SED

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What is sed?

- A non-interactive stream editor

- sed is used for command line processing of data files

- sed is used to perform basic text transformations on an input stream (a file or input from a pipeline).

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How sed Works ?

- sed reads from the standard input/FILE ,one line at a time.

- Each line is copied into a temporary buffer called pattern space

- series of commands are applied to line in the pattern space

- Once the commands are executed then the output is written to STDOUT (unless the –n option is specified)

- Line will be removed from the pattern space

- sed reads next line of input, until end of file

NOTE : If –i (sed –i) option is specified , the contents of input file will be modified

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Syntaxt

Syntax of sed :

sed [option] 'address action' INPUTFILE(s)

Useful options :

-n : Suppress automatic printing of pattern space

-i   : Edit files in place (makes backup if extension supplied)

-f   : Add the contents of script-file to the commands to be executed

-e : Add the script to the commands to be executed

▪Address determines which lines in the input file are to be processed

▪If no address is specified, then the command is applied to each input line

Address types:

- ▪ Line Address
- ▪ Context Address

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Single line Address :

To print the Line Number 3 from the input file :

sed -n '**3**p' EMP.DAT

Range of lines :

To print the Line Number1 to 3 from the input file :
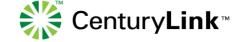
sed -n '1,3p' EMP.DAT

Last Line :

To print the Last line from the input file :

sed -n '$p' EMP.DAT

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Line Address

```
sxsama2@HMLINUX1:~/SED

[sxsama2@HMLINUX1 SED]$ sed -n 'p' EMP.DAT
7369|SMITH|CLERK|7902|17-DEC-80|800||20
7499|ALLEN|SALESMAN|7698|20-FEB-81|1600|300|30
7521|WARD|SALESMAN|7698|22-FEB-81|1250|500|30
7566|JONES|MANAGER|7839|02-APR-81|2975||20
7654|MARTIN|SALESMAN|7698|28-SEP-81|1250|1400|30
7698|BLAKE|MANAGER|7839|01-MAY-81|2850||30
7782|CLARK|MANAGER|7839|09-JUN-81|2450||10
7788|SCOTT|ANALYST|7566|19-APR-87|3000||20
7839|KING|PRESIDENT||17-NOV-81|5000||10
7844|TURNER|SALESMAN|7698|08-SEP-81|1500|0|30
7876|ADAMS|CLERK|7788|23-MAY-87|1100||20
7900|JAMES|CLERK|7698|03-DEC-81|950||30
7902|FORD|ANALYST|7566|03-DEC-81|3000||20
7934|MILLER|CLERK|7782|23-JAN-82|1300||10
[sxsama2@HMLINUX1 SED]$ sed -n '3p' EMP.DAT
7521|WARD|SALESMAN|7698|22-FEB-81|1250|500|30
[sxsama2@HMLINUX1 SED]$ sed -n '1,3p' EMP.DAT
7369|SMITH|CLERK|7902|17-DEC-80|800||20
7499|ALLEN|SALESMAN|7698|20-FEB-81|1600|300|30
7521|WARD|SALESMAN|7698|22-FEB-81|1250|500|30
[sxsama2@HMLINUX1 SED]$ sed -n '$p' EMP.DAT
7934|MILLER|CLERK|7782|23-JAN-82|1300||10
[sxsama2@HMLINUX1 SED]$ sed -n -e '3p' -e '$p' EMP.DAT
7521|WARD|SALESMAN|7698|22-FEB-81|1250|500|30
7934|MILLER|CLERK|7782|23-JAN-82|1300||10
[sxsama2@HMLINUX1 SED]$ sed -n -e '1p' -e '3p' -e '$p' EMP.DAT
7369|SMITH|CLERK|7902|17-DEC-80|800||20
7521|WARD|SALESMAN|7698|22-FEB-81|1250|500|30
7934|MILLER|CLERK|7782|23-JAN-82|1300||10
```

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Context Address

This is another form of addressing used in sed .We can specify patterns instead of line numbers to perform the specific actions (To execute the series of sed commands).

Example :

```
sed -n '/MANAGER/p' EMP.DAT

sed -n -e '/MANAGER/p' -e '/KING/p' EMP.DAT

sed -n '/ALLEN/,/JONES/p' EMP.DAT
```

Context Address

```
[sxsama2@HMLINUX1 SED]$ cat EMP.DAT
7369|SMITH|CLERK|7902|17-DEC-80|800||20
7499|ALLEN|SALESMAN|7698|20-FEB-81|1600|300|30
7521|WARD|SALESMAN|7698|22-FEB-81|1250|500|30
7566|JONES|MANAGER|7839|02-APR-81|2975||20
7654|MARTIN|SALESMAN|7698|28-SEP-81|1250|1400|30
7698|BLAKE|MANAGER|7839|01-MAY-81|2850||30
7782|CLARK|MANAGER|7839|09-JUN-81|2450||10
7788|SCOTT|ANALYST|7566|19-APR-87|3000||20
7839|KING|PRESIDENT||17-NOV-81|5000||10
7844|TURNER|SALESMAN|7698|08-SEP-81|1500|0|30
7876|ADAMS|CLERK|7788|23-MAY-87|1100||20
7900|JAMES|CLERK|7698|03-DEC-81|950||30
7902|FORD|ANALYST|7566|03-DEC-81|3000||20
7934|MILLER|CLERK|7782|23-JAN-82|1300||10
[sxsama2@HMLINUX1 SED]$ sed -n '/ALLEN/,/JONES/p' EMP.DAT
7499|ALLEN|SALESMAN|7698|20-FEB-81|1600|300|30
7521|WARD|SALESMAN|7698|22-FEB-81|1250|500|30
7566|JONES|MANAGER|7839|02-APR-81|2975||20
[sxsama2@HMLINUX1 SED]$ sed -n '/MANAGER/p' EMP.DAT
7566|JONES|MANAGER|7839|02-APR-81|2975||20
7698|BLAKE|MANAGER|7839|01-MAY-81|2850||30
7782|CLARK|MANAGER|7839|09-JUN-81|2450||10
[sxsama2@HMLINUX1 SED]$ sed -n -e '/MANAGER/p' -e '/KING/p' EMP.DAT
7566|JONES|MANAGER|7839|02-APR-81|2975||20
7698|BLAKE|MANAGER|7839|01-MAY-81|2850||30
7782|CLARK|MANAGER|7839|09-JUN-81|2450||10
7839|KING|PRESIDENT||17-NOV-81|5000||10
[sxsama2@HMLINUX1 SED]$
```

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Address with !

Address with an exclamation (!) : Instruction will be applied to all lines that do not match the address

Example :

To print the lines 1 to 3 :

        sed -n **'4,$!p'** EMP.DAT

        sed -n '1,3p' EMP.DAT

Print the Lines which does not contain MANAGER :

        sed -n **'/MANAGER/!p'** EMP.DAT

Example of Nested Addressing :

        sed -n '6,10{/MANAGER/p}' EMP.DAT

```
sxsama2@HMLINUX1:~/SED

[sxsama2@HMLINUX1 SED]$ sed -n '4,14!p' EMP.DAT
7369|SMITH|CLERK|7902|17-DEC-80|800||20
7499|ALLEN|SALESMAN|7698|20-FEB-81|1600|300|30
7521|WARD|SALESMAN|7698|22-FEB-81|1250|500|30
[sxsama2@HMLINUX1 SED]$ sed -n '1,3p' EMP.DAT
7369|SMITH|CLERK|7902|17-DEC-80|800||20
7499|ALLEN|SALESMAN|7698|20-FEB-81|1600|300|30
7521|WARD|SALESMAN|7698|22-FEB-81|1250|500|30
[sxsama2@HMLINUX1 SED]$ sed -n '/MANAGER/!p' EMP.DAT
7369|SMITH|CLERK|7902|17-DEC-80|800||20
7499|ALLEN|SALESMAN|7698|20-FEB-81|1600|300|30
7521|WARD|SALESMAN|7698|22-FEB-81|1250|500|30
7654|MARTIN|SALESMAN|7698|28-SEP-81|1250|1400|30
7788|SCOTT|ANALYST|7566|19-APR-87|3000||20
7839|KING|PRESIDENT||17-NOV-81|5000||10
7844|TURNER|SALESMAN|7698|08-SEP-81|1500|0|30
7876|ADAMS|CLERK|7788|23-MAY-87|1100||20
7900|JAMES|CLERK|7698|03-DEC-81|950||30
7902|FORD|ANALYST|7566|03-DEC-81|3000||20
7934|MILLER|CLERK|7782|23-JAN-82|1300||10
[sxsama2@HMLINUX1 SED]$ sed -n '6,10{/MANAGER/p}' EMP.DAT
7698|BLAKE|MANAGER|7839|01-MAY-81|2850||30
7782|CLARK|MANAGER|7839|09-JUN-81|2450||10
[sxsama2@HMLINUX1 SED]$
```

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Another Type of Line Address : **NUMBER1~NUMBER2**

M~N with "p" command prints every Nth line starting from line M

To print all the odd lines (Line 1 ,3,5 ……) :

        sed -n '1~2p' EMP.DAT

To print all the line numbers (1,4,7,10…)

        sed -n '1~3p' EMP.DAT

To print all the even lines (2,4,6….)

        sed -n '2~2p' EMP.DAT

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Another Type of Line Address : **NUMBER1~NUMBER2**

```
sxsama2@HMLINUX1:~/SED
[sxsama2@HMLINUX1 SED]$ cat -n EMP.DAT
     1    7369|SMITH|CLERK|7902|17-DEC-80|800||20
     2    7499|ALLEN|SALESMAN|7698|20-FEB-81|1600|300|30
     3    7521|WARD|SALESMAN|7698|22-FEB-81|1250|500|30
     4    7566|JONES|MANAGER|7839|02-APR-81|2975||20
     5    7654|MARTIN|SALESMAN|7698|28-SEP-81|1250|1400|30
     6    7698|BLAKE|MANAGER|7839|01-MAY-81|2850||30
     7    7782|CLARK|MANAGER|7839|09-JUN-81|2450||10
     8    7788|SCOTT|ANALYST|7566|19-APR-87|3000||20
     9    7839|KING|PRESIDENT||17-NOV-81|5000||10
    10    7844|TURNER|SALESMAN|7698|08-SEP-81|1500|0|30
    11    7876|ADAMS|CLERK|7788|23-MAY-87|1100||20
    12    7900|JAMES|CLERK|7698|03-DEC-81|950||30
    13    7902|FORD|ANALYST|7566|03-DEC-81|3000||20
    14    7934|MILLER|CLERK|7782|23-JAN-82|1300||10
[sxsama2@HMLINUX1 SED]$ sed -n '1~2p' EMP.DAT
7369|SMITH|CLERK|7902|17-DEC-80|800||20
7521|WARD|SALESMAN|7698|22-FEB-81|1250|500|30
7654|MARTIN|SALESMAN|7698|28-SEP-81|1250|1400|30
7782|CLARK|MANAGER|7839|09-JUN-81|2450||10
7839|KING|PRESIDENT||17-NOV-81|5000||10
7876|ADAMS|CLERK|7788|23-MAY-87|1100||20
7902|FORD|ANALYST|7566|03-DEC-81|3000||20
[sxsama2@HMLINUX1 SED]$ sed -n '1~3p' EMP.DAT
7369|SMITH|CLERK|7902|17-DEC-80|800||20
7566|JONES|MANAGER|7839|02-APR-81|2975||20
7782|CLARK|MANAGER|7839|09-JUN-81|2450||10
7844|TURNER|SALESMAN|7698|08-SEP-81|1500|0|30
7902|FORD|ANALYST|7566|03-DEC-81|3000||20
[sxsama2@HMLINUX1 SED]$ sed -n '2~2p' EMP.DAT
7499|ALLEN|SALESMAN|7698|20-FEB-81|1600|300|30
7566|JONES|MANAGER|7839|02-APR-81|2975||20
7698|BLAKE|MANAGER|7839|01-MAY-81|2850||30
7788|SCOTT|ANALYST|7566|19-APR-87|3000||20
7844|TURNER|SALESMAN|7698|08-SEP-81|1500|0|30
7900|JAMES|CLERK|7698|03-DEC-81|950||30
7934|MILLER|CLERK|7782|23-JAN-82|1300||10
[sxsama2@HMLINUX1 SED]$
```

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SED COMMAND – Line Number

(=) writes the current line number before each matched/output line

Example :

```
sed -n -e '=' -e 'p'  EMP.DAT


sed -n '/MANAGER/=' EMP.DAT


sed -n -e '/MANAGER/=' -e '/MANAGER/p' EMP.DAT
```

```
sxsama2@HMLINUX1:~/SED

[sxsama2@HMLINUX1 SED]$ sed -n -e '=' -e 'p'   EMP.DAT
1
7369|SMITH|CLERK|7902|17-DEC-80|800||20
2
7499|ALLEN|SALESMAN|7698|20-FEB-81|1600|300|30
3
7521|WARD|SALESMAN|7698|22-FEB-81|1250|500|30
4
7566|JONES|MANAGER|7839|02-APR-81|2975||20
5
7654|MARTIN|SALESMAN|7698|28-SEP-81|1250|1400|30
6
7698|BLAKE|MANAGER|7839|01-MAY-81|2850||30
7
7782|CLARK|MANAGER|7839|09-JUN-81|2450||10
8
7788|SCOTT|ANALYST|7566|19-APR-87|3000||20
9
7839|KING|PRESIDENT||17-NOV-81|5000||10
10
7844|TURNER|SALESMAN|7698|08-SEP-81|1500|0|30
11
7876|ADAMS|CLERK|7788|23-MAY-87|1100||20
12
7900|JAMES|CLERK|7698|03-DEC-81|950||30
13
7902|FORD|ANALYST|7566|03-DEC-81|3000||20
14
7934|MILLER|CLERK|7782|23-JAN-82|1300||10
[sxsama2@HMLINUX1 SED]$ sed -n '/MANAGER/=' EMP.DAT
4
6
7
[sxsama2@HMLINUX1 SED]$ sed -n -e '/MANAGER/=' -e '/MANAGER/p' EMP.DAT
4
7566|JONES|MANAGER|7839|02-APR-81|2975||20
6
7698|BLAKE|MANAGER|7839|01-MAY-81|2850||30
7
7782|CLARK|MANAGER|7839|09-JUN-81|2450||10
```

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Insert Command : i

- The **i** command inserts text.
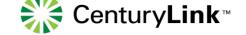- It adds line(s) to the output before the address.

Example :

 $sed '**/MANAGER/i**

' EMP.DAT

$sed '**1i**

-------- EMPLOYEE RECORD ---------

' EMP.DAT

Insert Command

```
[sxsama2@HMLINUX1 SED]$ sed '1i\
> ----------- EMPLOYEE RECORD --------------
> ' EMP.DAT
----------- EMPLOYEE RECORD --------------
7369|SMITH|CLERK|7902|17-DEC-80|800||20
7499|ALLEN|SALESMAN|7698|20-FEB-81|1600|300|30
7521|WARD|SALESMAN|7698|22-FEB-81|1250|500|30
7566|JONES|MANAGER|7839|02-APR-81|2975||20
7654|MARTIN|SALESMAN|7698|28-SEP-81|1250|1400|30
7698|BLAKE|MANAGER|7839|01-MAY-81|2850||30
7782|CLARK|MANAGER|7839|09-JUN-81|2450||10
7788|SCOTT|ANALYST|7566|19-APR-87|3000||20
7839|KING|PRESIDENT||17-NOV-81|5000||10
7844|TURNER|SALESMAN|7698|08-SEP-81|1500|0|30
7876|ADAMS|CLERK|7788|23-MAY-87|1100||20
7900|JAMES|CLERK|7698|03-DEC-81|950||30
7902|FORD|ANALYST|7566|03-DEC-81|3000||20
7934|MILLER|CLERK|7782|23-JAN-82|1300||10
[sxsama2@HMLINUX1 SED]$ sed '/MANAGER/i \
> --------------------------------------------------
> ' EMP.DAT
7369|SMITH|CLERK|7902|17-DEC-80|800||20
7499|ALLEN|SALESMAN|7698|20-FEB-81|1600|300|30
7521|WARD|SALESMAN|7698|22-FEB-81|1250|500|30
--------------------------------------------------
7566|JONES|MANAGER|7839|02-APR-81|2975||20
7654|MARTIN|SALESMAN|7698|28-SEP-81|1250|1400|30
--------------------------------------------------
7698|BLAKE|MANAGER|7839|01-MAY-81|2850||30
--------------------------------------------------
7782|CLARK|MANAGER|7839|09-JUN-81|2450||10
7788|SCOTT|ANALYST|7566|19-APR-87|3000||20
7839|KING|PRESIDENT||17-NOV-81|5000||10
7844|TURNER|SALESMAN|7698|08-SEP-81|1500|0|30
7876|ADAMS|CLERK|7788|23-MAY-87|1100||20
7900|JAMES|CLERK|7698|03-DEC-81|950||30
7902|FORD|ANALYST|7566|03-DEC-81|3000||20
7934|MILLER|CLERK|7782|23-JAN-82|1300||10
[sxsama2@HMLINUX1 SED]$
```

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APPEND COMMAND : a

It adds line(s) to the output after the address.

Example:

$ sed 'a

' EMP1.DAT

$ sed '1a

' EMP1.DAT

$ sed '$a

' EMP1.DAT

$sed '/MANAGER/a

###

' EMP1.DAT

APPEND COMMAND : a

```
sxsama2@HMLINUX1:~/SED

[sxsama2@HMLINUX1 SED]$ sed '1a\
> --------------------------------------------------------
> ' EMP1.DAT
7369|SMITH|CLERK|7902|17-DEC-80|800||20
--------------------------------------------------------
7499|ALLEN|SALESMAN|7698|20-FEB-81|1600|300|30
7521|WARD|SALESMAN|7698|22-FEB-81|1250|500|30
7566|JONES|MANAGER|7839|02-APR-81|2975||20
7654|MARTIN|SALESMAN|7698|28-SEP-81|1250|1400|30
[sxsama2@HMLINUX1 SED]$ sed 'a\
> ++++++++++++++++++++++++++++++++++++++++++++++++++++
> ' EMP1.DAT
7369|SMITH|CLERK|7902|17-DEC-80|800||20
++++++++++++++++++++++++++++++++++++++++++++++++++++
7499|ALLEN|SALESMAN|7698|20-FEB-81|1600|300|30
++++++++++++++++++++++++++++++++++++++++++++++++++++
7521|WARD|SALESMAN|7698|22-FEB-81|1250|500|30
++++++++++++++++++++++++++++++++++++++++++++++++++++
7566|JONES|MANAGER|7839|02-APR-81|2975||20
++++++++++++++++++++++++++++++++++++++++++++++++++++
7654|MARTIN|SALESMAN|7698|28-SEP-81|1250|1400|30
++++++++++++++++++++++++++++++++++++++++++++++++++++
[sxsama2@HMLINUX1 SED]$ sed '/MANAGER/a\
> ###########################################################
> ' EMP1.DAT
7369|SMITH|CLERK|7902|17-DEC-80|800||20
7499|ALLEN|SALESMAN|7698|20-FEB-81|1600|300|30
7521|WARD|SALESMAN|7698|22-FEB-81|1250|500|30
7566|JONES|MANAGER|7839|02-APR-81|2975||20
###########################################################
7654|MARTIN|SALESMAN|7698|28-SEP-81|1250|1400|30
```

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One more example of insert and Append

$ cat Insert_Append.sed

1i \

--------- BEGIN OF EMPLOYEE RECORD --------

$a \

--------- END OF EMPLOYEE RECORD --------

$ sed -f Insert_Append.sed EMP1.DAT

```
sxsama2@HMLINUX1:~/SED
[sxsama2@HMLINUX1 SED]$ cat Insert_Append.sed
1i \
--------- BEGIN OF EMPLOYEE RECORD  --------
$a \
--------- END OF EMPLOYEE RECORD  --------
[sxsama2@HMLINUX1 SED]$ sed -f Insert_Append.sed EMP1.DAT
--------- BEGIN OF EMPLOYEE RECORD  --------
7369|SMITH|CLERK|7902|17-DEC-80|800||20
7499|ALLEN|SALESMAN|7698|20-FEB-81|1600|300|30
7521|WARD|SALESMAN|7698|22-FEB-81|1250|500|30
7566|JONES|MANAGER|7839|02-APR-81|2975||20
7654|MARTIN|SALESMAN|7698|28-SEP-81|1250|1400|30
--------- END OF EMPLOYEE RECORD  --------
[sxsama2@HMLINUX1 SED]$
```

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Change Command: c

Change command - c replaces the entire matched line with new text

Example :

$ sed '1c\
7839|KING|PRESIDENT||17-NOV-81|5000||10
' EMP1.DAT
$ sed '/JONES/c\
7839|KING|PRESIDENT||17-NOV-81|5000||10
' EMP1.DAT
$ sed '/MANAGER/c\
7839|KING|PRESIDENT||17-NOV-81|5000||10
' EMP.DAT

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Change Command: c

```
sxsama2@HMLINUX1:~/SED
[sxsama2@HMLINUX1 SED]$ cat EMP1.DAT
7369|SMITH|CLERK|7902|17-DEC-80|800||20
7499|ALLEN|SALESMAN|7698|20-FEB-81|1600|300|30
7521|WARD|SALESMAN|7698|22-FEB-81|1250|500|30
7566|JONES|MANAGER|7839|02-APR-81|2975||20
7654|MARTIN|SALESMAN|7698|28-SEP-81|1250|1400|30
[sxsama2@HMLINUX1 SED]$ sed '1c\
> 7839|KING|PRESIDENT||17-NOV-81|5000||10
> ' EMP1.DAT
7839|KING|PRESIDENT||17-NOV-81|5000||10
7499|ALLEN|SALESMAN|7698|20-FEB-81|1600|300|30
7521|WARD|SALESMAN|7698|22-FEB-81|1250|500|30
7566|JONES|MANAGER|7839|02-APR-81|2975||20
7654|MARTIN|SALESMAN|7698|28-SEP-81|1250|1400|30
[sxsama2@HMLINUX1 SED]$ sed '/JONES/c\
> 7839|KING|PRESIDENT||17-NOV-81|5000||10
> ' EMP1.DAT
7369|SMITH|CLERK|7902|17-DEC-80|800||20
7499|ALLEN|SALESMAN|7698|20-FEB-81|1600|300|30
7521|WARD|SALESMAN|7698|22-FEB-81|1250|500|30
7839|KING|PRESIDENT||17-NOV-81|5000||10
7654|MARTIN|SALESMAN|7698|28-SEP-81|1250|1400|30
[sxsama2@HMLINUX1 SED]$ sed '/MANAGER/c\
> 7839|KING|PRESIDENT||17-NOV-81|5000||10
> ' EMP.DAT
7369|SMITH|CLERK|7902|17-DEC-80|800||20
7499|ALLEN|SALESMAN|7698|20-FEB-81|1600|300|30
7521|WARD|SALESMAN|7698|22-FEB-81|1250|500|30
7839|KING|PRESIDENT||17-NOV-81|5000||10
7654|MARTIN|SALESMAN|7698|28-SEP-81|1250|1400|30
7839|KING|PRESIDENT||17-NOV-81|5000||10
7839|KING|PRESIDENT||17-NOV-81|5000||10
7788|SCOTT|ANALYST|7566|19-APR-87|3000||20
7839|KING|PRESIDENT||17-NOV-81|5000||10
7844|TURNER|SALESMAN|7698|08-SEP-81|1500|0|30
7876|ADAMS|CLERK|7788|23-MAY-87|1100||20
7900|JAMES|CLERK|7698|03-DEC-81|950||30
7902|FORD|ANALYST|7566|03-DEC-81|3000||20
7934|MILLER|CLERK|7782|23-JAN-82|1300||10
```

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Delete Command: d

Delete command **d** deletes the entire pattern space .

Example :

    sed '/SMITH/d' EMP1.DAT

    sed '/SMITH/,/WARD/d' EMP1.DAT

    sed '1d' EMP1.DAT

    sed '1,3d' EMP1.DAT

    sed '1,3!d' EMP1.DAT

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Delete Command: d


```
sxsama2@HMLINUX1:~/SED

[sxsama2@HMLINUX1 SED]$ cat EMP1.DAT
7369|SMITH|CLERK|7902|17-DEC-80|800||20
7499|ALLEN|SALESMAN|7698|20-FEB-81|1600|300|30
7521|WARD|SALESMAN|7698|22-FEB-81|1250|500|30
7566|JONES|MANAGER|7839|02-APR-81|2975||20
7654|MARTIN|SALESMAN|7698|28-SEP-81|1250|1400|30
[sxsama2@HMLINUX1 SED]$ sed '/SMITH/d' EMP1.DAT
7499|ALLEN|SALESMAN|7698|20-FEB-81|1600|300|30
7521|WARD|SALESMAN|7698|22-FEB-81|1250|500|30
7566|JONES|MANAGER|7839|02-APR-81|2975||20
7654|MARTIN|SALESMAN|7698|28-SEP-81|1250|1400|30
[sxsama2@HMLINUX1 SED]$ sed '/SMITH/,/WARD/d' EMP1.DAT
7566|JONES|MANAGER|7839|02-APR-81|2975||20
7654|MARTIN|SALESMAN|7698|28-SEP-81|1250|1400|30
[sxsama2@HMLINUX1 SED]$ sed '1d' EMP1.DAT
7499|ALLEN|SALESMAN|7698|20-FEB-81|1600|300|30
7521|WARD|SALESMAN|7698|22-FEB-81|1250|500|30
7566|JONES|MANAGER|7839|02-APR-81|2975||20
7654|MARTIN|SALESMAN|7698|28-SEP-81|1250|1400|30
[sxsama2@HMLINUX1 SED]$ sed '1,3d' EMP1.DAT
7566|JONES|MANAGER|7839|02-APR-81|2975||20
7654|MARTIN|SALESMAN|7698|28-SEP-81|1250|1400|30
[sxsama2@HMLINUX1 SED]$ sed '1,3!d' EMP1.DAT
7369|SMITH|CLERK|7902|17-DEC-80|800||20
7499|ALLEN|SALESMAN|7698|20-FEB-81|1600|300|30
7521|WARD|SALESMAN|7698|22-FEB-81|1250|500|30
[sxsama2@HMLINUX1 SED]$
```

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Substitute Command : s

▪Substitute command - **s** replaces text selected by search string with replacement string

▪search string can be regular expression

▪flags: global (g), i.e. replace all occurrences

Example:

        sed 's/SALESMAN/SALESMGR/' EMP1.DAT

        sed 's/./#&/' EMP1.DAT

        echo SUBHASIS |sed 's/./ &/'

        echo SUBHASIS |sed 's/./ &/g'

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Substitute Command : s


```
sxsama2@HMLINUX1:~/SED

[sxsama2@HMLINUX1 SED]$ cat EMP1.DAT
7369|SMITH|CLERK|7902|17-DEC-80|800||20
7499|ALLEN|SALESMAN|7698|20-FEB-81|1600|300|30
7521|WARD|SALESMAN|7698|22-FEB-81|1250|500|30
7566|JONES|MANAGER|7839|02-APR-81|2975||20
7654|MARTIN|SALESMAN|7698|28-SEP-81|1250|1400|30
[sxsama2@HMLINUX1 SED]$ sed 's/SALESMAN/SALESMGR/' EMP1.DAT
7369|SMITH|CLERK|7902|17-DEC-80|800||20
7499|ALLEN|SALESMGR|7698|20-FEB-81|1600|300|30
7521|WARD|SALESMGR|7698|22-FEB-81|1250|500|30
7566|JONES|MANAGER|7839|02-APR-81|2975||20
7654|MARTIN|SALESMGR|7698|28-SEP-81|1250|1400|30
[sxsama2@HMLINUX1 SED]$ sed 's/./#&/' EMP1.DAT
#7369|SMITH|CLERK|7902|17-DEC-80|800||20
#7499|ALLEN|SALESMAN|7698|20-FEB-81|1600|300|30
#7521|WARD|SALESMAN|7698|22-FEB-81|1250|500|30
#7566|JONES|MANAGER|7839|02-APR-81|2975||20
#7654|MARTIN|SALESMAN|7698|28-SEP-81|1250|1400|30
[sxsama2@HMLINUX1 SED]$ echo SUBHASIS |sed 's/./ &/'
 SUBHASIS
[sxsama2@HMLINUX1 SED]$ echo SUBHASIS |sed 's/./ &/g'
 S U B H A S I S
[sxsama2@HMLINUX1 SED]$ sed '1,6 s/MANAGER/PM/g' EMP.DAT
7369|SMITH|CLERK|7902|17-DEC-80|800||20
7499|ALLEN|SALESMAN|7698|20-FEB-81|1600|300|30
7521|WARD|SALESMAN|7698|22-FEB-81|1250|500|30
7566|JONES|PM|7839|02-APR-81|2975||20
7654|MARTIN|SALESMAN|7698|28-SEP-81|1250|1400|30
7698|BLAKE|PM|7839|01-MAY-81|2850||30
7782|CLARK|MANAGER|7839|09-JUN-81|2450||10
7788|SCOTT|ANALYST|7566|19-APR-87|3000||20
7839|KING|PRESIDENT||17-NOV-81|5000||10
7844|TURNER|SALESMAN|7698|08-SEP-81|1500|0|30
7876|ADAMS|CLERK|7788|23-MAY-87|1100||20
7900|JAMES|CLERK|7698|03-DEC-81|950||30
7902|FORD|ANALYST|7566|03-DEC-81|3000||20
7934|MILLER|CLERK|7782|23-JAN-82|1300||10
[sxsama2@HMLINUX1 SED]$
```

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Transform Command : y

Transform Command : y is used to translate characters.

This is similar to tr command.

Example :

       sed 'y/|/,/' EMP1.DAT

       sed 'y/|-/,:/' EMP1.DAT

```
sxsama2@HMLINUX1:~/SED
[sxsama2@HMLINUX1 SED]$ cat EMP1.DAT
7369|SMITH|CLERK|7902|17-DEC-80|800||20
7499|ALLEN|SALESMAN|7698|20-FEB-81|1600|300|30
7521|WARD|SALESMAN|7698|22-FEB-81|1250|500|30
7566|JONES|MANAGER|7839|02-APR-81|2975||20
7654|MARTIN|SALESMAN|7698|28-SEP-81|1250|1400|30
[sxsama2@HMLINUX1 SED]$ sed 'y/|/,/' EMP1.DAT
7369,SMITH,CLERK,7902,17-DEC-80,800,,20
7499,ALLEN,SALESMAN,7698,20-FEB-81,1600,300,30
7521,WARD,SALESMAN,7698,22-FEB-81,1250,500,30
7566,JONES,MANAGER,7839,02-APR-81,2975,,20
7654,MARTIN,SALESMAN,7698,28-SEP-81,1250,1400,30
[sxsama2@HMLINUX1 SED]$ sed 'y/|-/,:/' EMP1.DAT
7369,SMITH,CLERK,7902,17:DEC:80,800,,20
7499,ALLEN,SALESMAN,7698,20:FEB:81,1600,300,30
7521,WARD,SALESMAN,7698,22:FEB:81,1250,500,30
7566,JONES,MANAGER,7839,02:APR:81,2975,,20
7654,MARTIN,SALESMAN,7698,28:SEP:81,1250,1400,30
[sxsama2@HMLINUX1 SED]$
```

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The quit Command : q

Quit (exit sed) when addr is encountered

Example :

        sed '/KING/q' EMP.DAT

        sed '5q' EMP.DAT

The quit Command : q

```
sxsama2@HMLINUX1:~/SED
[sxsama2@HMLINUX1 SED]$ cat EMP.DAT
7369|SMITH|CLERK|7902|17-DEC-80|800||20
7499|ALLEN|SALESMAN|7698|20-FEB-81|1600|300|30
7521|WARD|SALESMAN|7698|22-FEB-81|1250|500|30
7566|JONES|MANAGER|7839|02-APR-81|2975||20
7654|MARTIN|SALESMAN|7698|28-SEP-81|1250|1400|30
7698|BLAKE|MANAGER|7839|01-MAY-81|2850||30
7782|CLARK|MANAGER|7839|09-JUN-81|2450||10
7788|SCOTT|ANALYST|7566|19-APR-87|3000||20
7839|KING|PRESIDENT||17-NOV-81|5000||10
7844|TURNER|SALESMAN|7698|08-SEP-81|1500|0|30
7876|ADAMS|CLERK|7788|23-MAY-87|1100||20
7900|JAMES|CLERK|7698|03-DEC-81|950||30
7902|FORD|ANALYST|7566|03-DEC-81|3000||20
7934|MILLER|CLERK|7782|23-JAN-82|1300||10
[sxsama2@HMLINUX1 SED]$ sed '5q' EMP.DAT
7369|SMITH|CLERK|7902|17-DEC-80|800||20
7499|ALLEN|SALESMAN|7698|20-FEB-81|1600|300|30
7521|WARD|SALESMAN|7698|22-FEB-81|1250|500|30
7566|JONES|MANAGER|7839|02-APR-81|2975||20
7654|MARTIN|SALESMAN|7698|28-SEP-81|1250|1400|30
[sxsama2@HMLINUX1 SED]$ sed '/KING/q' EMP.DAT
7369|SMITH|CLERK|7902|17-DEC-80|800||20
7499|ALLEN|SALESMAN|7698|20-FEB-81|1600|300|30
7521|WARD|SALESMAN|7698|22-FEB-81|1250|500|30
7566|JONES|MANAGER|7839|02-APR-81|2975||20
7654|MARTIN|SALESMAN|7698|28-SEP-81|1250|1400|30
7698|BLAKE|MANAGER|7839|01-MAY-81|2850||30
7782|CLARK|MANAGER|7839|09-JUN-81|2450||10
7788|SCOTT|ANALYST|7566|19-APR-87|3000||20
7839|KING|PRESIDENT||17-NOV-81|5000||10
[sxsama2@HMLINUX1 SED]$
```

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SED File command – w,r

The file commands allows to read and write from/to file while processing standard input.

read: **r** command

write: **w** command

You can use **w** command to write selected lines to a file .

Example:

$sed -n '/MANAGER/w MANAGER.DAT' EMP.DAT

$sed -n '1,5 w EMP101.DAT' EMP.DAT

You can use **r** command to place the content of a file after any specific line

Example :

**$** sed '$ r FOOTER' EMP.DAT

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SED File command – w : Example

SED File command – r : Example

Use of Tagged Regular expression in SED

Case1 : Replace the DEPT number with XX where the JOB is MANAGER and Department number is 30 ?

```
$ sed 's:\(.*MANAGER\)\(.*\)\(30$\):\1\2XX:' EMP.DAT
```

We can also do the same without using the TRE :

```
sed '/MANAGER/s/30$/XX/' EMP.DAT
```

Case2 : Remove the EMPNO filed from the EMP.DAT file ?

```
$sed 's:\(....|\)\(.*|\):\2:' EMP.DAT
```

Case 3 : Cut the EMPNO field and paste it at the end of the record ?

```
$sed 's:\(....\)\(.*\):\2|\1:' EMP.DAT
```

Case1 - Example

```
sxsama2@HMLINUX1:~/AWK

[sxsama2@HMLINUX1 AWK]$ cat EMP.DAT
7369|SMITH|CLERK|7902|17-DEC-80|800||20
7499|ALLEN|SALESMAN|7698|20-FEB-81|1600|300|30
7521|WARD|SALESMAN|7698|22-FEB-81|1250|500|30
7566|JONES|MANAGER|7839|02-APR-81|2975||20
7654|MARTIN|SALESMAN|7698|28-SEP-81|1250|1400|30
7698|BLAKE|MANAGER|7839|01-MAY-81|2850||30
7782|CLARK|MANAGER|7839|09-JUN-81|2450||10
7788|SCOTT|ANALYST|7566|19-APR-87|3000||20
7839|KING|PRESIDENT||17-NOV-81|5000||10
7844|TURNER|SALESMAN|7698|08-SEP-81|1500|0|30
7876|ADAMS|CLERK|7788|23-MAY-87|1100||20
7900|JAMES|CLERK|7698|03-DEC-81|950||30
7902|FORD|ANALYST|7566|03-DEC-81|3000||20
7934|MILLER|CLERK|7782|23-JAN-82|1300||10
[sxsama2@HMLINUX1 AWK]$ sed 's:\(.*MANAGER\)\(.*\)\(30$\):\1\2XX:' EMP.DAT
7369|SMITH|CLERK|7902|17-DEC-80|800||20
7499|ALLEN|SALESMAN|7698|20-FEB-81|1600|300|30
7521|WARD|SALESMAN|7698|22-FEB-81|1250|500|30
7566|JONES|MANAGER|7839|02-APR-81|2975||20
7654|MARTIN|SALESMAN|7698|28-SEP-81|1250|1400|30
7698|BLAKE|MANAGER|7839|01-MAY-81|2850||XX
7782|CLARK|MANAGER|7839|09-JUN-81|2450||10
7788|SCOTT|ANALYST|7566|19-APR-87|3000||20
7839|KING|PRESIDENT||17-NOV-81|5000||10
7844|TURNER|SALESMAN|7698|08-SEP-81|1500|0|30
7876|ADAMS|CLERK|7788|23-MAY-87|1100||20
7900|JAMES|CLERK|7698|03-DEC-81|950||30
7902|FORD|ANALYST|7566|03-DEC-81|3000||20
7934|MILLER|CLERK|7782|23-JAN-82|1300||10
[sxsama2@HMLINUX1 AWK]$
```

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Case2 - Example


```
sxsama2@HMLINUX1:~/AWK

[sxsama2@HMLINUX1 AWK]$ cat EMP.DAT
7369|SMITH|CLERK|7902|17-DEC-80|800||20
7499|ALLEN|SALESMAN|7698|20-FEB-81|1600|300|30
7521|WARD|SALESMAN|7698|22-FEB-81|1250|500|30
7566|JONES|MANAGER|7839|02-APR-81|2975||20
7654|MARTIN|SALESMAN|7698|28-SEP-81|1250|1400|30
7698|BLAKE|MANAGER|7839|01-MAY-81|2850||30
7782|CLARK|MANAGER|7839|09-JUN-81|2450||10
7788|SCOTT|ANALYST|7566|19-APR-87|3000||20
7839|KING|PRESIDENT||17-NOV-81|5000||10
7844|TURNER|SALESMAN|7698|08-SEP-81|1500|0|30
7876|ADAMS|CLERK|7788|23-MAY-87|1100||20
7900|JAMES|CLERK|7698|03-DEC-81|950||30
7902|FORD|ANALYST|7566|03-DEC-81|3000||20
7934|MILLER|CLERK|7782|23-JAN-82|1300||10
[sxsama2@HMLINUX1 AWK]$ sed 's:\(....|\)\(.*|\):\2:' EMP.DAT
SMITH|CLERK|7902|17-DEC-80|800||20
ALLEN|SALESMAN|7698|20-FEB-81|1600|300|30
WARD|SALESMAN|7698|22-FEB-81|1250|500|30
JONES|MANAGER|7839|02-APR-81|2975||20
MARTIN|SALESMAN|7698|28-SEP-81|1250|1400|30
BLAKE|MANAGER|7839|01-MAY-81|2850||30
CLARK|MANAGER|7839|09-JUN-81|2450||10
SCOTT|ANALYST|7566|19-APR-87|3000||20
KING|PRESIDENT||17-NOV-81|5000||10
TURNER|SALESMAN|7698|08-SEP-81|1500|0|30
ADAMS|CLERK|7788|23-MAY-87|1100||20
JAMES|CLERK|7698|03-DEC-81|950||30
FORD|ANALYST|7566|03-DEC-81|3000||20
MILLER|CLERK|7782|23-JAN-82|1300||10
[sxsama2@HMLINUX1 AWK]$
```

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Case 3 - Example

Example of 'h' & 'n' command

Example of h,g,n command


```
sxsama2@HMLINUX1:~/SED

[sxsama2@HMLINUX1 SED]$ cat EMP.DAT
7369|SMITH|CLERK|7902|17-DEC-80|800||20
7499|ALLEN|SALESMAN|7698|20-FEB-81|1600|300|30
7521|WARD|SALESMAN|7698|22-FEB-81|1250|500|30
7566|JONES|MANAGER|7839|02-APR-81|2975||20
7654|MARTIN|SALESMAN|7698|28-SEP-81|1250|1400|30
7698|BLAKE|MANAGER|7839|01-MAY-81|2850||30
7782|CLARK|MANAGER|7839|09-JUN-81|2450||10
7788|SCOTT|ANALYST|7566|19-APR-87|3000||20
7839|KING|PRESIDENT||17-NOV-81|5000||10
7844|TURNER|SALESMAN|7698|08-SEP-81|1500|0|30
7876|ADAMS|CLERK|7788|23-MAY-87|1100||20
7900|JAMES|CLERK|7698|03-DEC-81|950||30
7902|FORD|ANALYST|7566|03-DEC-81|3000||20
7934|MILLER|CLERK|7782|23-JAN-82|1300||10
[sxsama2@HMLINUX1 SED]$ sed -n '/KING/{
> h
> n
> p
> g
> p
> }' EMP.DAT
7844|TURNER|SALESMAN|7698|08-SEP-81|1500|0|30
7839|KING|PRESIDENT||17-NOV-81|5000||10
[sxsama2@HMLINUX1 SED]$
```

Thank You !!!!

Any Questions Mail me ☺

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subhasis.samantaray@gmail.com

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