Makefile, Make, Mk
how to use them for data processing
traditionally for building binary programs from sources
C, C++, Fortran
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- C, C++, Fortran
- aa.h, bb.h, aa.c, bb.c, main.c
traditionally for building binary programs from sources
C, C++, Fortran
aa.h, bb.h, aa.c, bb.c, main.c
create aa.o, bb.o (binary objects), ab.a (library)
main (runtime binary)
handling dependencies
declaration of dependencies

specification of rules

- for concrete target (main from main.o, ab.a)
- generic (from *.c to *.o)
- many defaults
it is better to process data in steps

corpus: html – prevert – vert – annotated

it could be in one pipeline (at the end)

but we want to see partial results for debugging during development
corpus: html – prevert – vert – annotated
from html to pre-vertical: html2prevert.py

%.prev: %.html
    html2prevert.py <$< >$@

%.vert: %.prev
    tokenize <$< >$@

%.tags: %.vert
    desamb.sh <$< >$@
corpus: html – prevert – vert – annotated

from html to pre-vertical: html2prevert.py

%.prev: %.html
   html2prevert.py -skip-h -m 20 -stopw /nlp/cor... <$< >$@

%.vert: %.prev
   sed -e 's/\([0-9]\)/\1-/g' $< | tokenize |grep -v '^_' >$@

%.tags: %.vert
   desamb-utf8-majka.sh -skipdis <$< | sed -e 's/^@.*@\tk4' >$@
configuration options in variables
MAJKA=/nlp/projekty/ajka/bin/majka
%.annot: %.vert
   $(MAJKA) -p <$$ >$@

list of files/targets
PREFS=4 5 6 7 8 9 $(shell seq -w 00 17)
DIRS=$(wildcard SPACE14/20??)
corps: $(DIRS:%=%.cvert)

%.cvert: $(PREFS:%=\%/%.vert)
cat $^ >$@

variables from commandline: make PREFS='1 2 3'
run in parallel: make -j 8
run in max load: make -l [load]
dry run: make -n
remake all: make -B
- TAB at the line beginning
- each line run in separate shell invocation
- escape all $
Mk

- from last version of Unix, first version of Plan9
- no TABS
- simple substitution rules
- dependencies using command
Book: *Managing Projects with GNU Make* (by Robert Mecklenburg)

GNU Make
https://www.gnu.org/software/make/manual/

Tutorial: Automation and Make
https://swcarpentry.github.io/make-novice/