```
kiran@KiranPS:/mnt/c/Users/kiran$ cat > sum.c << 'EOF'
#include <stdio.h>

int main() {
    int a = 5, b = 10;
    printf("Sum of %d and %d is %d\n", a, b, a + b);
    return 0;
}
EOF

cat > filecmd << 'EOF'
This is line 1
This is line 2
This is line 3
This is line 4
This is line 5
This is line 6
This is line 7
This is line 8
This is line 9
This is line 10
EOF

cat > sample.txt << 'EOF'
john:doe:25:50000
jane:smith:30:60000
bob:johnson:35:70000
alice:williams:28:55000
charlie:brown:32:65000
EOF
kiran@KiranPS:/mnt/c/Users/kiran$ cat > test.c << 'EOF'
#include <stdio.h>

int main() {
    printf("Hello World\n");
    return 0;
}
```

```
int helper_function() {
    return 1;
}
EOF

cat > employees.txt << 'EOF'
john 25 50000
jane 30 60000
bob 35 70000
alice 28 55000
charlie 32 65000
EOF

cat > example.txt << 'EOF'
apple
banana
banana
cherry
apple
date
date
EOF

cat > f1 << 'EOF'
A
B
C
EOF

EOFther simple line.t file.
kiran@KiranPS:/mnt/c/Users/kiran$ gcc sum.c && ./a.out
Sum of 5 and 10 is 15
kiran@KiranPS:/mnt/c/Users/kiran$ cat filecmd
head filecmd
head -n 5 filecmd
tail filecmd
```

```
head filecmd
head -n 5 filecmd
tail filecmd
tail +5 filecmd
This is line 1
This is line 2
This is line 3
This is line 4
This is line 5
This is line 6
This is line 7
This is line 8
This is line 9
This is line 10
This is line 1
This is line 2
This is line 3
This is line 4
This is line 5
This is line 6
This is line 7
This is line 8
This is line 9
This is line 10
This is line 1
This is line 2
This is line 3
This is line 4
This is line 5
This is line 1
This is line 2
This is line 3
This is line 4
This is line 5
This is line 6
This is line 7
This is line 8
```

```
This is line 8
This is line 9
This is line 10
This is line 5
This is line 6
This is line 7
This is line 8
This is line 9
This is line 10
kiran@KiranPS:/mnt/c/Users/kiran$ cut -c 1-3 sample.txt
cut -c 4-10 sample.txt
cut -d ':' -f2 sample.txt
cut -d ':' -f2,3 sample.txt
joh
jan
bob
ali
cha
n:doe:2
e:smith
:johnso
ce:will
rlie:br
doe
smith
johnson
williams
brown
doe:25
smith:30
johnson:35
williams:28
brown:32
kiran@KiranPS:/mnt/c/Users/kiran$ paste f1 f2
paste -d ':' f1 f2
paste -s f1 f2
A       1
```

```
A       1
B       2
C       3
A:1
B:2
C:3
A       B       C
1       2       3
kiran@KiranPS:/mnt/c/Users/kiran$ sort sample.txt
sort sample.txt -r
sort -t ':' -k2 sample.txt
sort -t ':' -k3 sample.txt
sort -t ':' -k4 sample.txt
sort -t ':' -k3 sample.txt -r
alice:williams:28:55000
bob:johnson:35:70000
charlie:brown:32:65000
jane:smith:30:60000
john:doe:25:50000
john:doe:25:50000
jane:smith:30:60000
charlie:brown:32:65000
bob:johnson:35:70000
alice:williams:28:55000
charlie:brown:32:65000
john:doe:25:50000
bob:johnson:35:70000
jane:smith:30:60000
alice:williams:28:55000
john:doe:25:50000
alice:williams:28:55000
jane:smith:30:60000
charlie:brown:32:65000
bob:johnson:35:70000
john:doe:25:50000
alice:williams:28:55000
jane:smith:30:60000
```

```
alice:williams:28:55000
john:doe:25:50000
kiran@KiranPS:/mnt/c/Users/kiran$ tr ':' '|' < sample.txt
tr ':' '|' < sample.txt > s1.txt
cat s1.txt
tr ':0' '|$' < sample.txt
tr -s '0' < sample.txt
tr -d '0' < sample.txt
john|doe|25|50000
jane|smith|30|60000
bob|johnson|35|70000
alice|williams|28|55000
charlie|brown|32|65000
john|doe|25|50000
jane|smith|30|60000
bob|johnson|35|70000
alice|williams|28|55000
charlie|brown|32|65000
john|doe|25|5$$$$
jane|smith|3$|6$$$$
bob|johnson|35|7$$$$
alice|williams|28|55$$$
charlie|brown|32|65$$$
john:doe:25:50
jane:smith:30:60
bob:johnson:35:70
alice:williams:28:550
charlie:brown:32:650
john:doe:25:5
jane:smith:3:6
bob:johnson:35:7
alice:williams:28:55
charlie:brown:32:65
kiran@KiranPS:/mnt/c/Users/kiran$ uniq example.txt

cmp sample.txt s1.txt || echo "Files differ"
```

```
kiran@KiranPS:/mnt/c/Users/kiran$ uniq example.txt

cmp sample.txt s1.txt || echo "Files differ"

diff sample.txt s1.txt
apple
banana
cherry
apple
date
sample.txt s1.txt differ: byte 5, line 1
Files differ
1,5c1,5
< john:doe:25:50000
< jane:smith:30:60000
< bob:johnson:35:70000
< alice:williams:28:55000
< charlie:brown:32:65000
---
> john|doe|25|50000
> jane|smith|30|60000
> bob|johnson|35|70000
> alice|williams|28|55000
> charlie|brown|32|65000
kiran@KiranPS:/mnt/c/Users/kiran$ grep main test.c
grep ^main test.c
grep ^int test.c
grep \; test.c
int main() {
int main() {
int helper_function() {
    printf("Hello World\n");
    return 0;
    return 1;
kiran@KiranPS:/mnt/c/Users/kiran$ sed 's/Hello/Hi/' sed_test
sed -i 's/Hello/Hi/' sed_test
cat sed_test
```

```
cat sed_test
sed 's/!/$/g' sed_test
sed '/simple/d' sed_test
sed '/Hi/a Welcome to sed' sed_test
sed -n '/Hi/p' sed_test
Hi World!
This is a simple test file.
Hi again!
Another simple line.
Hi World!
This is a simple test file.
Hi again!
Another simple line.
Hi World$
This is a simple test file.
Hi again$
Another simple line.
Hi World!
Hi again!
Hi World!
Welcome to sed
This is a simple test file.
Hi again!
Welcome to sed
Another simple line.
Hi World!
Hi again!
kiran@KiranPS:/mnt/c/Users/kiran$ awk '{print $0}' employees.txt
awk '{print $1, $3}' employees.txt
awk '$3 > 50000 {print $1, $3}' employees.txt
awk 'BEGIN {print "Name Salary"} {print $1, $3}' employees.txt
awk 'BEGIN {print "Name Age Salary"} {print $1, $2, $3}' employees.txt
awk '{total+= $3} END {print "Total Salary=", total}' employees.txt
awk '{print NR, $1}' employees.txt
awk '{print NR, $0}' employees.txt
awk '/alice/' employees.txt
awk '$2 < 30 {print $1, $2}' employees.txt
```

```
awk 'BEGIN {print "Name Salary"} {print $1, $3}' employees.txt
awk 'BEGIN {print "Name Age Salary"} {print $1, $2, $3}' employees.txt
awk '{total+= $3} END {print "Total Salary=", total}' employees.txt
awk '{print NR, $1}' employees.txt
awk '{print NR, $0}' employees.txt
awk '/alice/' employees.txt
awk '$2 < 30 {print $1, $2}' employees.txt
awk '{printf "Name: %s, Age: %d, Salary: %d\n", $1, $2, $3}' employees.txt
awk 'END {print "Total employees= ", NR}' employees.txt
john 25 50000
jane 30 60000
bob 35 70000
alice 28 55000
charlie 32 65000
john 50000
jane 60000
bob 70000
alice 55000
charlie 65000
jane 60000
bob 70000
alice 55000
charlie 65000
Name Salary
john 50000
jane 60000
bob 70000
alice 55000
charlie 65000
Name Age Salary
john 25 50000
jane 30 60000
bob 35 70000
alice 28 55000
charlie 32 65000
Total Salary= 300000
1 john
```

```
charlie 65000
jane 60000
bob 70000
alice 55000
charlie 65000
Name Salary
john 50000
jane 60000
bob 70000
alice 55000
charlie 65000
Name Age Salary
john 25 50000
jane 30 60000
bob 35 70000
alice 28 55000
charlie 32 65000
Total Salary= 300000
1 john
2 jane
3 bob
4 alice
5 charlie
1 john 25 50000
2 jane 30 60000
3 bob 35 70000
4 alice 28 55000
5 charlie 32 65000
alice 28 55000
john 25
alice 28
Name: john, Age: 25, Salary: 50000
Name: jane, Age: 30, Salary: 60000
Name: bob, Age: 35, Salary: 70000
Name: alice, Age: 28, Salary: 55000
Name: charlie, Age: 32, Salary: 65000
Total employees=  5
```