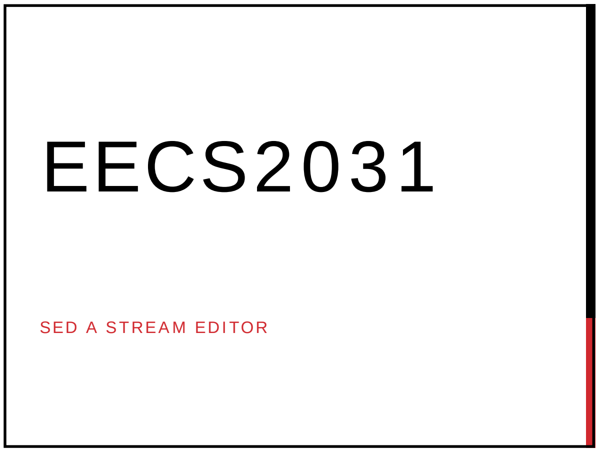
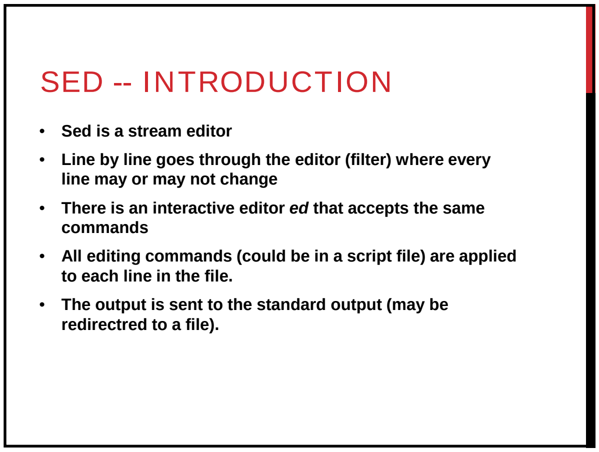


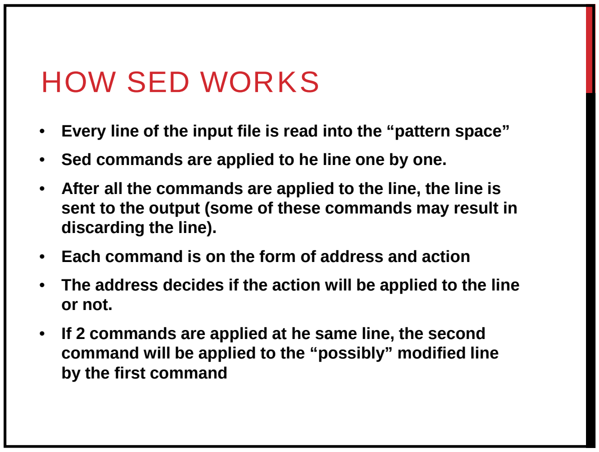
EECS2031

SED A STREAM EDITOR



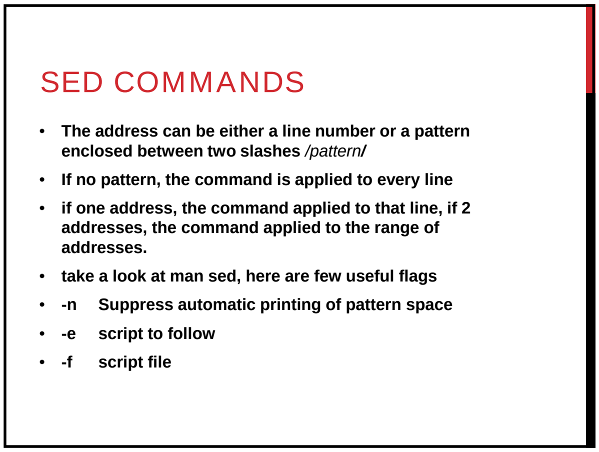
SED -- INTRODUCTION

- **Sed is a stream editor**
- **Line by line goes through the editor (filter) where every line may or may not change**
- **There is an interactive editor *ed* that accepts the same commands**
- **All editing commands (could be in a script file) are applied to each line in the file.**
- **The output is sent to the standard output (may be redirectred to a file).**



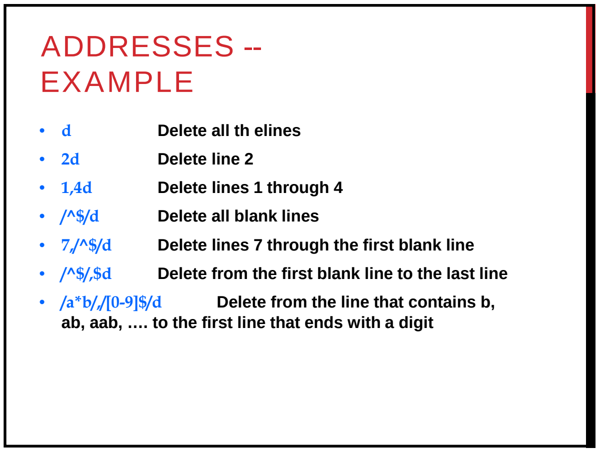
HOW SED WORKS

- **Every line of the input file is read into the "pattern space"**
- **Sed commands are applied to he line one by one.**
- **After all the commands are applied to the line, the line is sent to the output (some of these commands may result in discarding the line).**
- **Each command is on the form of address and action**
- **The address decides if the action will be applied to the line or not.**
- **If 2 commands are applied at he same line, the second command will be applied to the "possibly" modified line by the first command**



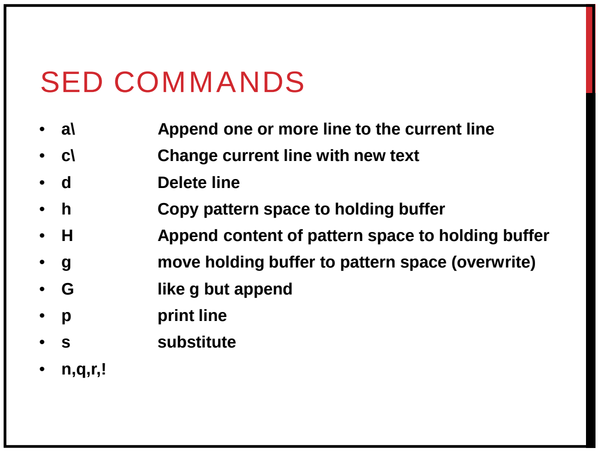
SED COMMANDS

- The address can be either a line number or a pattern enclosed between two slashes */pattern/*
- If no pattern, the command is applied to every line
- if one address, the command applied to that line, if 2 addresses, the command applied to the range of addresses.
- take a look at man sed, here are few useful flags
- -n   Suppress automatic printing of pattern space
- -e   script to follow
- -f   script file



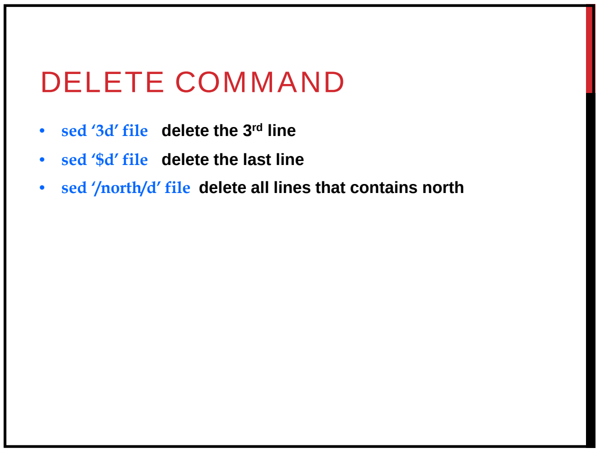
ADDRESSES -- EXAMPLE

`d`	Delete all th elines
`2d`	Delete line 2
`1,4d`	Delete lines 1 through 4
`/^$/d`	Delete all blank lines
`7,/^$/d`	Delete lines 7 through the first blank line
`/^$/,$d`	Delete from the first blank line to the last line
`/a*b/,/[0-9]$/d`	Delete from the line that contains b, ab, aab, …. to the first line that ends with a digit



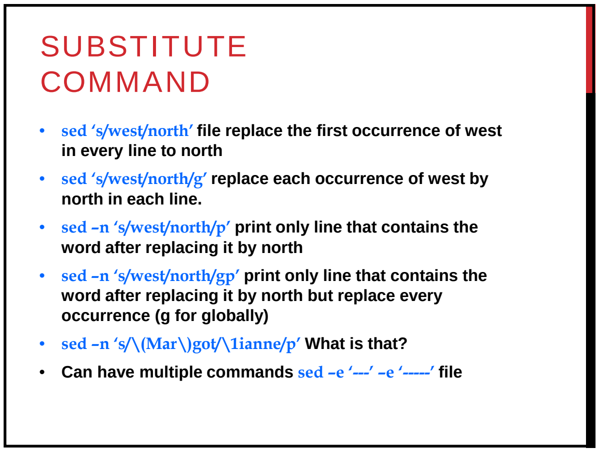
SED COMMANDS

a\	Append one or more line to the current line
c\	Change current line with new text
d	Delete line
h	Copy pattern space to holding buffer
H	Append content of pattern space to holding buffer
g	move holding buffer to pattern space (overwrite)
G	like g but append
p	print line
s	substitute
n,q,r,!	



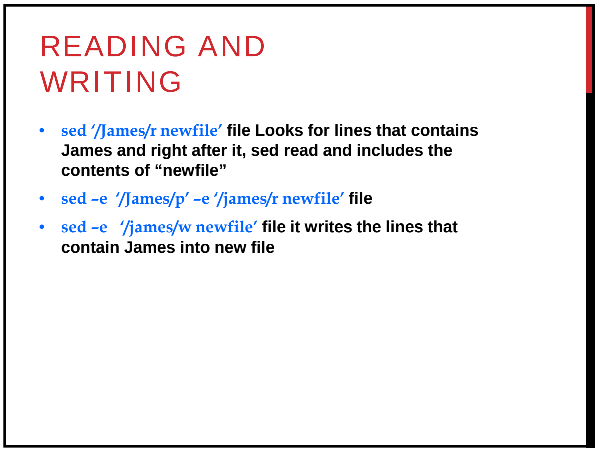
DELETE COMMAND

- sed ‘3d’ file   delete the 3rd line
- sed ‘$d’ file   delete the last line
- sed ‘/north/d’ file delete all lines that contains north



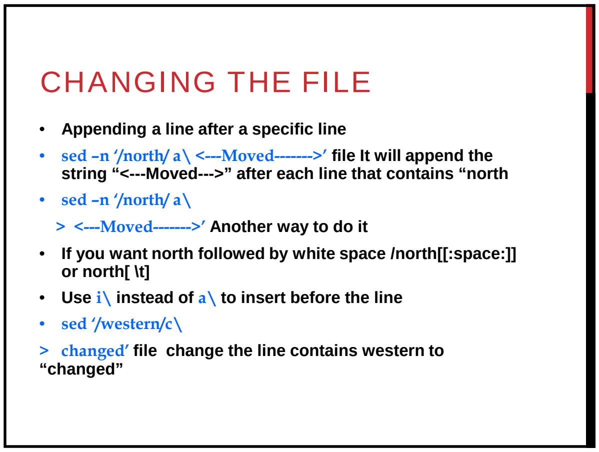
SUBSTITUTE COMMAND

- sed ‘s/west/north’ file replace the first occurrence of west in every line to north
- sed ‘s/west/north/g’ replace each occurrence of west by north in each line.
- sed –n ‘s/west/north/p’ print only line that contains the word after replacing it by north
- sed –n ‘s/west/north/gp’ print only line that contains the word after replacing it by north but replace every occurrence (g for globally)
- sed –n ‘s/\(Mar\)got/\1ianne/p’ What is that?
- Can have multiple commands sed –e ‘---’ –e ‘-----’ file



READING AND WRITING

- sed ‘/James/r newfile’ file Looks for lines that contains James and right after it, sed read and includes the contents of “newfile”
- sed –e ‘/James/p’ –e ‘/james/r newfile’ file
- sed –e   ‘/james/w newfile’ file it writes the lines that contain James into new file

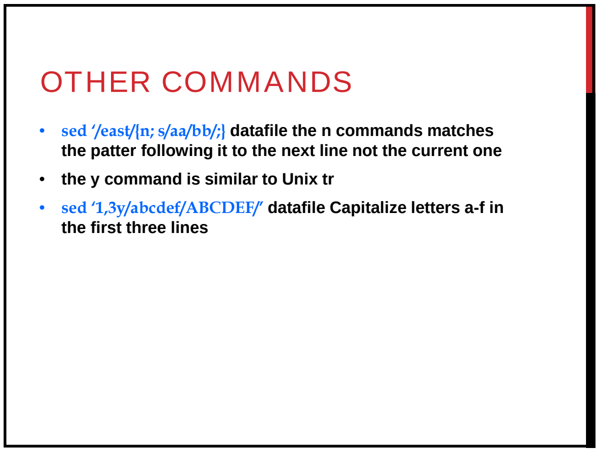


CHANGING THE FILE

- Appending a line after a specific line
- sed –n '/north/ a\ <---Moved------->' file It will append the string "<---Moved--->" after each line that contains "north
- sed –n '/north/ a\

  > <---Moved------->' Another way to do it
- If you want north followed by white space /north[[:space:]] or north[\t]
- Use i\ instead of a\ to insert before the line
- sed '/western/c\

> changed' file change the line contains western to "changed"



OTHER COMMANDS

- sed '/east/{n; s/aa/bb/;} datafile the n commands matches the patter following it to the next line not the current one
- the y command is similar to Unix tr
- sed '1,3y/abcdef/ABCDEF/' datafile Capitalize letters a-f in the first three lines