/bits, ….

chapter 2 # Writing Good GNU/Linux Software, part 1

guide # noun. 1.{person} a person who shows other people the way to a place, especially someone employed to show tourists around interesting places
– > a tour guide
verb. { show the way } 1. [guide someone] to show someone the way to a place, often by going when them; to show someone a place that you know well
– > She guided us through the busy streets to the cathedrad.

guideline # noun. AW. 1. guidelines [plural] rules or instructions the are given by an official organization telling you how to do something, especially something difficult
– > The government has issued guidelines for controlling infection.
= > By following the guidelines presented, you will be able to write programs that work well within the GNU/Linux environment.
2. [C] something that can be used to help you make a decision or form an opinion
– > The figures are a useful guideline when buying a house.

originate # verb. formal. (+ adverb/preposition) to happen or appear for the first time in a particular place or situation
– > The disease is thought to have originated in the tropics.
= > More generally, this is referred to as the program's argument list because it need not originate form a shell command line.
2. to create something new
– > Locks originated this theory in the 17th century.
+noun: originator
– > Sir William James is thought to be the originator of fingerprinting as a means of identification.

brief # adjective. (briefer, briefest). 1. lasting only a short time; short
– > a brief visit / meeting / conversation

briefly # adverb. AW. 1. for a short time
– > She saw John briefly on Friday night.
2. in a few words
– > Briefly, the argument is as follows…

brevity # [U]. formal. 1. the quality of using few words when speaking or writing
– > The report is a masterpiece of brevity
= > Usually a program provides both a short option and a long option form for most options it supports, the former for brevity and the latter for clarity.

clarity
[U]. noun. AW. 1. the quality of being expressed clearly
– > a lack of clarity in the law

clarify
verb. AW. formal. 1. to make something clearer or easier to understand
– > to clarify a situation / problem / issue

-fy or -ify
suffix (in verbs) to make or become
– > purify

tedious
adjective. lasting or taking too long and not interesting | synonym: boring
– > We had to listen to the tedious details of his operation.
= > Parsing command-line options is a tedious chore.
thesaurus of boring: dull, tedious
boring: not interesting and making you feel tired and impatient
dull: not interesting or exciting: Life in a small town can be extremely dull.
tedious: lasting or taking too long and not interesting, so that you feel bored and impatient
+adverb: tediously
+noun: tediousness [U]

circumstance
noun. AW. [C]. (usually plural) the condition and facts that are connected with and affect a situation, an event, or an action
– > I know I can trust her in any circumstance.
= > In normal circumstances, the first field is the name of the long option; ….
thesaurus of situation: circumstances, position, conditions, things, the case, state of affairs
collocations:
in / under certain circumstance
exceptional / special circumstance
normal circumstance
suspicious circumstance
unusual circumstance

encounter
verb. AW. 1. [encounter something] to experience something, especially something unpleasant or difficult, while you are trying to do something else | synonym: meet with, run into
– > We encountered a number of difficulties in the first week.
= > if getopt_long encounters an invalid option it prints an error message and returns the character '?'.
2. formal. to meed someone, or discover or experience something, especially someone or something new, unusual or unexpected | synonym: come across
– > She was the most remarkable woman he had ever encountered
longman.dic: in every day English people usually say: come across problems/difficulties rather than encounter
– > Did you come across any problems?

respect
noun. a feeling of admiration for someone or something because of their good qualities or achievement
– > I have the greatest respect for you brother.
verb. to have very good opinion of someone or something; to admire something or something
– > I respect Jack's opinion on most subjects.

respective
adjective. belonging or relating separately to each of the people or things already mentioned
– > the respective roles of men and women in society

– > We all went back to our respective homes to wait for news.

respectively
adverb. in the same order as the people or things already mentioned
– > Julia and Mark, aged 17 and 19 respectively.
= > The standard C library provides standard input and output streams (stdin and stdout respectively).

customary
adjective. 1. if something is customary, it is what people usually do in a particular place or situation | synonym: usual
– > Is it customary to tip hairdressers in this country?
= > Int the UNIX tradition, use of standard input and output is customary for GNU/Linux programmers.

precede
verb. AW. [precede (someone/something)] to happen before something or come before something or someone in order
– > See the preceding chapter
= > Note that 2>&1 must follow a file redirection (the first example) but must precede a pipe redirection (the second example).

precedence
noun. AW. the condition of being more important than someone else and therefore coming or being dealt with first | synonym: priority
– > She had to learn that her wishes did not take precedence over other people's needs.

flash
verb. { shine brightly } 1. to shine very brightly for a short time; to make something shine in this way
– > Lightening flashed in the distance
– > the flashing blue lights of a police car

flush
verb. 1. (of a person or their face) to become red, especially because you are embarrassed, angry, or hot
– > She flushed with anger.
2. [flush something] when a toilet flushes or you flush it, water passes through it to clean it, after a handle, etc
= > You can explicitly flush the buffer by calling the following: fflush(stdout);.

distinguish
verb. to recognize the difference between two people or things | differentiate
– > [distinguish between A and B] At what are are children able distinguish between right and wrong?
= > Some programs usu different nonzero exit code values to distinguish specific errors.

enumerate
verb. formal. to name things on a list one by one
– > She enumerated the main points.
– > Let me enumerate the benefits for you.
= > Enumerating all the variables in the environment is a little trickier.
+noun: enumeration

collide
verb. if two people, vehicle, etc collide, they crash into each other; if a person, vehicle, etc collide with another or with something that is not moving, they crush into it
– > The car and the van collided had-on in think fog.
= > Te instances should use different temporary filenames so that they do not collide.
thesaurus of crash: slam, collide, smash, wreak

authorize   # verb. to give official permission for something, or for someone to do something

– > [authorize something] I can authorize payment up to $5.000.

unauthorized   # without official permission
– > unauthorized use of public funds
= > The file permissions of the temporary file should by set in such a way that unauthorized users cannot alter the program's execution by modifying or replacing the temporary file.

alter   # verb. AW. 1 to become different; to make someone or something different
– > Prices did not alter significantly during 2010.
longman.dic: to change or to make someone or something change
– > Her face had not altered much over the years.
thesaurus (to change something)
change: to make someone or something different
alter (especially written) to change something so that is better or more suitable
adapt: to change something slightly in order to improve it
adjust: to make small changes in the position
modify: (especially written) to make a small changes to something such as a piece of equipment, a set of ideas in order to improve it
and: reform, revise, reorganize, restructure

exploit   # verb. AW. 1. [exploit something] (disapproving) to treat a person or situation as an opportunity to gain an advantage for yourself
– > He exploited his father's name to get himself a job.
– > She realized that her youth and inexperience were being exploited.
= > …; otherwise, an attacker exploit the delay between testing whether a given name is already in use nad opening a new temporary file.

render   # verb. 1. { cause someone or something to be something } formal. to cause someone or something to be in articular state or condition | synonym: make
– > to render something harmless / useless / ineffective
= > Programmers should be very careful to clean up temporary files; otherwise the /tmp file system will fill up eventually, rendering the system inoperable.

rendering   # 1. the performance of a piece of music, a role in a play, etc; the particular way in which something is performed | synonym: interpretation, rendition

operable   # adjective. 1. that function, that can be used
– > When will the new system be operable?
(of a medical condition) that can be treated by an operation

inoperable   # 1. (of an illness, especially cancer) not able to be cured by a medical operation
– > an inoperable brain tumor
2. formal. that cannot be used or made to work; to practical
– > The policy was thought to be inoperable.

suffer   # S1, W1, verb. to experience physical or mental pain
– > At least he died suddenly and did not suffer.
in everyday English people usually say that someone has a medical condition rater then suffering from it.
– > Both her children have asthma.
= > Do not use these functions, though, because they suffer from the reliability and security problems already mentioned.

chapter 2	# Writing Good GNU/Linux Software, part 2
defend	# verb. {protect against attack} 1. to protect someone or something form attack – > All our officers are trained to defend themselves against knife attacks.
defender	# noun. 1. a person who defends and believes in protecting something – > a passionate defender of human right # 2. a player who must stop the other team form scoring in games such as soccer, hockey, etc
defensive	# adjective. 1. protecting someone or something against attack – > a defensive measure # + defensively = > coding defensively # + defensiveness
grace	# noun. {of movement} 1. [U] an attractive quality of movement that is smooth, elegant and controlled – > She moves with the nature grace of a ballerina. # verb. 1. [grace something] to make something more attractive; to decorate something – > We sat at a small table graced with a vase of fresh flowers.
graceful	# adjective. 1. moving in controlled, attractive way or having a smooth, attractive form – > The dancers were all tall and graceful. # + gracefully – > Deer ran gracefully between the trees. = > Writing programs that run correctly under 'normal' use is hard; writing programs that behave gracefully in failure situation is harder.
detect	# verb. AW. [detect something] to discover or notice something, especially something that is not easy to see or hear, etc – > The test are designed to detect the disease early. # thesaurus of notice: note, detect, observe, witness # + detectable AW opposite of undetectable
detection	# noun. AW. [U] the process of detecting something; the fact of being detected – > Early detection of cancer is vitally important.
detective	# noun. abbreviation: Det. 1. a person, especially a police officer, whose job is to examine crimes and catch criminals # see private detective
detector	# a piece of equipment for discovering the pressure of something, such as metal, smoke, explosions, or changes in pressure or temperature – > a smoke detector
obscure	# adjective. 1. not well done | synonym: unknown – > He was born around 1650 but his origins remain obscure. # 2. difficult to understand # verb. [obscure something] to make it difficult to see, hear, or understand something – > The view was obscured by fog. (fog: a thick could of very small drops of water in the air close to the land)

extensive

\# adjective. 1. covering a large area; great in amount

– > The house has extensive grounds.

\# 2. including or dealing with the wide range of information | synonym: far-reaching

– > Extensive researches has been done into this disease.

= > The code samples presented later in this book deliberately skip extensive error checking and recovery code because the would obscure the basic functionality.

robust

\# adjective. 1. strong and healthy

– > She was almost 90, but still very robust.

\# 3. (of a system or an organization) strong and not likely to fail or become weak

– > robust economic growth

= > A sample GNU/Linux applications comes back to demonstrating how to use these techniques to write robust programs.

objective

\# noun. 1 something that you are trying to achieve | synonym: goal

– > The main objective of this meeting is to give more information on our plans.

= > A good objective to keep in mind when coding applications program is that

….

exhibit

\# verb. AW. 1. to show something in a public place for people to enjoy or to give them information

– > Only one painting was exhibited in the artist's lifetime.

\# 2. synonym: display

– > The patient exhibited sings of fatigue and memory loss.

= > Failures that do not exhibit themselves dramatically are often missed and do not show up until the application is in users hands.

impose

\# verb. AW. [impose something (on/upon something/someone)] to introduce a new law, rule, tax, etc to order that a rule, punishment, etc be used

– > A new tax was imposed on fuel.

\# 2. to force someone or something to have to deal with something that is difficult or unpleasant

– > This system imposes additional functional burdens on may people.

= > For performance-critical code, runtime checks such as uses of assert can impose a significant performance penalty.

significant

\# adjective. AW. 1. large or important enough to have an effect or to be noticed

– > a highly significant discovery

penalty

\# plural: penalties. 1. punishment for breaking a law, rule, or contract

– > to impose a penalty

\# 2. a disadvantage suffered as a result of something

– > One of the penalty of fame is the loss the privacy.

\#\# fame: noun. the state of begin known and talked about many people (see famous)

tempt

\# verb 1. to attract or make someone want to do or have something, even if they know it is wrong

– > I was tempted by the desert menu.

= > You might be tempted to write: assert(do_something() == 0);

\# 2. to persuade or try to persuade someone to do something that you want them to do, for example by offering them something

– > How can we tempted young people into engineering?

cryptic
with a meaning that is hidden or not easily understood | synonym: mysterious
– > a cryptic message / remark / smile
= > Users do not like it when applications simply crash into a cryptic error messages.
+adverb form: cryptically

encrypt
verb. [encrypt something] (computing) to put information into a special code, especially in order to prevent people from looking at it with authority | opposite: decrypt
+ noun form: encryption

informative
giving useful information
– > The talk was both informative and entertaining
= > The error message generated by {assert (pointer != NULL)}; is more informative than the error message result if your program dereferenced a null pointer: or Segmentation fault (core dumped)

hold back
hold back (from doing something) to hesitate or to make someone hesitate to actor speak
– > She held back, not knowing how to break the terrible news.
– > I wanted to tell him the truth, but something held me back.
= > Do not hold back; use assert liberally throughout your programs.

hesitate
verb. to be slow to speck or act because you feel uncertain or nervous
– > She hesitated before replying.

liberal
adjective. AW. willing to understand and respect other people's behavior, opinion, etc
– > liberal attitude / view / opinions
+ adverb form: liberally
– > Apply the cream liberally

intrude
to go or be somewhere where you are not wanted or are not supposed to be
– > I am sorry to intrude, but I need to talk to someone.
= > The realities of computers hardware and software intrude into this idealized dream.

exceed
verb. formal. 1. [exceed something] to be greater than a particular number or amount
– > The price will not exceed $100.
2. to do more than the law or an order, etc, allows you to do
– > She was exceeding the speed limit (= driving faster than is allowed).
= > The system can run out of resources (or the program can exceed the resources limits enforced by the system of a single program).

faulty
adjective. 1. not perfect; not working or make correctly | synonym: defective
– > Ask for a refund if the product is faulty.
= > The device might be faulty or might not support a particular operation.

defect
noun. a fault in something or in the way it has been made that means that it is not perfect
– > a speech defect
– > a defect in the glass

outright
adjective. 1. complete and total
– > She was the outright winner.
= > This might not indicate outright failure, but it is the responsibility of the calling program to restart the system call. if desired.

devote # verb. to give most or your time, energy, attention, etc. to someone or something

– > She devote herself to her career.
to give an amount of time, attention, etc to something
– > I could only devote two hours a day to the work
= > In a well-written program that makes extensive use of system calls, it is often the case that more code is devoted (= dedicate) to detecting and handling errors and other exceptional circumstances than to the main work or the program.

postmortem # a medical examination of th body of a deal person in order to find out how they died | synonym: autopsy
– > To do / conduct / carry out a postmortem
= > 'assert' macro can be useful for postmortem debugging.

clobber # verb. informal. [clobber someone] to hit someone very bad
– > If you do it again, I will clobber you!
3. to defeat someone completely
– > We got clobbered in the game an Saturday.
= > Save 'errno' because it is clobbered by the next system call.

outlive # verb. 1. to live longer than someone
– > He outlived his wife by there years.
2. [outlive something] to continue to exist after something else has ended or disappeared
– > The machine had outlived its usefulness (= was no longer useful).
= > You might need to manually free other shared resources, however, such as temporary files and shared memory, which can potentially outlive a program.

deploy # 1. [deploy someone/something] (technical) to move soldiers or weapons into a position where they are ready for military action
– > 2,000 troops were deployed in the area.
– > At least 5,000 missiles were deployed along the border.
= > If you choose to link statically, your program will be bigger and harder to upgrade, but probably easier to deploy.
2. to use something effectively

trade-off # noun. [trade-off (between something and something)] the act of balancing two things that are opposed to each other
– > a trade-off between increased production and a reduction in quality.
= > This section explains how to link both statically, and dynamically, examines the trade-off in more details.

mutual # adjective. AW. 1. used to describe feeling that two or more people have for each other equally, or actions that affect two or more people equally
– > mutual respect / understanding
+ noun form: mutuality
+ adverb form: mutually
– > Can we find a mutually convenient time to meet?
= > Occasionally, two libraries will be mutually dependent.

arise # verb. (#2 arose, #3 arisen) formal (especially of a problem or a difficult situation) to happen; to start exist | synonym: occur
– > A storm arose during the night.
= > This situation generally arises out of poor design.

substantial
adjective. 1. large in amount, value, or importance | synonym: considerable
– > substantial sums of money
= > However substantial reasons exist to use static library.

mission-critical
adjective. essential for an organization or function successfully
– > mission-critical employee
= > For example if you developing mission-critical software, you might link your program to a static archive so that an upgrade to shared library on the system will affect your program.

thereby
adverb. formal. AW. used to introduce the result of the action or situation mentioned
– > Regular exercise strengthens the heart, thereby reducing the risk of heart attack.
= > Otherwise, users might upgrade the shared library, thereby breaking your program.

burden
verb. to give someone duty, responsibility, etc that cause worry, difficulty, or hard work
– > I do not want to burden you with my worries | opposite: unburden
noun. a duty, responsibility, etc that cause worry, difficulty or hard work
– > The main burden of caring for old people falls on the family.
= > Because each user has to do this individually, this is a substantial additional burden.

mangle
verb. [mangle something] to crush or twist something so that it is badly damaged
– > His hand was mangled in the machine.
= > This prevents the C++ compile from mangling the function name, which would changed the function's name form 'foo' to a different funny-looking name.
noun. (also winger) a machine with two rollers used especially in the past for squeezing the water out of clothes that had been washed

chapter 3
Processes

cooperate
to work together with someone else in order to achieve something
– > The two groups agreed to cooperate with each other.
– > They had cooperated closely in the planning of the project.
= > Advanced programmers often use multiple cooperate processes in a single application to enable the application to do more than one things at once …

thus
adverb. formal. 1. as a result of something just mentioned | synonym of hence, therefore
– > He is the eldest son and thus heir to the estate.
= > Every process also have a parent process. Thus you can think of the processes on a Linux system as arranged in a tree with the init process as tis root.
2. in this way; like this
– > Many scholars have argued thus

observe
(not used in the progressive tense) to see or notice someone or something
– > Have you observed any changes lately?
thesaurus of comment: note, remark, observe

variant # noun. AW. a thing that is a slightly different from or type of something else
– > This game is a variant of baseball.
= > The GnU/Linux version of ps has lots of options because it ties to to be compatible with versions of ps on several other UNIX variants.
+adjective form: variant
– > variant forms of spelling

invocation # noun. 1 (formal) the act of asking for help, from a gold a person in authority; the act of referring to something or of calling for something to appear
2. (computing) the act of making a particular function start
= > This invocation of ps shows two processes.

relative # 1. considered and judged by being compared with something else
– > the relative merits of the two plans

relatively # to a fairly large degree, especially in comparison to something else
– > I found the test relatively easy.
= > Two common techniques are used for creating a new process. The first in relatively simple. (= using system() function)

sparing # adjective. careful to use or give only a little of something
– > Doctors now advice only sparing use of such creams.
+adverb form: sparingly
– > Use the cream very sparingly
= > The first is relatively simple but should be used sparingly because it is inefficient and has considerably security risks.

flaw # noun. 1. a mistake in something that means that it is not correct or does not work correctly | synonym: defect, fault
– > The argument is full of fundamental flaws.
= > Because the system function uses a shell to invoke your command, it is subject to the features, limitations, and security flaws of the system's shell.

subject # adjective. [subject to something] likely to be affected by something, especially something bad
– > Flights are subject to delay because of the fog.
– > Smokers are more subject to heart attack than non-smokers.

privilege # noun. a special right or advantage that a particular person or group of people has
– > Educational should be a universal right and not a privilege.
– > Try not to abuse the privilege of being allowed more freedom.
= > Invoking a program with root privilege with the system function, for instance, can have different results on different GNU/Linux systems.

cease # verb. /sis/ formal. to stop happening or existing; to stop something from happening or existing
– > You never cause to amaze me!
= > … the exec family, that causes a particular process to cease being an instance or one program and to instead become an instance of another program.

spawn # verb (of fish, frogs, etc) to lay eggs
= > To spawn a new process, you first use fork() to make a copy fo the current process.
noun. a soft substance containing the eggs of fish, flogs, etc

distinct # adjective. 1. easily or clearly heard, seen, felt, etc
– > There was a distinct smell of gas.
2. clearly different or of a different kind
= > So how do the processes differ? First, the child process is a new process and therefore has a new process ID, distinct from its parent's process ID.

analogous # adjective. formal. [analogous (to/with something)] similar in some way to another thing or situation and therefore able to be compared with it
– > Sleep has often been thought of as being in some way analogous to death.
= > The argument list passed to the program is analogous to the command-line argument that you specify to a program when you run it from the shell.

converse # verb. formal. to have a conversation with someone
– > She conversed with the Romanians in French.
– > The two men were conversing on music and opera.

converse 2 # noun. singular. formal. usually the converse: the opposite or reverse of a fact or statement
– > Building new roads increases traffic and the converse is equally true; reducing the number and size of roads means less traffic

conversely # adverb. formal. in a way that is the opposite or reverse of something
– > You can add fluid to the powder, or, conversely, the powder to the fluid.
= > A higher niceness value means that the process is given a lesser execution priority; conversely, a process with a lower (that is negative) niceness gets more execution time.

disposition # the natural qualities of a person's character | synonym: temperament
– > to have a cheerful disposition
– > people with a nervous disposition
3. (formal) the way something is placed or arranged | synonym: arrangement
= > When a process receive a signal, it may do one of several things, depending on the sign's disposition.
= > For each signal, there is a default disposition, which determines what happens to the process if the program does not specify some other behavior.

fragile # adjective. 1. easy to broken or damaged
– > fragile china / glass / bones
– > Be careful not to drop it; it is very fragile.
= > Because signals are asynchronous, the main program may be in a very fragile state when a signal is processed and …

periodic # adjective. AW. happening fairly often and regularly
– > Periodic checks are carried out on the equipment.
+adverb form: periodically
– > Periodically, we meet to discuss any problems.
= > The main program then checks periodically whether a signal has occurred and reacts accordingly.

diagnose # verb. to say exactly what an illness or the cause of a problem is
– > The test is used to diagnose a variety of diseases.
= > While this may sound like a rare occurrence, if it does occur, ti will be very difficult to diagnose and debug the problem.

corrupt
adjective. (of people) willing to use their power to do dishonest or illegal things in return for money or to get an advantage
– > a corrupt regime
2. (of behavior) dishonest or immoral
3. (computing) containing changes or faults, and no longer in the original state
– > corrupt software
+adverb form: corruptly
verb. to have a bad effect on something and make them behave in an immoral or dishonest way
– > He was corrupted by power and ambition.
= > … a second signal may occur between them, leaving the variable in a corrupted state.

midway
adverb. in the middle of a period of time; between two place | synonym: halfway
– > The hotel is situated midway between the two airports.
= > Linux guarantees that assignment to variables of this type are performed in a single instruction and therefore cannot be interrupted midway.

skeleton
noun. the structure of bones that supports the body of a person or an animal; a model of this structure
– > The human skeleton consists of 206 bones.
3. the main structure that supports a building, etc | framework
– > Only the concrete skeleton of the factory remained.
4. the basic outline of a plan, piece or writing, etc to which more details can e add later
= > This program skeleton in Listing 3.5 for instance, uses a single-handler function to count the number of time …

troublesome
adjective. causing trouble, pain, etc over a long period of time | synonym: annoying
– > a troublesome cough / child / problem

statistic
noun. AW. 1. statistics (also informal: stats) a collection of information shown in numbers
– > crime / unemployment etc statistics
3. (also informal stat)[C] a piece of information shown in number
– > An important statistic is that 94 percent of crime relates to property.
= > the wait3 functions returns CPU usage statistics about the existing child process, and …

vanish
verb. to disappear suddenly and/or in a way that you cannot explain
– > He turned around and vanished into the house.
2. stop existing
– > All thoughts of leaving vanished from his mind.
= > If a child process terminates while its parent is calling a wait function, the child process vanishes and its termination status is passed to its parent via the wait call.

terminate
verb. formal. AW. to end; to make something end
– > Your contract of employment terminates in December
= > A zombie process is a process that has terminated but has not been cleaned up yet.

elegant # adjective. 1. (of people or their behavior) attractive and showing a good sense of style | synonym: stylish
– > She was tall and elegant.
3. (of a plan or an idea) showing skill and imagination, but simple
– > an elegant solution to the problem
= > A more elegant solution is no notify the parent process when a child terminates.

chapter 4 # Threads

concept # noun. AW. an idea or a principle that is connected with something abstract

conceptual # adjective. formal. related to or based on ideas
– > a conceptual model
+ adverb form: conceptually
– > conceptually distinct
= > Conceptually, a thread exists within a process.

consult # verb. AW. 1. to go to someone for information or advice
– > If the pain continues, consult your doctor.
thesaurus of talk: discuss, speak, communicate, debate, consult

beforehand # adverb. earlier; before something else happens or is done
– > I wish we would known about it beforehand.
= > To check for this beforehand, you might use code like this: …

fashion # noun. a popular style of clothes, hair, etc at a particular time or place; the state of being popular
– > Long skirts have come into fashion again.
idiom: in (a) … fashion. formal. in a particular way
– > How could they behave in such a fashion?
= > Often a thread may be in some code that must be executed in an all-or-nothing fashion.

constitute # verb. formal. AW. liking-verb + noun: to be considered to be something
– > Does such an activity constitute a criminal offense?
2. synonym: make up
= > What constitute a cancellation point, and where should these be placed?

pending # preposition. formal: while waiting for something to happen; until something happens
– > He was released on bail pending further investigation.
= > This (= pthread_testcancel)d does nothing except process a pending cancellation in a synchronously cancelable thread.
adjective. formal. 1. waiting to be decided or settled
– > Nine cases are still pending.
2. going to happen soon
– > a presidential election is pending.

entire # adjective. including everything, everyone, or every part | synonym: whole
– > The entire village was destroyed.

entirely # adverb. in every way possible; completely
– > I entirely agree with you.

entirety # noun. formal [the entirety of something] the whole of something
– > The poem is too long to quote in its entirety
= > A critical section is a sequence of code that must be executed either in its entirety or not at all.

orderly # adjective. 1. arranged or organized in a neat, careful, and logical way | synonym: tidy
– > a woman with an orderly mind
behaving well, peaceful
– > an orderly demonstration

audit # noun. 1. an official examination of business and financial records to see that they are true and correct
– > an annual audit
= > For audit purpose, each thread is to have a separate log file, in which progress messages for that thread's tasks are recorded.
verb. to officially examine the financial accounts or a company
– > We have just had our accounts audited.

intention # noun. what you intend to plan to do; your aim
– > I have no intention of going to the wedding.
= > Using this technique, a function indicates its intention to exit the thread by throwing a ThreadExitException instead of calling pthread_exit directly.

percolate # verb 1. (of a liquid, gas, etc) to move gradually through a surface that has very small holes or spaces in it
– > Water had percolated down through the rocks.
2. to gradually become known or spread through a group or society

ultimate # adjective. 1. happening at the end of a long process | synonym: final
– > our ultimate goal / aim / objective / target
2. most extreme; best; worst; important, greatest, etc
– > This race will be the ultimate test of your skill.
– > The ultimate cause of most bugs involving threads is that the threads are accessing the same data.

partway # (or part-way) some of the way
– > They were partway through the speeches when he arrived.
= > If one thread is only partway through updating a data structure when another thread accesses the same data structure, chaos is likely to ensue.

chaos # noun. a state of complete confusion and lack of order
– > Heavy snow has caused total chaos on the highways.

ensue # verb. formal. to happen after or as a result of another event | synonym: follow
– > an argument ensued
+ adjective form: ensuing

concurrent # adjective. existing or happening at the same time
– > he was imprisoned for two concurrent terms of 30 months and 18 months.
= > Suppose that your program has a series of queued jobs that are processed by several concurrent thread.
+ adverb form: concurrently
– > The prison sentences will run concurrently

coincidence # noun. AW. the fact of two things happening at the same time by chance, in a surprising way
– > What a coincidence! I was not expecting to see you here.

thesaurus of luck: chance, coincidence, accident, fate, destiny
= > By unfortunate coincidence, we now have two threads executing the same job.

lavatory
noun. a room with a toilet and a sink, especially on a plane
= > Think of mutex (= Mutual Execution lock) as the lock on a lavatory door.

occupy
1. [occupy something] to fill or use a space, in area or an amount of time | synonym: take up
– > The bed seemed to occupy most of the room.

occupant
noun. AW. 1. a person who lives or works in a particular house, room, building, etc
– > All outstanding bills will be paid by the previous occupants.

emerge
verb. AW. 1. to come out of a dark or hidden place
– > The swimmer emerged from the lack.
= > If someone attempts to enter the lavatory while it is occupied, the person will find the door locked and will be forced to wait outside until the occupant emerges.

semaphore
noun. a system for sending signals in which you hold your arm or two flags in particular position to represent different letters of the alphabet
verb. to send message to someone by semaphore or similar system of signal
= > 4.4.5 Semaphore for Threads

spin
verb. 1. {turn around quickly} to turn around and around quickly; to make something do this
– > My head is spinning (= I feel as if my head is going around and I cannot balance).

inverse
adjective. 1. opposite in amount or position to something else
– > A person's wealth is often in inverse proportion to their happiness (= the more money they have, the less happy they are).
+ adverb form:
– > We regard heath as inversely related to social class.
= > A condition variable enables you to implement a condition under which a thread execute, and inversely, the condition under which the thread is blocked.

conjunction
1. (grammar) a word that joins words, phrases or sentences for example: 'and', 'but', 'or'
2. (formal) a combination of events, etc that causes a particular result
idiom: in conjunction with: (formal) together with
– > The system is designed to be used to conjunction with a word processing program.
= > Each condition variable must be used in conjunction with a mutex to prevent this sort of race condition.

intervene
verb. 1. to become involved in a situation in order to improve or help it
2. to interrupt someone when they are speaking in order to say something
– > "But", she intervened, "What about the others?"
= > GNU/Linux allows you to unlock the mutex an wait on the condition variable atomically, without the possibility of another thread intervening.

accompany   # verb. AW. [accompany someone] (formal) to travel or go somewhere with someone
– > His wife accompany him on the trip.
2. to happen or appear with something else
– > strong winds accompanied by heavy rain
= > Remember that each condition variable should be accompanied by a mutex.

acquire   # verb. AW. formal. to obtain something by buying or being given it
– > The company has just acquired new premises.
2. to get; to gain something by your own efforts, ability or behavior
In everyday English people usually say get instead of acquire
– > Where did you get that tie?

broadcast   # verb. to send out programs on television or radio
– > Most of the program are broadcast in English.
= > 3. Signal or broadcast the condition variable, depending on the desired behavior.

discard   # verb. 1. to get rid of something that you no longer want or need
– > The room was littered with discard newspapers.
= > … a condition variable discard the wake-up call unless some thread is actually blocked on it at the same time.
2. (in card game) to get rid of a card that you no longer want

sufficient   # adjective. AW. enough for a particular purpose; as much as you need
– > Allow sufficient time to get there.
– > One does should be sufficient.
opposite: insufficient
adverb form: sufficiently
– > The following day she felt sufficiently well to go to work.
= > In a sufficiently unfortunate scheduling scenario, Linux may schedule thread A long enough to lock mutex 1, and then schedule thread B, …

prompt   # adjective. 1. done without delay | synonym: immediate
– > Prompt action was required at the fire spread
verb. 1 to make someone decide to do something; to cause something to happen
noun. a word or words to to actor, to remind them with to say next when they have forgotten
adverb. exactly at the time mentioned
– > The meeting will begin at ten o'clock prompt.

promptly   # adverb. 1. without delay
2. exactly at the correct time or at the time mentioned
= > … the schedule thread B, which promptly locks mutex 2.

scenario   # noun. 1. a description of how things might happen in the future
– > Let me suggest a possible scenario.
a written outline of what happens in the movie or play | synonym: synopsis

arbitrary   # adjective. AW. (of an action, a decision, a rule, etc) not seeming to be based on a reason, system or plan and sometimes seeming unfair
– > The choice of players for the team seemed completely arbitrary.
adverb form: arbitrarily
– > The leaders of the groups were chosen arbitrarily.
= > The condition protected by a condition variable can be arbitrarily complex.

dictate
verb. [dictate (something)(to someone)] to say words for someone else to write down
– > He dictate a letter to his assistant.
3. to control or influence how something happens | synonym: determine
= > In GNU/Linux, the behavior is dictated by the fact that threads are implemented as processes.
noun. formal. an order or rule that you must obey

ambiguity
noun. AW. 1. the state of having more than one possible meaning
– > Write clean definitions in order to avoid ambiguity.
= > … there is no ambiguity about which thread receives the signal.

ambiguous
adjective. 1. that can be understood in more than one way, having different meaning
– > an ambiguous word / term / statement

errant
adjective. formal. 1. doing something that is wrong; not behaving in an acceptable way
– > errant father who refuse to pay child support
= > An errant thread can harm other threads in the same process because threads share the same virtual memory space and other resources.

coarse
adjective. (coarser, coarsest) 1. (of skin or cloth) rough | opposite: soft, smooth
= > Processes should be used for programs that need coarser parallelism.
2. containing of relatively large pieces
– > coarse sand / salt / hair
3. rude and offensive, especially about sex
adverb form: coarsely

cumbersome
adjective. 1. large and heavy; difficult to carry | synonym; bulky
– > cumbersome machinery
slow an complicated
= > IPC (= Interprocess communication) can be more cumbersome but makes multiple processes less likely to suffer from concurrency bugs.
(of word or phrase) long and complicated

chapter 5
Interprocess Communication

circumvent
verb. formal. [circumvent something] to find a way of avoiding a difficulty or a rule
– > They found a way of circumvent the law.
= > This chapter describes means for interprocess communication that circumvent these limitations.

socket
1. = outlet
2. a device on a piece of electrical equipment that you fit a plug, a light bulb ,etc into
– > an antenna socket on the television
= > This transfer of data usually uses socket in a telephone-like connection.
3. a curved hollow space in the surface of something that another part fits into or move around in
– > His eyes bulged in their sockets.

inter-   # prefix (in verb, noun, adjective, and adverb) between, from one to another
– > interface
– > interaction
– > international
– > interprocess communication

criterion   # (plural: criteria) noun. AW. a standard or principle by which something is judged, or with the help of which a decision id made
– > What criteria are used for assessing a student's ability?
= > These types of IPC differ by the following criteria: …

ancestor   # 1. a person in your family who lived a long time ago | synonym: forebear
– > His ancestor had come to America from Ireland.
3. an early form of a machine that later become more developed | synonym: forerunner
– > (I am not sure for this example that be true) … processes with a common ancestor …

halt   # verb. to stop, to make someone or something stop
– > She walked toward him and then halted.
= > …, a reading process is halted until data is available to read.

clutter   # verb. to fill a place with too many things, so that it is messy
– > I do not want all these files cluttering my deak.
= > Our illustrative programs, though, just show a single process accessing the memory, to focus on the shared memory mechanism and to avoid cluttering the sample code with synchronization.

segment   # noun. 1. a part of something that is separate from other part or can considered separately
– > She cleaned a small segment of the painting.
= > After finishing its use of the segment, each process detached the segment.
2. one of the sections of a an orange, a lemon, etc
verb. (technical) to divide something into different part
– > The worm has a segmented body (= with different sections joined together).

brand new   # completely new
– > a brand new computer
– > She bought her car brand new.
= > Using the special constant IPC_PRIVATE as the key value guarantees that a brand new memory segment is created.

grant   # verb. AW. to agree to give someone what they ask for, especially formal or legal permission to do something
– > My request was granted.
in everyday English people usually say: give permission rather than grant permission (=formal)
= > This value is made of 9 bits indicating permission granted to owner, group, and the other …

violate   # verb. AW. formal. to go against or refuse to obey a law, an agreement, etc | synonym: flout
– > to violate international law
Each shared memory segment should be explicitly deallocated using smctl when your are finished with it, to avoid violating systemwide limit on the total number of shared memory segment.

erroneous
adjective. AW. formal. not correct; based on wrong information
– > erroneous conclusion/assumption
adverb form: erroneously
– > The bank erroneously transferred the money to her account.
= > If this memory segment was erroneously left behind by a program, you can use the ipcrm command.

bi-
combining form (in noun and adjective) two; twice; double
– > bidirectional
= > Shared memory segments permit fast bidirectional communication among any number of processes.

protocol
noun. 1. a system of fixed rules and formal behavior used at official meeting, usually between government
– > a branch of protocol
(computing) a set of rules that control the way data is sent between computers
= > … some protocol to prevent race conditions …

coordinate
verb. AW. to organize the different parts of an activity and the people involved in it so that it works well
– > We need to develop a coordinated approach to the problem.
= > As noted in the previous section, processes must coordinate access to shared memory.

undo
(undoes, undid, undone) 1. to open something that is fastened, tied or wrapped
– > to undo a button / knot / zip etc
2. to cancel the effect of something
– > He undid most of the good work of the previous manager.
= > … Linux automatically undoes the operation on the semaphore when the process exits.

volunteer
noun. a person who does a job without being paid for it
– > volunteer helper

voluntarily
adverb. 1. willingly; without being forced
– > He was not asked to leave – he went voluntarily
= > When a process terminate, either voluntarily or involuntarily, the semaphore's value are automatically adjusted to 'undo' the process's effects on the semaphore.
2. without payment; free
– > The fund is voluntarily administered

map
noun. a drawing of the earth's surface or part of it, showing countries, town, rivers, etc
– > a map of California
verb. (pp) 1. to make a map of an area | synonym: chart
2. [map something] to discover or give information about something, especially the way it arranged or organized
– > It is now possible to map the different functions of the brain.
= > To map an ordinary file to a process's memory, use the mmap.

hint
noun. 1. something that you say or do it in indirect way in order to show someone what you are thinking
– > He gave a broad hint (= one that was obvious) that he was thinking of retiring.
3. synonym: sign

4. synonym: suggestion, trace
5. synonym: tip

constraint # noun. AW. 1. [C] a thing that limits or restricts something, or your freedom to do something | synonym: restriction
– > constraint of time / money / space
thesaurus of limit: restriction, control, constraint, restraint, limitation
2. strict control over the way that you behave or are allowed to behave
– > At last we could relax and talk without constraint.
= > The flag value is a bitwise 'or' of these constraint: MAP_FIXED, MAP_PRIVATE, MAP_SHARED.

uni- # combining form (in noun, adjective, and adverbs) one; having one
– > uniform
= > The function returns a uniformly random number in the range [low, high].

incorporate # verb. 1. to include something so that is forms a part of something
– > The new car design incorporates all the latest safety features.
= > Alternatively, you can force Linux to incorporate buffered writes into the disk file by calling msync.
2. (business) to create a legally recognized company.
– > The company was incorporated in 2008.

unary # involving only one member of a set at a time

binary # 1. (computing, mathematics) using only 0 or 1 as a system of numbers
– > the binary system
2. (technical) based on only two member, consisting of two parts
– > binary code/numbers

capacity # noun. AW. 1. the number of things or people that a container or space can hold
– > The theater has a seating capacity of 2,000.
= > A pipe's data capacity is limited

snooze # verb. informal. to have a short light sleep, especially during the day and usually not in bed
– > My brother was snoozing on the sofa.
= > /* Snooze a while */ sleep(1);

equate # verb. to think that something is the same as something else or is as important
– > Some parents equate education with exam success.
= > Using the dup2 call, you can equate one file descriptor with another.

equation # noun. AW. 1. a statement showing that two amount or value are equal, for example $2x + y = 54$

interchange # noun. 1. the act of sharing or exchanging something, especially ideas or information
– > a continuous interchange of ideas
verb. 1. to share or exchange ideas, information, etc
– > Cable technology will make it possible for people to interchange information on a rapid two-way basis.
= > The call closes standard input and then reopens it as a duplicate of fd so that the two may be used interchangeably.

ease
noun. 1. lack of difficulty
– > He passed the exam with ease.
– > This computer is popular for its good design and ease of use.
verb. 1. to become or to make something less unpleasant, painful, severe, etc | synonym: alleviate
– > This should help ease the pain.
= > The popen and pclose function ease this paradigm by eliminating the need to invoke pipe, fork, dup2, exec and fdopen.

eliminate
verb. AW. to remove or get rid of something or someone
– > Credit cards eliminate the need to carry a lot of cash.

interleave
verb. to put something, especially thin layers of something, between things
= > Chunks from simultaneous writes can be interleaved. Similar rules apply to simultaneous reads.

simultaneous
adjective. happening or done at the same time as something else
noun form: simultaneity
adverb form: simultaneously
– > The game will be broadcast simultaneously on TV and radio.

simulate
verb. to pretend that you have a particular feeling | synonym: feign
– > I tired to simulate surprise at the news.
2. to create particular conditions that exists in read life using computers, models, etc usually for study or training purpose
– > Computer software can be used to simulate conditions on the seabed (= the floor of the ocean).

simulated
adjective. not read, but made to look, feel, etc like the real thing
– simulated leather

simulation
noun. AW. – > a simulation model

transmit
verb. AW. to send electronic signal, radio or television broadcast, etc
– > signal transmitted from a satellite
2. synonym: transfer
– > sexually transmitted diseases
3. synonym: conduct

transit
noun. AW. 1 the process of being moved or carried from one place to another
– > The cost includes transit.
– > goods damages in transit
2. a system of buses, trains, etc the people use to travel form one place to another
– > the transit system
= > Packet may be lost or reordered in transit due to network errors or other conditions.

incoming
adjective. 1. recently elected or chosen
– > the incoming mayer / president / administration
= > …, placing a call to listen that enables connections to the socket, placing calls to accept incoming connections, and then closing socket.

bind
verb. (bound, bound) 1. to tie someone or something with rope, string, etc so that they cannot move or are held together firmly
– > She was bound to the chair.

domain   # noun. AW. 1. an area of knowledge or activity; especially one that someone is responsible for
3 (computing) a set of Web site on the Internet which end with the same group of letters, for example '.com', '.org'.
= > There are called local socket or UNIX-domain socket.

reside   # verb. AW. formal. to live in a particular place
– > He returned to the US in 1939, having resided abroad for many years.
= > Because it resides in the file-system, a local socket is listed as a file.

resident   # noun. 1. a person who lives in a particular place or who has their home there

layer   # noun. 1. a quantity or thickness or something that lies over a surface or between surfaces
– > a thin layer of dust covered everything
2. a level or part within a system or set of ideas
– > There were too many layers of management in the company.
verb. [layer something] to arrange something in layers
– > Layers to potatoes and onions in the dish.
– > Her hair was layered (= cut to several different length).
= > The Transmission Control Protocol (TCP), layered on top of IP provides reliable connection-ordered transport.

transport # verb. AW. 1. to take something or someone from one place to another in a vehicle
– > to transport goods / passengers
2. synonym: carry

chapter 6 # Devices

module   # noun. 1. (computing) a unit of a computer system or program that has a particular function
2. one of the set of separate parts or units that can be joined together to make machine, a piece of furniture, a building, etc
= > Linux like most operating system, interacts with hardware devices via modularized software components called device drivers.

on-demand # adjective. done or happening whenever someone asks
– > The new network promises lightening-fast access to on-demand video.
= > Under Linux, device drivers are part of the kernel and may be either linked statically into the kernel or loaded on demand as kernel modules.

be of use # idiom: be of use (to someone) formal: to be useful
– > Can I be of any use(= can I help)?
= > These are not linked to hardware devices; instead, they provide various kinds of specialized behavior that can be of use to application and system programs.

caution   # noun. 1. care that you take in order to avoid danger or mistake; not taking any risks
– > Statistics should be treated with caution.
– > Use caution (= be careful) when you drive on ice roads.
= > Exercise Caution When Accessing Devices!

misuse # noun. the act of using something in a dishonest way or for the wrong purpose | synonym: abuse
– > the misuse of power / authority
verb. to use something in the wrong way or for wrong purpose | synonym: abuse, ill-treat
= > Use these techniques with care because misuse can cause impair or damage the GNU/Linux system.

impair # verb. [impair something] formal. to damage something or make something worse
– > His age impaired his changes of funding a new job.
thesaurus of damage: hurt, harm, impair

inflict # verb. to make someone or something suffer something unpleasant
– > Heavy casualties were inflicted on the enemy.
= > …, a root process can inflict severe damage by changing the contents of the disk.

severe # adjective. 1. {very bad} extremely bad or serious
– > His injuries are severe.

unusable # adjective. in such a bad condition or of such low quality that it cannot be used | opposite usable
= > … , thus rendering a drive or even the entire system unusable.

slave # noun. 1. (chiefly in the past) a person who is legally owned by another person and is forced to work for them
– > She treated her daughter like a slave.
– > slave owner
3. (technical) a device that is directly controlled by another one
= > An IDE controller can have two devices (disk tape, or CD-ROM drives) attached to it; the 'master' device has minor device number 0, and the 'slave' device has minor device number 64.

No. # abbreviation (plural Nos or nos) number
– Room No. 134
2. north; northern

portal # noun. formal. large impressive gate or entrance to a building
2. (computing) a Web site that is used as a point of entry to the Internet, where information has been collected that will be useful to a person interested in particular kinds of things
– > a business / news / shopping portal
= > …, the device entry is merely a portal for communication with the driver, if it is there.

daemon # a creature in stories from ancient Greece that is half man and half god

semantic # adjective. connected with the meaning of words and sentences
– > semantic analysis
= > …, often the different character devices provide different semantics.
adverb form: semantically
– > semantically related words

authentic # adjective. 1. known to be real and genuine and not a copy
– > I do not know if the painting is authentic | opposite: inauthentic
2. true or accurate

authenticate

\# verb. to prove that something is genuine, real or true
– > Experts have authenticated the writing as that of Byron himself.
= > If you need to authenticate users in your program, you should learn about GNU/Linux's PAM facility.
\# noun form: authentication

enlighten

\# [enlighten someone] verb. formal. to give someone information so that they understand something better
– > She did not enlighten him about her background

enlightenment

\# noun. 1. knowledge about and understanding of something; the process of understanding something or making someone understand it
– > The newspapers provided little enlightenment about the cause of the accident
= > Gnome windowing environment uses the Enlightenment Sound Daemon (= EsounD).

inevitable

\# adjective. AW. 1. that you cannot avoid or prevent
– > It was an inevitable that there would be job losses.
= > This behavior is inevitable because computers are intrinsically deterministic and predictable.
\# noun form: inevitability
– > The inevitability of death

intrinsic

\# adjective. belonging to or part of the real nature of something or someone
\# compare to extrinsic
\# adverb form: intrinsically

deterministic

\# determinism. noun (philosophy) the belief that people are not free to choose what they are like or how they behave, because these things are decided by their surroundings and other things over which they have no control
\# adjective form: deterministic

keystroke

\# noun. a signal action of pressing a key on a computer or typewriter keyboard
– > This software keeps a log of every keystroke typed on the keyboard.
= > By measuring the time delay between your input actions, such as keystrokes and mouse movements, …

exhaust

\# noun. 1 waste gases the come out of a vehicle, an engine or a machine
– > car exhaust fumes
\# verb. to make someone fell very tired
– > Even short walk exhausted her.
= > The difference between the two devices exhibits itself when Linux exhausts its store of randomness.

crypto-

\# combining form. (in nouns) secret
– > a crypto-communist

cryptography

\# noun. [U] the act of writing or solving codes
= > …, it is sometimes possible to break a cryptographic algorithm if you can obtain the sequence of random number that is employed.

confirm

\# verb. to state or show that something or definitely true or correct, especially by providing evidence
– > Please write to confirm your reservation (= say that is is definite)

confirmation

\# noun. AW. 1. a statement, letter, etc you shows that something is true correct, or definite
– > I am still waiting for confirmation of the test result.

newly # adverb. recently
– > a newly qualified doctor
= > …, information about newly created file system.

intact # adjective. complete and not damage | synonym: undamaged
– > Most of the house remains intact even after two hundred years.
= > …, the whole file system that you created on it (=virtual disk) will be intact.

hijack # 1. [hijack something] to use violence or threats to take control of a vehicle, especially a plane, in order to fore it to travel to a different place or to damage something from a government
= > if you read from it, you will hijack keyboard input that would otherwise be sent to the program running in the PTY.
2. to use or take control of something, especially a meeting, in order to advertise you own aims and interests

supply # noun. 1. an amount of something that is provided or available to be used
– > The water supply is unsafe.
verb. to provide someone or something with something that they need or want, especially in large quantities
= > Depending on the request code, they may by additional argument supplying data to ioctl.

beyond # preposition. 1. on or to the further side of something
– > The road continues beyond the village up into the hills.
5. too far or too advanced for someone or something
– > The handle was just beyond my reach.
= > Most of these are quiet specialized and are beyond the scope of this book.
adverb. on the other side; further on
– > The immediate future is clear, by it is hard to tell what is lies beyond.

eject # verb. formal. to force someone to leave a place | synonym: throw out
– > Police ejected a crowd of violent protesters from the hall.
= > Listing 6.2 presents a short program that eject the disk in a CD-ROM drive (if the drive supported this).

chapter 7 # The /proc File System

on the fly # informal. if you do something on the fly, you do it quickly while something else is happening, and without thinking about it very much
= > Instead they are generated on the fly by the Linux kernel when you read from the file.

precede # verb. AW. 1. [precede someone/something] to happen before something or come before something or something in order
– > See the preceding chapter.
= > The output is a table of values, one per line, with a description of the value end a colon preceding each line.

view # noun. 1. a personal opinion about something, an attitude toward something
– > to have different / confident / opposing views
thesaurus of sight: view, vision
1. {think about something} to think about someone or something in a particular way
– > how do you view your position within the company.
2. {look at something} [view something] to look at something, especially when you look carefully
– > People come from all over the world to view her work.
= > To view it, invoke this command: man 5 proc

bail # noun. money that someone agree to pay if a person accused of a crime does not appear at their trail. When bail has been arranged, the accused person is allowed to get free until trail
– > Can anyone post an bail for you?
verb. to release someone in bail
– > His son called home to get bailed out of jail
2. to leave a place, especially quickly
– > Sorry I really have to bail.
= > /* Bail if read failed or if buffer is not big enough. */

interpret # verb. AW. to explain the meaning of something
– > The students were asked to interpret the poem.
= > We will describe the interpretation of some of these fields in Section 7.3.1 "CPU Information".

degrade # verb. 1. [degrade someone] to show or treat someone in a way that makes them seem not worth any respect or not worth taking seriously
– > This poster is offensive and degrades woman.
3 [degrade something] to make something become worse, especially in quality
= > If you use them in a program, you should make user that the program's behavior degrades gracefully if the /proc entry is missing or is formatted unexpectedly.

comprehend # verb. formal. to understand something fully
– > It stood staring at the dead body, unable to comprehend.
thesaurus of understand: see, get, follow, grasp, comprehend
– > I do not understand the instructions.
– > Oh, yes. I see what you mean.
– > She did not get the joke.
– > I do not get you.
– > The failed to grasp the importance of his works.

comprehensible # adjective. formal. that can be understood by someone | opposite: uncomprehensible
= > status contains lots of status and statistical information about the process, formatted to be comprehensible by humans.
– > easily readily comprehensible to the average reader

breakdown # noun. 1. an occasion when a vehicle or machine stops working
– > a breakdown on the highway

auxiliary # adjective. 1. (of workers) giving help to support to the main group of workers | synonym: ancillary
2. (technical) (of a piece of equipment) used if there is a problem with the main piece of equipment
– > an auxiliary pump
= > For many program, auxiliary files are installed in directories with known paths relative t the main program executable, …
noun. (grammar) a verb such as be, do, have, used with main verb to show tense, etc and from questions, and negatives

vendor # noun. 1. a person who sells things, for example food or newspaper, usually outside on the street
– > street vendor
2. formal. a company that sells particular product
– > software vendor.
– > The Vendor, CPU family, Model, and Stepping fields enable you to determine the exact model and revision of the CPU.

precursor # noun. formal. a person or thing that comes before someone or something similar and that leads to or influences its development | synonym: forerunner
= > EGGS, the Experimental GNU Compiler System, was a precursor to the current GCC project.

quantum # noun. (physics) (plural: quanta) a very small quantity of electromagnetic energy

explanatory # adjective. giving the reasons for something; intended to describe how something works, or to make something easier to understand
– > There are explanatory notes at the back of the book.

self-explanatory # adjective. easy to understand and not needing any more explanation
– > I think the title is self-explanatory.

none # pronoun. not one of a group of people or things; not any
– > None of these pens work.
grammar rule:
When you use none of with an uncountable noun, the verb is singular: None of the work was done.
When you use none of with a plural noun, the verb is plural: None of the trains are going to Boston.
When you use none of with a noun referring to a group or people or things, the verb is usually singular: None of her family has been to collage.

outstanding # adjective. 1. extremely good, excellent
– > an outstanding player / achievement / success
thesaurus of excellent: outstanding, perfect, superb
– > He speak excellent English.
– > She is an outstanding dancer.
– > She came up with a perfect excuse.
– > (formal) The facilities at the hotel are superb.
2. very obvious and important
– > the outstanding of the landscape
= > The /proc/locks entry describes all the file locks currently outstanding in the system.

uptime # the time during which a machine, especially a computer is working | opposite: downtime

downtime	# 1. the time during which a machine, especially a computer is not working
idle	# adjective. 1. (of people) not working hard | synonym: lazy – > an idle student # verb. to spend time doing nothing important – > The /proc/uptime file contains the length of time since the system was booted, as well as the amount of time since then the system has been idle.
instant	# adjective. 1. happening immediately | synonym: immediate # noun. 1. very short period of time | synonym: moment
instantaneous	# adjective. happening immediately – > an instantaneous response = > The next entry shows the instantaneous current number of runnable tasks, …
chapter 8	# Linux System Call
exert	# verb. [exert something] to use power or influence to affect someone or something – > He exerted all his authority to made them accept the plan. = > Some system calls are very powerful and can exert great influences on the system.
or	# conjunction. 1. used to introduce another possibility – > Is your sister older or younger than you? # idiom. or so: about. – > It will cost $140 or so. = >The next 30 or so lines are part of the mechanism that loads the standard C library from a shared library file.
garbled	# adjective. (of a message or story) told in a way that confuses the person listening, usually by someone who is shocked or in the hurry | synonym: confused – > There was a garbled message from her on my voice mail. = > This may appear garbled when you run strace because the output from the hostname program itself is mixed in with the output form strace.
zero	# verb. [zero something] to turn an instrument, control, etc to zero = > to place a lock on a file, first create and zero out a struct flock variable.
outage	# noun. a period of time when the supply of electricity, etc in not working = > – for instance, due to a kernel crash or power outage – any data …
integrity	# noun. AW. 1. the quality of being honest and having strong moral principles – > personal / professional / artistic integrity # 2. (formal) the state of being whole and not divided | synonym: unity = > However, the behavior can make programs that depends on the integrity of disk-based records unreliabe.
transact	# verb. formal. to do business with a person or an organization – > buyers and sellers transacting business = > For example suppose you are writing a transaction-processing program that keeps a journal file.

exceed # verb. formal. AW. 1. to be greater than a particular number of amount
– > the price will not exceed $100.
2. to do more than the law or an order, etc allows you to do
– > She was exceeding the speed limit (= driving faster than is allowed)
= > If a program exceeds this time limit, it is terminated with a SIGXCPU signal.

throttle # verb. [throttle someone] to attack or kill someone by squeezing their throat in order to stop them from breathing. | synonym: strangle
noun. a device that controls the amount of fuel that goes into the engine of a vehicle, for example the accelerator in a car
– > He drove along at full throttle (= as fast as possible).
= > Typically, an application program will reduce the soft limit to a place a throttle on the resources it uses.

commit # verb. AW. 1. {crime}
2. {suicide}
9. {something to paper/writing} to write something down
= > You can also open a file for synchronous I/O, which causes all writes to be committed to the disk immediately.

behalf # noun. AW. in order to help someone
– > We collected money in behalf of homeless.
[on behalf of someone | on someone's behalf]
1. as the representative of someone or instead of them
– > On behalf of the department, I would like to thank you all.
= > System time is CPU time spent executing the user system calls on behalf of the process.
2. because of someone; for someone
– > Do not worry on may behalf.
3. in order to help someone

elapse # verb. formal. if a period of time elapsed, it passes | synonym: go by
– > Many years elapsed before they met again.
= > This struct timeval value represents the number of seconds elapsed since the start of the UNIX epoch.

elapsed time # noun. (technical) used to describe the time that passes between the start and end of a project or a computer operation, in contrast tot he actual time needed to do a particular task that is part of the project

fraction # noun. 1. a small part of amount of something
2. a division of a number for example 5/8

fractional # adjective. formal. very small; not important | synonym: minimal
– > There was a fractional hesitation before he said yes.
2. (mathematics) of or in fractions
= > Notice that neither localtime nor strftime handles the fractional part of the current time more precise than 1 second.

precise # adjective. AW. 1. clear and accurate | synonym: exact

precisely # adverb. 1. exactly

precision # noun. AW. the quality of being accurate, and careful | synonym: accuracy

intrude # verb. 1. to go or be somewhere you are not wanted to or are not supposed to be
– > I am sorry to intrude, but I need to talk to someone.

intruder # noun. 1. a person who enters a building or an area illegally
= > …, where they might be recovered by an intruder after the program

terminates.

discriminate # verb. AW. to recognize that there is a difference between people or things; to show a difference between people or things | synonym: differentiate, distinguish
– > The computer program was unable to discriminate between letters and numbers.
– > When do babies learn to discriminate voices?

indiscriminate # adjective. 1. an indiscriminate action is done without thought about what the result may be, especially when it causes people to be harmed
– > Doctors have been criticized for their indiscriminate use of antibiotics
2. action without careful judgment
– > She have always been indiscriminate in her choice of friends
= > Indiscriminate memory locking is a good method of bringing your system to a grinding halt because …

grind # verb. (ground, ground) 1. {food,flour,coffee} to break or crush something into very small pieces between two hard surfaces

bypass # noun. 1. a medical operation on the heart in which blood is directed along different route so that it does not flow through a part that is damaged or blocked; the new route that the blood takes.
– > heart bypass surgery
verb. 1 to go around or avoid a place
2. to ignore a rule, an official system, someone in authority, especially in order to get something done quickly

subsequent # adjective. AW. formal. happening or coming after something else | opposite: previous
– > subsequent generations

subsequently # adverb. AW. formal. afterward; later; after something else has happened
– > The original interview notes were subsequently lost.
= > When a program subsequently writes to memory, Linux sends it SIGSEGV, …

interval # noun. 1 period of time between to events
– > The interval between major earthquakes might be 200 years.
= > This additional precision cab be useful, for instance, to schedule frequent operation with short time intervals between them.

blast # noun. 1. an explosion or a powerful movement of air caused by an explosion
verb. 1. to violently destroy or break something into pieces, using explosion
5. to direct air, water, etc at someone or something with a lot of force
– > Police blast the demonstrators with water cannons.
= > /* Blast the bytes from one file to another */ (= of sendfile system call)

chapter 9 # Inline Assembly Code

yield # verb. [yield something] to produce or provide something, for example a profit, result or crop
– > The research has yielded useful information
= > Higher-level languages such as C and C++ run on nearly all architectures and yield higher productivity when writing and maintaining code.

sine # (abbreviation: sin) (mathematics) the ratio of the length of the side opposite one

of the angles in a right triangle that are less than 90-degree to the length of the longest side

cosine # (abbreviation: cos) (mathematics) the ratio of the length of the side next to an acute angle in a right triangle to the length side (= hypotenuse)

resort # noun. a place where a lot of people go on vacation
– > island / ski / mountain , etc resorts
3. the first / last / final resort. the first or the last course of action that you should or can take in a particular situation
– > In the last resort (= in the end) everyone must decide for themselves.
= > You should use inline assembly code to speed up code only as a last resort.

intuitive # adjective. 1. (of ideas) obtained by using your feeling rather than by considering the facts
– > He had an intuitive sense of what the reader wanted.
3. (of computer software, etc) easy to understand and to use

roundabout # adjective. not done or said using the shortest, simplest or most direct way possible
– > It was a difficult and roundabout trip.
= > Therefore, compliers can often choose code sequences that may seem unintuitive or roundabout but that actually execute faster than other instruction sequences.

parenthetical # (also parenthetic) adjective. formal. given extra information in a speech or piece of writing
– > parenthetical remarks
= > The keyword 'asm' is followed by a parenthetic expression consisting of section separated by colons.

enclose # verb. to build a wall, fence, etc around something
– > The yard had been enclosed with iron railings.
2. to surround something
= > The first section contains the assembly instructions enclosed in quotation marks.

coerce # verb. formal. to force someone to do something by using threats
– > They were coerced into negotiation a settlement.
= > This is to coerce the compiler's optimizer so that is does not eliminate the entire bit position computation; …

presence # (of a person) the fact of being in a particular place | opposite: absence
– > He hardly seemed to notice my presence.
in the presence of (someone/something): with the someone/something in the same place
– > The document was singed in the presence of two witnesses.
= > GCC's optimizer attempts to rearrange and rewrite program's code to minimize execution time even in the presence of 'asm' expression.

conserve # verb. [conserve something] to use as little of something as possible so that it lasts long time
– > Help to conserve energy by insulating your home.
2. to protect something and prevent it from being changed or destroyed
– > new laws to conserve wildlife in the area

conservation # noun. 1. the protection of the natural environment
– > to be interested in wildlife conservation

conservative   # adjective. opposite to great or sudden social change; showing that you prefer traditional styles and values
– > The conservative view of his parents
= > GCC is forced to make conservative guesses that may prevent some optimizations. Caveat emptor!
noun. 1. a conservative person

caveat   # noun. formal. a warning that particular things need to be considered before something can be done.
– > Any discussion of legal action must be preceded by a caveat about fees.

caveat emptor   # the principle that a person who buys something is responsible for finding any faults in the thing they buy
– > The sale is subject to the caveat emptor principle.

chapter 10   # Security

compromise   # noun. 1. an agreement made between two people or groups in which each side gives up some of the things they want to that both side are happy at the end
– > After lengthly talk the two sides finally reached a compromise.
verb. to give up some of your demands after a disagreement with someone, in order to reach an agreement
– > Neither side is prepared to compromise.
= > When this happens, the system's security is said to have been compromise.

beach   # noun. [breach of something] a failure to do something that must be done by law
– > a breach of contract / copyright / warranty
= > But to avoid security breaches, ordinary applications must be careful as well.
verb. 1. [breach something] to not keep to an agreement or not keep a promise | synonym: break
– > The government is accused of breaching the terms of the treaty (= a formal agreement between two or more countries).

enforce   # verb. AW. 1. to make sure that people obey a particular law or rule
– > It it the job of the police to enforce the law.
= > To enforce these kinds of controls, you have to be very careful. It amazingly easy to make a mistake.

enlist   # verb. 1. to join or to make someone join the armed force | synonym: draft
– > They both enlisted in 1915.
2. to persuade someone to help you or to join in doing something
– > The hoped to enlist the help of the public in solving the crime.
= > The best approach is to enlist the help of security experts.

misbehave   # verb. to behave badly | opposite of behave
– > Any child caught misbehaving had to stand at the front of the class.
= > If any of these programs misbehave, chaos can result.

proceed   # verb. AW. to continue doing something that has already been started; to continue being done
– > Work is proceeding slowly.
= > When the process make a system call, the kernel decides whether to allow the operation to proceed.

opaque   # adjective. 1. (of glass, liquid, etc) net clear enough to see through or allow light through
– > opaque glass
= > Just treat them as opaque handles for user and group identity.
2 (of speech or writing) difficult to understand; not clear | synonym: impenetrable | opposite: transparent

therein   # adverb. formal. law. in the place, object, document, etc mentioned
– > The insurance policy covers the building and any fixtures contained therein
= > If a user is allowed to execute a directory, the user is allowed to enter that directory and access the files therein.

mal-   # combining form (in noun, verb and adjective) bad or badly; not correct or correctly
– > malpractice
– > malfunction

malice   # noun. a feeling of hated for someone that causes a desire to harm them
– > He sent the letter out of malice.

malicious   # adjective. having or showing hated and desire to harm someone or hurt their feeling
– > She took malicious pleasure in telling me what she had said.
= > But a malicious user can make a copy of the program, change the permission to make in executable, and then run the copy!

please   # verb. 1. to make someone happy
– > You cannot please everybody. | opposite: displease
2. often used after as or what, where, etc to mean 'to want' or 'to choose' or 'to like' to do something
– > You may stay as long as you please.
– > She always does exactly as she please.
= > A process whose effective user ID is 0 can do absolutely anything it please.

artifact   # noun. technical. an object that is make by a person, especially something of historical or cultural interest
= > Swapping the two user IDs is almost a historical artifact; modern program rarely use this functionality.

divine   # adjective. coming from or connected with God or a god
– > divine law/love/will
– > divine intervention (= help form God to change a situation)
= >So, if you even need root access on a machine and the sys-admin is not around, a little divine inspiration might be just what you need.

inspire   # verb. 1. to give someone the desire, confidence, or enthusiasm to do something well
– > The actors inspired the kids with their enthusiasm.

inspiration   # noun. 1. the process that takes place when someone sees or heres something that causes them to have exciting new ideas or make them want to create something, especially in art, music, or literature
– > Dream can be a rich source of inspiration for an artist.

biometric   # using measurement of human features, such as fingers, or eyes, in order to identify people
– > Biometric system have several advantages over conventional identification methods.

= > In a really secure facility, retinal scans or other kinds of biometric testing are used.

retina
a layer of tissue at the back of the eye that is sensitive to light and sends signals to the brain about what is seen
adjective form: retinal

seize
verb. to take someone or something in your hand suddenly and using force | synonym: grab
– > She tried to seize the gun from him.

malignant
1. (of tumor or disease) that cannot be controlled and is likely to cause death
– > malignant cells
2. (formal) having or showing a strong desire to harm someone

feat
an action or a piece of work skill that needs skill, strength or courage
– > The tunnel in a brilliant feat of engineering.
= > The usual mechanism to achieve this feat is to overwrite some portion of the program's process stack.

engage
verb. 1. formal. to succeed in attracting and keeping someone's attention and interest
– > It is a movie that engages both the mind and the eye.
5. when a part of a machine engages, or when you engage it, it fits together with another part of the machine and the machine begin to work.
– > The cogwheels are not engaging.
= > A program that does not engage in network communications is much safer because only users who are already able to log in to the computer, running the program are able to attack it.

vital
adjective. 1. necessary or essential in order for something to succeed or exist
– > vital information
3. (of a person) full of energy and enthusiasm | synonym: dynamic

disastrous
very bad, harmful or unsuccessful | synonym: devastating
– > a disastrous harvest / fire / result
= > Even if they (= malicious users) have to try 10,000 times before winning the race condition, that one time could be disastrous.

overly
too, very
– > I am not overly fond of pasta.
= > Some programmers believe that C++ is a horrible and overly complex language.

merit
noun. 1. formal. the quality of being good and of deserving praise, reward or admiration | synonym: worth
– > a work of outstanding artistic merit
– > The plan is entirely without merit.

dissuade
to persuade someone not to do something
– > I tried to dissuade him from giving up his job.
= > To help dissuade you, we have deliberately made the interface difficult to use in real program.

fishy
adjective. 1. informal. that makes you suspicious because it seems dishonest | synonym: suspicious
– > There is something fishy going on here.

ostensible # adjective. seeming or stated to be real or true, when this is perhaps not the case | synonym: apparent
– > The ostensible reason for his absence was illness.
adverb form: ostensibly

chapter 11 # A Sample GNU/Linux Application

jumping-off point # (also jumping-off place) noun. a place from which to start a trip or new activity
– > Northeastern Tennessee is a good jumping-off point for a trip to the Great Smoky Mountains.
= > It can serve as a jumping-off point for your own GNU/Linux programs.

shield # noun. 1. a large piece of metal or leather carried by soldiers in the past to protect the body when fighting
verb. to protect someone or something form danger; harm, or something unpleasant
– > I shielded my eyes against the glare.
= > This enables the server to remain responsive even when individual requests take a while to complete, and it shields the severs form failures in modules.

tune # verb. to adjust a musical instrument so that it plays at the correct pitch
2. to adjust an engine so that it runs smoothly and as well as possible
= > The server is not tuned for high performance or minimum resource usage.

intentional # adjective. done deliberately | synonym: deliberate, intended
– > I am sorry I left your off the list – it was not intentional.
adverb form: intentionally
– > She would never intentionally hurt anyone.
= > In particular, we intentionally omit some of the network configuration code that your would expect in a Web server.

comply # verb. to obey a rule, an order, etc
– > They refused to comply with the U.N resolution.

compliance # the practice of obeying rules or requests made by people in authority
– > procedures that must be followed to ensure full compliance with the law
= > Similarly, we do not aim for full compliance with HTML specifications.

regulate # verb. AW. to control something by means of rules
– > The activities of credit companies are regulated by law.
2. to control the speed, pressure, temperature, etc in a machine or system
– > This valve regulate the flow of water.
= > We make no attempt to regulate the resources consumed by the server or its modules.

compose # verb. 1. formal. to combine together to form a whole | synonym: make up
– > Ten men compose the committee.

composed # adjective. 1. to be made or formed from several parts, things, or people
– > The committee is composed mainly of lawyers.
= > HTTP requests and headers are composed of plain text.

all but # adverb. idiom. 1. almost
– > The party was all but over when we arrived.
2. everything or everyone except something or someone
– > All but one of the plates were damaged.

= > All but the very smallest programs written in C require careful organization ….

export	# verb. Aw. 1. to sell and send goods to another country
	– > The island export sugar and fruit.
	# 3. (computing) to send data to another program, changing its form so that the other program can read it | opposite: import
	= > Each source file exports functions or variables that may be accessed by the other parts of the program.
compile	# verb. AW. 1. to produce a book, list, report, etc by bringing together different items, articles, songs, etc
	– > We are trying to compile a list of suitable people for the job.
	# 2. (computing) to translate instructions form one computer language into another so that a particular computer can understand them
compiler	# noun. 1. a person who compiles something
	# 2. (computing) a program that translates instructions form one computers language into another for a computer to understand
compilation	# noun. AW. 2. the process of compiling something
	– > The compilation of a dictionary
	= > Functions that are intended for use within a single compilation unit only are declared static and are not declared in server.h.
catastrophe	# noun. 1. a sudden event that causes many people to suffer | synonym: disaster
	– > Early warning of raising water levels prevented another major catastrophe.
	# adjective form: catastrophic | synonym: disastrous
	– > catastrophic effect / losses / results
	= > Allocation failure all usually catastrophic, so aborting the program is often acceptable course of action.
verbose	# adjective. formal. disapproving. using or containing more words than are needed | synonym: long-winded
	– > a verbose speaker / style
	= > The variable 'verbose' is nonzero if the program is running in verbose mode.
progress	# noun. 1. the process of improving or developing, or of getting nearer to achieving or completing something
	– > to make progress
	# verb. to improve or develop over a period of time; to make progress | synonym: advanced.
	– > The course allows students to progress at their own speed.
	= > In this case, various parts of the program print progress messages to 'stdout'.
solve	# to find a way of dealing with a problem or difficult situation
	– > Attempts are being made to solve the problem of waste disposal.
resolve	# verb. formal. to find an acceptable solution to a problem or difficulty | synonym: settle
	– > to resolve an issue/ a dispute / a conflict / a crisis
	= > This function opens the shared library with 'dlopen' and resolved a symbol named 'module_generate' form the library with 'dlsym'.
malformed	# adjective. technical. badly formed or shaped
	= > Either the requested page was malformed or we could not open a module

with the indicated name.

override	# verb. 1. to use your authority to reject someone's decision, order, etc | synonym: overrule – > The chairman overrode the committee's objections and signed the agreement. = > The user may override this with the - - module-dir (-m) option; …
manner	# noun. 1. formal. the way that something is done or happens – > She answered in a businesslike manner. # idiom: in the manner of someone/something. formal. in a style that is typical of someone or something – > a painting in the manner of Raphael. = > You could also adapt the main server implementation to serve static files in the manner of a traditional Web server.
ongoing	# adjective. continuing to exist or develop – > ongoing debate / discussion / progress – > The police investigation is ongoing.
A appendix	# A – Other Development Tools
appendix	# (plural: appendixes) noun. 1. a small bag of tissue that is attached to the large intestine. In human, the appendix has no clear function – > He had to have his appendix out (= removed). # 2. the act of giving extra information at the end of a book or document – > Full details are given in Appendix 3. = > In this appendix, we discuss development tools to find runtime errors such as illegal use of dynamically allocated memory …
reveal	# verb. AW. 1 to make something known to someone | synonym: disclose – > [reveal something (to someone): to reveal a secret # 2. to show something that previously could not be seen | synonym: display – > He laughed, revealing a line of white teeth. = > Analyzing a program's source code can reveal some of this information; …
pedantic	# adjective. disapproving: too worried about small details or rules # adverb form: pedantically = > If you specify the -pedantic option, GCC emits warnings demanded by strict ANSI C and ISO C++ compliance.
emit	# verb. (tt) formal. to send out something such as light, heat, sound, gas, etc – > The metal container began to emit a clicking sound.
thorough	# adjective. done completely; with great attention to detail – > a thorough knowledge of the subject
thoroughly	# adverb. 1. very much; completely – > I can thoroughly recommend it. = > To test the program thoroughly, you must run the program using different inputs to ensure that every possible path through the program occurs.
annotate	# verb. to add notes to a book, or text, giving explanation or comments = > The first step in profiling a program is to annotate its executable to collect profiling information. # adjective form: annotated

– > an annotated edition
noun form: annotation

cumulative # adjective. 1. having a result that increases in strength or importance each time more of something is added
– > the cumulative effect of human activity on the would environment

presume # verb. AW. to suppose that something is true, although you do not have actual proof | synonym: assume
– > I presume (that) he understand the rules.

presumably # adverb. AW. used to say that you think that something is probably true
– > Presumably, this is where the accident happened.
= > The 'add' function was invoked 1,787 times, presumably to compute the product.

B appendix # Low-Level I/O

disposal # noun. AW. the act of get rid of something
– > a bomb disposal squad
idiom: at your/someone's disposal: available for use as your prefer/someone prefers
– > He will have a car at his disposal for the whole month.
= > C programmer on GNU/Linux have two sets of Input/Output functions at their disposal.

truncate # verb. formal. to make something shorter, especially by cutting off the top or end
– > My article was published in truncated form.
= > Specify O_TRUNC to truncate the opened file, if it previously existed.

positive # adjective. AW. 1 {confident} thinking about what is good in a situation; feeling confident and sure that something good will happen
5. (of a person) completely sure that something is correct or true
– > I can not be positive about what time it happened.
= > After reading this book, we are positive that you will choose to write all your program for GNU/Linux.

gap # noun. 1. a space between two things or in the middle of something, especially because there is a part missing
– > She had a gap between her two front teeth.
= > If you position a file descriptor beyond the end of a file and then write to it, Linux first expands the file to accommodate the 'gap' that you created with the lseek operation and then writes to the end of it.

accommodate # verb. 1. to provide someone with a room or place to sleep, live or sit
– > The hotel can accommodate up to 500 guests.
2. to provide enough space for something or someone

END # note that the appendix C, D, E and F was not covered.