■ Learn AWK – 25 Practical Examples

We'll assume a sample file **data.txt** with this content:

```
1 John  25 M
2 Alice 30 F
3 Bob   22 M
4 Carol 27 F
5 Dave  35 M
```

1. Print entire line

```
awk '{print}' data.txt
```

Output:

```
1 John 25 M
2 Alice 30 F
3 Bob 22 M
4 Carol 27 F
5 Dave 35 M
```

2. Print first column

```
awk '{print $1}' data.txt
```

Output:

```
1
2
3
4
5
```

3. Print second column

```
awk '{print $2}' data.txt
```

Output:

```
John
Alice
Bob
Carol
Dave
```

4. Print multiple columns

```
awk '{print $2, $3}' data.txt
```

Output:

```
John 25
Alice 30
Bob 22
Carol 27
Dave 35
```

5. Print with custom separator

```
awk '{print $2 ":" $3}' data.txt
```

Output:

```
John:25
Alice:30
Bob:22
Carol:27
Dave:35
```

6. Display line numbers

```
awk '{print NR, $0}' data.txt
```

Output:

```
1 1 John 25 M
```

```
2 2 Alice 30 F
3 3 Bob 22 M
4 4 Carol 27 F
5 5 Dave 35 M
```

7. Print number of fields in each line

```
awk '{print NF, $0}' data.txt
```

Output:

```
4 1 John 25 M
4 2 Alice 30 F
4 3 Bob 22 M
4 4 Carol 27 F
4 5 Dave 35 M
```

8. Print last field

```
awk '{print $NF}' data.txt
```

Output:

```
M
F
M
F
M
```

9. Print second-to-last field

```
awk '{print $(NF-1)}' data.txt
```

Output:

```
25
30
22
27
35
```

10. Print only lines with age > 25

```
awk '$3 > 25 {print $0}' data.txt
```

Output:

```
2 Alice 30 F
4 Carol 27 F
5 Dave 35 M
```

11. Print only female records

```
awk '$4=="F" {print $2, $3}' data.txt
```

Output:

```
Alice 30
Carol 27
```

12. Count total lines

```
awk 'END {print NR}' data.txt
```

Output:

```
5
```

13. Calculate sum of ages

```
awk '{sum += $3} END {print sum}' data.txt
```

Output:

```
139
```

14. Calculate average age

```
awk '{sum += $3} END {print sum/NR}' data.txt
```

Output:

```
27.8
```

15. Print lines longer than 15 characters

```
awk 'length($0) > 15' data.txt
```

Output:

```
2 Alice 30 F
5 Dave 35 M
```

16. Change output field separator

```
awk 'BEGIN {OFS=" - "} {print $2, $3}' data.txt
```

Output:

```
John - 25
Alice - 30
Bob - 22
Carol - 27
Dave - 35
```

17. Replace field separator in input (CSV)

```
awk -F',' '{print $2, $3}' people.csv
```

Output:

```
John 25
Alice 30
```

18. Print header + data

```
awk 'BEGIN {print "Name Age"} {print $2, $3}' data.txt
```

Output:

```
Name Age
John 25
Alice 30
Bob 22
Carol 27
Dave 35
```

19. Skip first line

```
awk 'NR>1 {print $0}' data.txt
```

Output:

```
2 Alice 30 F
3 Bob 22 M
4 Carol 27 F
5 Dave 35 M
```

20. Print first 3 lines only

```
awk 'NR<=3' data.txt
```

Output:

```
1 John 25 M
2 Alice 30 F
3 Bob 22 M
```

21. Print line if age between 25 and 30

```
awk '$3>=25 && $3<=30 {print $2, $3}' data.txt
```

Output:

```
John 25
Alice 30
Carol 27
```

22. Print total males and females

```
awk '{count[$4]++} END {for (g in count) print g, count[g]}' data.txt
```

Output:

```
M 3
F 2
```

23. Print max age

```
awk 'max < $3 {max=$3} END {print max}' data.txt
```

Output:

```
35
```

24. Print min age

```
awk 'min=="" || $3<min {min=$3} END {print min}' data.txt
```

Output:

```
22
```

25. Sort by age (using awk + sort)

```
awk '{print $3, $2}' data.txt | sort -n
```

Output:

```
22 Bob
25 John
27 Carol
30 Alice
35 Dave
```