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Лабораторная работа №5

По курсу «Операционные системы»

Тема: “Примеры использования команд для обработки
текстовых файлов в Linux”

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Условия выполнения лабораторной работы

Использовать команды для обработки текстовых файлов из списка: `grep (-invwrcABC)`, `sort (-nrRMktu)`, `uniq (-cdDuf)`, `cut (-cdf, --output-delimiter=’')`, `head (-nc)`, `tail (-nc)`, `wc (-lwc)`, `nl`, `paste`, `join`, `cmp`, `diff (-sqy)`, `tr (-ds)`.

Примеры выполнения команд

Grep

```
anastasia@WIN-01P8382GL93:~/university/Lab5$ grep Lorem 123
What is Lorem Ipsum?
Lorem Ipsum is simply dummy text of the printing and typesetting industry.
Lorem Ipsum has been the industry's standard dummy text ever since the 1500s, when an unknown printer took a galley of t
ype and scrambled it to make a type specimen book.
It was popularised in the 1960s with the release of Letraset sheets containing Lorem Ipsum passages, and more recently w
ith desktop publishing software like Aldus PageMaker including versions of Lorem Ipsum.
Lorem
```

-n

Показывает имена строк в которых найдены совпадения.

```
anastasia@WIN-01P8382GL93:~/university/Lab5$ grep -n Lorem 123
2:What is Lorem Ipsum?
3:Lorem Ipsum is simply dummy text of the printing and typesetting industry.
4:Lorem Ipsum has been the industry's standard dummy text ever since the 1500s, when an unknown printer took a galley of
type and scrambled it to make a type specimen book.
6:It was popularised in the 1960s with the release of Letraset sheets containing Lorem Ipsum passages, and more recently
with desktop publishing software like Aldus PageMaker including versions of Lorem Ipsum.
7:Lorem
anastasia@WIN-01P8382GL93:~/university/Lab5$ |
```

-i

Игнорирует регистр букв.

```
anastasia@WIN-01P8382GL93:~/university/Lab5$ grep -i Lorem 123
What is Lorem Ipsum?
lorem Ipsum is simply dummy text of the printing and typesetting industry.
LOreM Ipsum has been the industry's standard dummy text ever since the 1500s, when an unknown printer took a galley of t
ype and scrambled it to make a type specimen book.
LOREM
It was popularised in the 1960s with the release of Letraset sheets containing Lorem Ipsum passages, and more recently w
ith desktop publishing software like Aldus PageMaker including versions of Lorem Ipsum.
Lorem
anastasia@WIN-01P8382GL93:~/university/Lab5$ grep Lorem 123
What is Lorem Ipsum?
It was popularised in the 1960s with the release of Letraset sheets containing Lorem Ipsum passages, and more recently w
ith desktop publishing software like Aldus PageMaker including versions of Lorem Ipsum.
Lorem
anastasia@WIN-01P8382GL93:~/university/Lab5$ |
```

-v

Выводит все строки которые не содержат совпадений с запросом (паттерном).

```
anastasia@WIN-01P8382GL93:~/university/Lab5$ grep -v Lorem 123
lorem Ipsum is simply dummy text of the printing and typesetting industry.
LOreM Ipsum has been the industry's standard dummy text ever since the 1500s, when an unknown printer took a galley of t
ype and scrambled it to make a type specimen book.
It has survived not only five centuries, but also the leap into electronic typesetting, remaining essentially unchanged.
LOREM
anastasia@WIN-01P8382GL93:~/university/Lab5$ grep -v -i Lorem 123
It has survived not only five centuries, but also the leap into electronic typesetting, remaining essentially unchanged.
anastasia@WIN-01P8382GL93:~/university/Lab5$ |
```

-W

Ищет заданную строку в документе, выдавая совпадения только с целыми словами.

```
anastasia@WIN-01P8382GL93:~/university/Lab5$ grep Lorem 123
What is Lorem Ipsum?
It was popularised in the 1960s with the release of Letraset sheets containing Lorem Ipsum passages, and more recently with desktop publishing software like Aldus PageMaker including versions of Lorem Ipsum.
Lorem
anastasia@WIN-01P8382GL93:~/university/Lab5$ grep Lor 123
What is Lorem Ipsum?
It was popularised in the 1960s with the release of Letraset sheets containing Lorem Ipsum passages, and more recently with desktop publishing software like Aldus PageMaker including versions of Lorem Ipsum.
Lorem
anastasia@WIN-01P8382GL93:~/university/Lab5$ grep -w Lor 123
anastasia@WIN-01P8382GL93:~/university/Lab5$ grep -w Lorem 123
What is Lorem Ipsum?
It was popularised in the 1960s with the release of Letraset sheets containing Lorem Ipsum passages, and more recently with desktop publishing software like Aldus PageMaker including versions of Lorem Ipsum.
Lorem
anastasia@WIN-01P8382GL93:~/university/Lab5$ |
```

-r

Ищет заданную подстроку во всех файлах директории рекурсивно.

```
anastasia@WIN-01P8382GL93:~/university/Lab5$ grep -r 4
File2.txt:44444444
File.txt:line 4
anastasia@WIN-01P8382GL93:~/university/Lab5$ grep -r the
File3.txt:Grep is an essential Linux and Unix command. It is used to search text and strings in a given file. In other words, grep command searches the given file for lines containing a match to the given strings or words. It is one of the most useful commands on Linux and Unix-like system for developers and sysadmins. Let us see how to use grep on a Linux or Unix like system.
123:Lorem Ipsum is simply dummy text of the printing and typesetting industry.
123:LOREM Ipsum has been the industry's standard dummy text ever since the 1500s, when an unknown printer took a galley of type and scrambled it to make a type specimen book.
123:It has survived not only five centuries, but also the leap into electronic typesetting, remaining essentially unchanged.
123:It was popularised in the 1960s with the release of Letraset sheets containing Lorem Ipsum passages, and more recently with desktop publishing software like Aldus PageMaker including versions of Lorem Ipsum.
anastasia@WIN-01P8382GL93:~/university/Lab5$ |
```

-C

Считает количество строк где найдено совпадение.

```
anastasia@WIN-01P8382GL93:~/university/Lab5$ grep -n Lorem 123
2:What is Lorem Ipsum?
7:It was popularised in the 1960s with the release of Letraset sheets containing Lorem Ipsum passages, and more recently with desktop publishing software like Aldus PageMaker including versions of Lorem Ipsum.
8:Lorem
anastasia@WIN-01P8382GL93:~/university/Lab5$ grep -c Lorem 123
3
anastasia@WIN-01P8382GL93:~/university/Lab5$ |
```

-B – before печатает заданное количество строк до найденной строки

-A - after печатает заданное количество строк после найденной строки

-C - context печатает заданное количество строк до и после найденной строки

```
anastasia@WIN-01P8382GL93:~/university/Lab5$ grep -B1 Lorem 123
What is Lorem Ipsum?
--
LOREM
It was popularised in the 1960s with the release of Letraset sheets containing Lorem Ipsum passages, and more recently with desktop publishing software like Aldus PageMaker including versions of Lorem Ipsum.
Lorem
anastasia@WIN-01P8382GL93:~/university/Lab5$ grep -A1 Lorem 123
What is Lorem Ipsum?
Lorem Ipsum is simply dummy text of the printing and typesetting industry.
--
It was popularised in the 1960s with the release of Letraset sheets containing Lorem Ipsum passages, and more recently with desktop publishing software like Aldus PageMaker including versions of Lorem Ipsum.
Lorem
anastasia@WIN-01P8382GL93:~/university/Lab5$ grep -C1 Lorem 123
What is Lorem Ipsum?
Lorem Ipsum is simply dummy text of the printing and typesetting industry.
--
LOREM
It was popularised in the 1960s with the release of Letraset sheets containing Lorem Ipsum passages, and more recently with desktop publishing software like Aldus PageMaker including versions of Lorem Ipsum.
Lorem
anastasia@WIN-01P8382GL93:~/university/Lab5$ |
```

SORT

Сортирует строки в алфавитном порядке.

```
anastasia@WIN-01P8382GL93:~/university/Lab5$ sort 123

It has survived not only five centuries, but also the leap into electronic typesetting, remaining essentially unchanged.

It was popularised in the 1960s with the release of Letraset sheets containing Lorem Ipsum passages, and more recently w
ith desktop publishing software like Aldus PageMaker including versions of Lorem Ipsum.
LOREM
LOReM Ipsum has been the industry's standard dummy text ever since the 1500s, when an unknown printer took a galley of t
ype and scrambled it to make a type specimen book.
Lorem
What is Lorem Ipsum?
lorem Ipsum is simply dummy text of the printing and typesetting industry.
anastasia@WIN-01P8382GL93:~/university/Lab5$ |
```

-n

Сортировка чисел от меньшего к большему. В данном случае ключом -k4 мы выбираем столбик в котором будет происходить сортировка.

```
anastasia@WIN-01P8382GL93:~/university/Lab5$ sort -k4n File.txt
Barbara Swingle 201-555-9257 -5
Susan Topple 212-555-4932 -3
Tony Iannino 973-555-1295 11
Alice Chebba 973-555-2015 12
Susan Goldberg 201-555-7776 17
Liz Stachiw 212-555-2298 21
anastasia@WIN-01P8382GL93:~/university/Lab5$ |
```

-r

Сортирует строки в обратном порядке

```
anastasia@WIN-01P8382GL93:~/university/Lab5$ sort -r 123
lorem Ipsum is simply dummy text of the printing and typesetting industry.
What is Lorem Ipsum?
Lorem
LOReM Ipsum has been the industry's standard dummy text ever since the 1500s, when an unknown printer took a galley of t
ype and scrambled it to make a type specimen book.
LOREM
It was popularised in the 1960s with the release of Letraset sheets containing Lorem Ipsum passages, and more recently w
ith desktop publishing software like Aldus PageMaker including versions of Lorem Ipsum.
It has survived not only five centuries, but also the leap into electronic typesetting, remaining essentially unchanged.

anastasia@WIN-01P8382GL93:~/university/Lab5$ ~|
```

-R

Сортирует случайно, но при этом группирует одинаковые параметры.

```
anastasia@WIN-01P8382GL93:~/university/Lab5$ sort -R File.txt
Susan Topple 212-555-4932 -3
Liz Stachiw 212-555-2298 21
Susan Goldberg 201-555-7776 17
Alice Chebba 973-555-2015 2
Tony Iannino 973-555-1295 1
Barbara Swingle 201-555-9257 -5
anastasia@WIN-01P8382GL93:~/university/Lab5$ |
```

-M

Сортирует месяца в правильном порядке.

```
anastasia@WIN-01P8382GL93:~/university/Lab5$ cat month.txt
October
December
January
February
March
April
May
September
November
June
July
August
anastasia@WIN-01P8382GL93:~/university/Lab5$ sort -M month.txt

January
February
March
April
May
June
July
August
September
October
November
December
```

-k

Сортировка по заданной колонке в алфавитном порядке, в данном случае сортировка происходит во второй колонке.

```
anastasia@WIN-01P8382GL93:~/university/Lab5$ cat File.txt
Alice   Chebba   973-555-2015 12
Susan   Goldberg 201-555-7776 17
Tony    Iannino  973-555-1295 11
Liz     Stachiw  212-555-2298 21
Barbara Swingle 201-555-9257 -5
Susan   Topple   212-555-4932 -3
anastasia@WIN-01P8382GL93:~/university/Lab5$ |
anastasia@WIN-01P8382GL93:~/university/Lab5$ sort -k2 File.txt
Liz     Stachiw  212-555-2298 21
Tony    Iannino  973-555-1295 11
Alice   Chebba   973-555-2015 12
Susan   Goldberg 201-555-7776 17
Susan   Topple   212-555-4932 -3
Barbara Swingle 201-555-9257 -5
```


-t

Использовать заданный символ в качестве сепаратора столбцов.

```
anastasia@WIN-01P8382GL93:~/university/Lab5$ cat file123.txt
2021/12/31
2023/03/12
2021/03/15
2021/11/23
2017/06/23
2017/06/22
2017/07/12
anastasia@WIN-01P8382GL93:~/university/Lab5$ sort -t/ -k2 file123.txt
2023/03/12
2021/03/15
2017/06/22
2017/06/23
2017/07/12
2021/11/23
2021/12/31
```

-u

Сортирует в алфавитном порядке при этом исключая дубликаты строк.

```
anastasia@WIN-01P8382GL93:~/university/Lab5$ cat month.txt
October
December
December
January
February
February
March
April
May
May
September
November
June
July
August
anastasia@WIN-01P8382GL93:~/university/Lab5$ sort -u month.txt
April
August
December
February
January
July
June
March
May
November
October
September
anastasia@WIN-01P8382GL93:~/university/Lab5$
```

Uniq

Показать все строки файла только по одному разу (порядок изменится):

```
anastasia@WIN-01P8382GL93:~/university/Lab5$ uniq month.txt
October
December
January
February
March
April
May
September
November
June
July
August
```

-c

Подсчитывает повторяющиеся строки, а также отдельные строки и отображает появление каждой строки, отображая число в начале строки:

```
anastasia@WIN-01P8382GL93:~/university/Lab5$ uniq -c month.txt
 1 October
 4 December
 1 January
 2 February
 1 March
 1 April
 1 May
 1 September
 1 November
 1 June
 1 July
 1 August
 2
anastasia@WIN-01P8382GL93:~/university/Lab5$ |
```

-d

Выводит только повторяющиеся строки.

```
anastasia@WIN-01P8382GL93:~/university/Lab5$ uniq -d month.txt
December
February
anastasia@WIN-01P8382GL93:~/university/Lab5$ |
```

-D

Выводит все повторяющиеся строки.

```
anastasia@WIN-01P8382GL93:~/university/Lab5$ uniq -D month.txt
December
December
December
December
February
February
anastasia@WIN-01P8382GL93:~/university/Lab5$ |
```

-u

Выводит только уникальные строки.

```
anastasia@WIN-01P8382GL93:~/university/Lab5$ uniq -u month.txt
October
January
March
April
May
September
November
June
July
August
```

-f

Пропустить заданное количество полей. Пробел используется в качестве дефолтного сепаратора.

```
anastasia@WIN-01P8382GL93:~/university/Lab5$ cat file123.txt
1. I love music.
2. I love music.
3. I love music of Harry Styles.
4. I love music of Harry Styles.
5. I love music of Harry Styles very much.
anastasia@WIN-01P8382GL93:~/university/Lab5$ uniq -f 1 file123.txt
1. I love music.
3. I love music of Harry Styles.
5. I love music of Harry Styles very much.
anastasia@WIN-01P8382GL93:~/university/Lab5$ |
```

cut

-c

Будет вырезать посимвольно, от 1 до 10-го символа

```
anastasia@WIN-01P8382GL93:~/university/Lab5$ cut -c 3-6 File.txt
ice
san
ny
z
rbar
san
anastasia@WIN-01P8382GL93:~/university/Lab5$ cut -c 1-7 File.txt
Alice
Susan
Tony
Liz
Barbara
Susan
anastasia@WIN-01P8382GL93:~/university/Lab5$ |
```

-d -f

Вырезать столбец. Сначала нужно определить разделитель, по умолчанию — это табуляция. Нужно указать номер столбца с опцией -f. f обозначает поле, например, cut -f3 file отобразит данные из третьего столбца.

```
anastasia@WIN-01P8382GL93:~/university/Lab5$ cat File.txt
Alice Chebba 973-555-2015 2
Susan Goldberg 201-555-7776 17
Tony Iannino 973-555-1295 1
Liz Stachiw 212-555-2298 21
Barbara Swingle 201-555-9257 -5
Susan Topple 212-555-4932 -3
anastasia@WIN-01P8382GL93:~/university/Lab5$ cut -d- -f3 File.txt
2015 2
7776 17
1295 1
2298 21
9257
4932
anastasia@WIN-01P8382GL93:~/university/Lab5$ cut -d- -f2 File.txt
555
555
555
555
555
555
anastasia@WIN-01P8382GL93:~/university/Lab5$ cut -d- -f1 File.txt
Alice Chebba 973
Susan Goldberg 201
Tony Iannino 973
Liz Stachiw 212
Barbara Swingle 201
Susan Topple 212
anastasia@WIN-01P8382GL93:~/university/Lab5$ |
```

--output-delimiter

Вывести заданную строку или символ в качестве сепаратора в выводе.

```
anastasia@WIN-01P8382GL93:~/university/Lab5$ cut -d- -f1,3 --output-delimiter="--test--" File.txt
Alice  Chebba  973--test--2015 2
Susan  Goldberg 201--test--7776 17
Tony   Iannino  973--test--1295 1
Liz    Stachiw 212--test--2298 21
Barbara Swingle 201--test--9257
Susan  Topple  212--test--4932
anastasia@WIN-01P8382GL93:~/university/Lab5$ cut -d- -f1,3 File.txt
Alice  Chebba  973-2015 2
Susan  Goldberg 201-7776 17
Tony   Iannino  973-1295 1
Liz    Stachiw 212-2298 21
Barbara Swingle 201-9257
Susan  Topple  212-4932
anastasia@WIN-01P8382GL93:~/university/Lab5$ cat File.txt
Alice  Chebba  973-555-2015 2
Susan  Goldberg 201-555-7776 17
Tony   Iannino  973-555-1295 1
Liz    Stachiw 212-555-2298 21
Barbara Swingle 201-555-9257 -5
Susan  Topple  212-555-4932 -3anastasia@WIN-01P8382GL93:~/university/Lab5$
```

head

Команда **head** используется для просмотра первых строк любого текстового файла. По умолчанию она покажет первые десять строк, но вы можете изменить это число.

```
anastasia@WIN-01P8382GL93:~/university/lab4$ cat File.1
qqqqqqqqqqqqqqqqqq
hello
world
i
love
you
anastasia@WIN-01P8382GL93:~/university/lab4$ head -3 File.1
qqqqqqqqqqqqqqqqqq
hello
world
anastasia@WIN-01P8382GL93:~/university/lab4$ |
```

-n просмотр заданной строки

-c просмотр заданного символа

```
anastasia@WIN-01P8382GL93:~/university/Lab5$ head -n1 File.txt
Alice  Chebba  973-555-2015 2
anastasia@WIN-01P8382GL93:~/university/Lab5$ head -c1 File.txt
Aanastasia@WIN-01P8382GL93:~/university/Lab5$ head -c3 File.txt
Alianastasia@WIN-01P8382GL93:~/university/Lab5$ |
```

WC —

Подсчёт числа строк в указанном файле (параметр `-l`), числа символов в указанном файле (параметр `-m`), числа слов в указанном файле (параметр `-w`).

```
anastasia@WIN-01P8382GL93:~/university/lab4$ wc -l File.1
6 File.1
anastasia@WIN-01P8382GL93:~/university/lab4$ cat File.1
qqqqqqqqqqqqqqqq
hello
world
i
love
you
anastasia@WIN-01P8382GL93:~/university/lab4$ |
```

(параметр `-m`)

Показать количество символов в объекте

```
anastasia@WIN-01P8382GL93:~/university/lab4$ cat File.1
qqqqqqqqqqqqqqqq
hello
world
i
love
you
anastasia@WIN-01P8382GL93:~/university/lab4$ wc -m File.1
39 File.1
anastasia@WIN-01P8382GL93:~/university/lab4$ |
```

(параметр `-w`)

Отобразить количество слов в объекте.

```
anastasia@WIN-01P8382GL93:~/university/lab4$ wc -w File.1
6 File.1
anastasia@WIN-01P8382GL93:~/university/lab4$ |
```

Tail

Выводит 10 последних строк файла

-n выводит заданное количество последних строк

-c выводит заданное количество последних символов (байтов)

```
anastasia@WIN-01P8382GL93:~/university/Lab5$ tail -n3 File.txt
Liz      Stachiw  212-555-2298 21
Barbara Swingle 201-555-9257 -5
Susan    Topple   212-555-4932 -3
anastasia@WIN-01P8382GL93:~/university/Lab5$ tail -c10 File.txt
5-4932 -3
anastasia@WIN-01P8382GL93:~/university/Lab5$ |
```

Nl

Номер для каждой строки

```
anastasia@WIN-01P8382GL93:~/university/Lab5$ nl File.txt
 1 Alice   Chebba   973-555-2015 2
 2 Susan  Goldberg 201-555-7776 17
 3 Tony   Iannino  973-555-1295 1
 4 Liz    Stachiw  212-555-2298 21
 5 Barbara Swingle 201-555-9257 -5
 6 Susan  Topple   212-555-4932 -3
anastasia@WIN-01P8382GL93:~/university/Lab5$ |
```

Paste

Вставляет соответствующие строки из указанных файлов в стандартный вывод.

```
anastasia@WIN-01P8382GL93:~/university/Lab5$ paste File.txt 123
Alice Chebba 973-555-2015 2
Susan Goldberg 201-555-7776 17 What is Lorem Ipsum?
Tony Iannino 973-555-1295 1 lorem Ipsum is simply dummy text of the printing and typesetting industry.
Liz Stachiw 212-555-2298 21 LOreM Ipsum has been the industry's standard dummy text ever since the 1500s, wh
en an unknown printer took a galley of type and scrambled it to make a type specimen book.
Barbara Swingle 201-555-9257 -5 It has survived not only five centuries, but also the leap into electronic types
etting, remaining essentially unchanged.
Susan Topple 212-555-4932 -3 LOREM
It was popularised in the 1960s with the release of Letraset sheets containing Lorem Ipsum passages, and more re
cently with desktop publishing software like Aldus PageMaker including versions of Lorem Ipsum.
Lorem
```

Join

Объединение

```
anastasia@WIN-01P8382GL93:~/university/Lab5$ join File File1
1 fruit apple
2 fruit pineapple
3 fruit cherry
4 not fruit book
5 not fruit book
anastasia@WIN-01P8382GL93:~/university/Lab5$ |
```

Cmp

Сравнивает два файла побайтово (каждый байт из одного файла с соответствующим байтом из другого).

```
anastasia@WIN-01P8382GL93:~/university/Lab5$ cat file123.txt
2021/12/31
2023/03/12
2021/03/15
2021/11/23
2017/06/23
2017/06/22
2017/07/12
anastasia@WIN-01P8382GL93:~/university/Lab5$ cat file_compare.txt
2021/12/31
2023/03/12
2021/03/15
2023/12/23
2017/06/23
2017/06/22
2017/07/12
anastasia@WIN-01P8382GL93:~/university/Lab5$ cmp file123.txt file_compare.txt
file123.txt file_compare.txt differ: byte 37, line 4
```

diff

Сравнивает два файла построчно (каждую строку одного файла с соответствующей строкой второго).

```
anastasia@WIN-01P8382GL93:~/university/Lab5$ diff file123.txt file_compare.txt
4c4
< 2021/11/23
---
> 2023/12/23
anastasia@WIN-01P8382GL93:~/university/Lab5$
```

-s

Выводит сообщение если файлы одинаковые. Без использования ключа если файлы идентичны – не будет выведено ничего.

```
anastasia@WIN-01P8382GL93:~/university/Lab5$ diff -s file123.txt file123_copy.txt
Files file123.txt and file123_copy.txt are identical
anastasia@WIN-01P8382GL93:~/university/Lab5$ diff file123.txt file123_copy.txt
anastasia@WIN-01P8382GL93:~/university/Lab5$
```

-q

Краткий отчет. Вывести сообщение «Файлы отличаются» только в случае, если файлы не идентичны.

```
anastasia@WIN-01P8382GL93:~/university/Lab5$ diff -q file123.txt file123_copy.txt
Files file123.txt and file123_copy.txt differ
anastasia@WIN-01P8382GL93:~/university/Lab5$
```

-y

Вывести построчное сравнение файлов строка к строке в виде двух колонок.

```
anastasia@WIN-01P8382GL93:~/university/Lab5$ diff -y file123.txt file_compare.txt
2021/12/31          2021/12/31
2023/03/12          2023/03/12
2021/03/15          2021/03/15
2021/11/23          | 2023/12/23
2017/06/23          2017/06/23
2017/06/22          2017/06/22
2017/07/12          2017/07/12
anastasia@WIN-01P8382GL93:~/university/Lab5$
```

tr

Изменить, заменить или удалить символы из стандартного ввода и перенаправить в стандартный вывод.

```
anastasia@WIN-01P8382GL93:~/university/Lab5$ cat file123.txt
2021/12/31
2023/03/12
2021/03/15
2021/11/23
2017/06/23
2017/06/22
2017/07/12
anastasia@WIN-01P8382GL93:~/university/Lab5$ cat file123.txt | tr / -
2021-12-31
2023-03-12
2021-03-15
2021-11-23
2017-06-23
2017-06-22
2017-07-12
anastasia@WIN-01P8382GL93:~/university/Lab5$ |
```

-d

Не заменять символ, а удалить его.

```
anastasia@WIN-01P8382GL93:~/university/Lab5$ cat file123.txt | tr -d /
20211231
20230312
20210315
20211123
20170623
20170622
20170712
```

-s

Сжать - если заменяемый символ повторяется, убрать повторения и оставить только один символ.

```
anastasia@WIN-01P8382GL93:~/university/Lab5$ cat file123.txt
2021---12-31
2023/03-----12
2021/03--15
2021-11/23
2017/06--23
2017---06/22
2017/07/12
anastasia@WIN-01P8382GL93:~/university/Lab5$ cat file123.txt | tr -s - /
2021/12/31
2023/03/12
2021/03/15
2021/11/23
2017/06/23
2017/06/22
2017/07/12
anastasia@WIN-01P8382GL93:~/university/Lab5$ |
```


Литература

1. <https://help.ubuntu.ru>
2. <https://ru.wikipedia.org/wiki/Linux>