

5. We can also complement the extracted fields by using the `--complement` option. Suppose you have many fields and you want to print all the columns except the third column, then use the following command:

```
$ cut -f3 --complement student_data.txt
No  Name    Percent
1   Sarath  90
2   Alex    98
3   Anu     90
```

6. To specify the delimiter character for the fields, use the `-d` option as follows:

```
$ cat delimited_data.txt
No;Name;Mark;Percent
1;Sarath;45;90
2;Alex;49;98
3;Anu;45;90

$ cut -f2 -d";" delimited_data.txt
Name
Sarath
Alex
Anu
```

There's more

The `cut` command has more options to specify the character sequences to be displayed as columns. Let's go through the additional options available with `cut`.

Specifying the range of characters or bytes as fields

Suppose that we don't rely on delimiters, but we need to extract fields in such a way that we need to define a range of characters (counting from 0 as the start of line) as a field. Such extractions are possible with `cut`.

Let's see what notations are possible:

N-	from the Nth byte, character, or field, to the end of the line
N-M	from the Nth to Mth (included) byte, character, or field
-M	from the first to Mth (included) byte, character, or field

We use the preceding notations to specify fields as a range of bytes or characters with the following options:

- ▶ `-b` for bytes
- ▶ `-c` for characters
- ▶ `-f` for defining fields

For example:

```
$ cat range_fields.txt
abcdefghijklmnopqrstuvwxyz
abcdefghijklmnopqrstuvwxyz
abcdefghijklmnopqrstuvwxyz
abcdefghijklmnopqrstuvwxy
```

You can print the first to fifth characters as follows:

```
$ cut -c1-5 range_fields.txt
abcde
abcde
abcde
abcde
```

The first two characters can be printed as follows:

```
$ cut range_fields.txt -c -2
ab
ab
ab
ab
```

Replace `-c` with `-b` to count in bytes.

We can specify the output delimiter while using with `-c`, `-f`, and `-b`, as follows:

```
--output-delimiter "delimiter string"
```

When multiple fields are extracted with `-b` or `-c`, the `--output-delimiter` is a must. Otherwise, you cannot distinguish between fields if it is not provided. For example:

```
$ cut range_fields.txt -c1-3,6-9 --output-delimiter ","
abc,fghi
abc,fghi
abc,fghi
abc,fghi
```