Chapter 4

Lab 4.1.9 (1)

```
[ec2-user@ip-172-31-82-95 Lab 4.1.9 (1)]$ g++ -lm -o output Lab*.cpp
[ec2-user@ip-172-31-82-95 Lab 4.1.9 (1)]$ ./output
Hello
3
4 2 3 4 5
2 4 5
3 4 4 5
-----------
Course 1: final 3.50, grades : 2 3 4 5
Course 2: final 4.50, grades : 4 5
Course 3: final 4.33, grades : 4 4 5
Overall final : 4.11[ec2-user@ip-172-31-82-95 Lab 4.1.9 (1)]$ ./output
Hello
2
1 2 3 4
1 1 5
-----------
Course 1: final 2.00, grades : 2
Course 2: final 2.00, grades : 4 1 1
Overall final : 2.00[ec2-user@ip-172-31-82-95 Lab 4.1.9 (1)]$
```

Lab 4.2.5 (1)

```
[ec2-user@ip-172-31-82-95 Lab 4.2.5 (1)]$ g++ -lm -o output Lab*.cpp
[ec2-user@ip-172-31-82-95 Lab 4.2.5 (1)]$ ./output
N : 5
Sum : 15
[ec2-user@ip-172-31-82-95 Lab 4.2.5 (1)]$ ./output
N : 124
Sum : 7750
[ec2-user@ip-172-31-82-95 Lab 4.2.5 (1)]$ ./output
N : 100000
Sum : 5000050000
[ec2-user@ip-172-31-82-95 Lab 4.2.5 (1)]$ ./output
N : 42
Sum : 903
[ec2-user@ip-172-31-82-95 Lab 4.2.5 (1)]$
```

Lab 4.2.7 (1)

```
[ec2-user@ip-172-31-82-95 Lab 4.2.7 (1)]$ g++ -lm -o output Lab*.cpp
[ec2-user@ip-172-31-82-95 Lab 4.2.7 (1)]$ ./output
The numbers are not equal
The numbers are close enough
The numbers are still close enough
The numbers are not close enough
[ec2-user@ip-172-31-82-95 Lab 4.2.7 (1)]$
```

Lab 4.4.1 (1)

```
[ec2-user@ip-172-31-82-95 Lab 4.4.1 (1)]$ g++ -lm -o output Lab*.cpp
[ec2-user@ip-172-31-82-95 Lab 4.4.1 (1)]$ ./output
Type string:
The quick brown fox jumps over the lazy dog
Pangram
a - 1
b - 1
c - 1
d - 1
e - 3
f - 1
g - 1
h - 2
i - 1
j - 1
k - 1
l - 1
m - 1
n - 1
o - 4
p - 1
q - 1
r - 2
s - 1
t - 2
u - 2
v - 1
w - 1
x - 1
y - 1
z - 1
[ec2-user@ip-172-31-82-95 Lab 4.4.1 (1)]$ ./output
Type string:
quick brown fox jumps over lazy dog
```

```
Type string:
quick brown fox jumps over lazy dog
Not pangram
a - 1
b - 1
c - 1
d - 1
e - 1
f - 1
g - 1
h - 0
i - 1
j - 1
k - 1
l - 1
m - 1
n - 1
o - 4
p - 1
q - 1
r - 2
s - 1
t - 0
u - 2
v - 1
w - 1
x - 1
y - 1
z - 1
[ec2-user@ip-172-31-82-95 Lab 4.4.1 (1)]$ ./output
Type string:
qewerw ergdfgh asfgs3wefgbgfjk
Not pangram
```

```
[ec2-user@ip-172-31-82-95 Lab 4.4.1 (1)]$ ./output
Type string:
qewerw ergdfgh asfgs3wefgbgfjk
Not pangram
a - 1
b - 1
c - 0
d - 1
e - 4
f - 4
g - 5
h - 1
i - 0
j - 1
k - 1
l - 0
m - 0
n - 0
o - 0
p - 0
q - 1
r - 2
s - 2
t - 0
u - 0
v - 0
w - 3
x - 0
y - 0
z - 0
[ec2-user@ip-172-31-82-95 Lab 4.4.1 (1)]$ 
```

Lab 4.5.2 (1)

```
[ec2-user@ip-172-31-82-95 Lab 4.5.2 (1)]$ g++ -std=c++11 -lm -o output Lab*.cpp
[ec2-user@ip-172-31-82-95 Lab 4.5.2 (1)]$ ./output
Type string:
1.2.3.4
Correct IP
[ec2-user@ip-172-31-82-95 Lab 4.5.2 (1)]$ ./output
Type string:
255.255.255.255
Correct IP
[ec2-user@ip-172-31-82-95 Lab 4.5.2 (1)]$ ./output
Type string:
355.255.255.255
Too big a value of a part
[ec2-user@ip-172-31-82-95 Lab 4.5.2 (1)]$ ./output
Type string:
1000.255.255.255
Too many characters in a part
[ec2-user@ip-172-31-82-95 Lab 4.5.2 (1)]$ ./output
Type string:
ASD.255.255.255
Only digits and dots allowed
[ec2-user@ip-172-31-82-95 Lab 4.5.2 (1)]$ ./output
Type string:
123.0000.123.1233
Too many characters in a part
[ec2-user@ip-172-31-82-95 Lab 4.5.2 (1)]$
```

Lab 4.5.6 (1)

```
[ec2-user@ip-172-31-82-95 Lab 4.5.6 (1)]$ g++ -std=c++11 -lm -o output Lab*.cpp
[ec2-user@ip-172-31-82-95 Lab 4.5.6 (1)]$ ./output
This is      a totally    normal     sentence.
This is a totally normal sentence.
[ec2-user@ip-172-31-82-95 Lab 4.5.6 (1)]$ ./output
This shouldn't change a bit!
This shouldn't change a bit!
[ec2-user@ip-172-31-82-95 Lab 4.5.6 (1)]$ ./output
sdfsdf sdfsd    dfgdfg    dfgdfg
sdfsdf sdfsd dfgdfg dfgdfg
[ec2-user@ip-172-31-82-95 Lab 4.5.6 (1)]$
```

Lab 4.5.7 (1)

```
[ec2-user@ip-172-31-82-95 Lab 4.5.7 (1)]$ g++ -std=c++11 -lm -o output Lab*.cpp
[ec2-user@ip-172-31-82-95 Lab 4.5.7 (1)]$ ./output
This sentence has no duplicate words
This sentence has no duplicate words
[ec2-user@ip-172-31-82-95 Lab 4.5.7 (1)]$ ./output
This sentence has has only unique words
This sentence has only unique words
[ec2-user@ip-172-31-82-95 Lab 4.5.7 (1)]$ ./output
You should, should you be interested, look for for more information online
You should, should you be interested, look for more information online
[ec2-user@ip-172-31-82-95 Lab 4.5.7 (1)]$ ./output
Qwe qwe qwe asd sdf
Qwe qwe asd sdf
[ec2-user@ip-172-31-82-95 Lab 4.5.7 (1)]$
```

Lab 4.5.7 (2)

```
[ec2-user@ip-172-31-82-95 Lab 4.5.7 (2)]$ g++ -std=c++11 -lm -o output Lab*.cpp
[ec2-user@ip-172-31-82-95 Lab 4.5.7 (2)]$ ./output
John
Mary
John had a little lamb
Mary had a little lamb
[ec2-user@ip-172-31-82-95 Lab 4.5.7 (2)]$ ./output
difficult problems
opportunities to grow
A software engineer may encounter many difficult problems
A software engineer may encounter many opportunities to grow
[ec2-user@ip-172-31-82-95 Lab 4.5.7 (2)]$ ./output
Linux
GNU Linux
Some prefer Linux over Windows
Some prefer GNU Linux over Windows
[ec2-user@ip-172-31-82-95 Lab 4.5.7 (2)]$
```

Lab 4.5.7 (3)

```
[ec2-user@ip-172-31-82-95 Lab 4.5.7 (3)]$ g++ -std=c++11 -lm -o output Lab*.cpp
[ec2-user@ip-172-31-82-95 Lab 4.5.7 (3)]$ ./output
has,no,this
This sentence has no stop words
sentence stop words
[ec2-user@ip-172-31-82-95 Lab 4.5.7 (3)]$ ./output
a,has
Mary has a little lamb
Mary little lamb
[ec2-user@ip-172-31-82-95 Lab 4.5.7 (3)]$ ./output
qwe,wer
qwe asd zxc wer asd qwe
asd zxc asd qwe
[ec2-user@ip-172-31-82-95 Lab 4.5.7 (3)]$
```

Lab 4.5.7 (4)

```
[ec2-user@ip-172-31-82-95 Lab 4.5.7 (4)]$ g++ -std=c++11 -lm -o output Lab*.cpp
[ec2-user@ip-172-31-82-95 Lab 4.5.7 (4)]$ ./output
type 2 words, separated by whitespace :
cat dog
not anagrams
[ec2-user@ip-172-31-82-95 Lab 4.5.7 (4)]$ ./output
type 2 words, separated by whitespace :
cellar recall
anagrams
[ec2-user@ip-172-31-82-95 Lab 4.5.7 (4)]$ ./output
type 2 words, separated by whitespace :
antler learnt
anagrams
[ec2-user@ip-172-31-82-95 Lab 4.5.7 (4)]$ ./output
type 2 words, separated by whitespace :
qwe weq
anagrams
[ec2-user@ip-172-31-82-95 Lab 4.5.7 (4)]$
```

Lab 4.5.7 (5)

```
[ec2-user@ip-172-31-82-95 Lab 4.5.7 (5)]$ g++ -std=c++11 -lm -o output Lab*.cpp
[ec2-user@ip-172-31-82-95 Lab 4.5.7 (5)]$ ./output
DDDD
The combination for the safe is 2380, but please keep it a secret!
2380

[ec2-user@ip-172-31-82-95 Lab 4.5.7 (5)]$ ./output
AAAAAA
Mary has a little lamb with white fleece
little
fleece

[ec2-user@ip-172-31-82-95 Lab 4.5.7 (5)]$ ./output
DD-DDD
My zip code is 02-154, make sure you don't forget it
02-154

[ec2-user@ip-172-31-82-95 Lab 4.5.7 (5)]$ ./output
??
a lot!
a
 l
lo
ot
t!

[ec2-user@ip-172-31-82-95 Lab 4.5.7 (5)]$
```

```
[ec2-user@ip-172-31-82-95 Lab 4.5.7 (5)]$ ./output
AAA
qwer qwd zxc sdfs
qwe
wer
qwd
zxc
sdf
dfs
```

Lab 4.5.7 (6)

```
[ec2-user@ip-172-31-82-95 Lab 4.5.7 (6)]$ g++ -std=c++11 -lm -o output Lab*.cpp
[ec2-user@ip-172-31-82-95 Lab 4.5.7 (6)]$ ./output
What do you *mean*?
What do you MEAN?
[ec2-user@ip-172-31-82-95 Lab 4.5.7 (6)]$ ./output
This is _really_ important!
This is  r e a l l y  important!
[ec2-user@ip-172-31-82-95 Lab 4.5.7 (6)]$ ./output
*This* one _might *be _quite tricky_*, if you know what I mean.
THIS one might be  q u i t e   t r i c k y , if you know what I mean.
[ec2-user@ip-172-31-82-95 Lab 4.5.7 (6)]$ ./output
*qwe* _wer_
QWE  w e r
[ec2-user@ip-172-31-82-95 Lab 4.5.7 (6)]$ 
```

Lab 4.5.7 (7)

```
[ec2-user@ip-172-31-82-95 Lab 4.5.7 (7)]$ g++ -std=c++11 -lm -o output Lab*.cpp
[ec2-user@ip-172-31-82-95 Lab 4.5.7 (7)]$ ./output
Pas5w[]rd
The password is valid
[ec2-user@ip-172-31-82-95 Lab 4.5.7 (7)]$ ./output
qwerty
The password must be 8 characters long
The password must have at least one upper case letter
The password must have at least one digit
The password must have at least one special character
[ec2-user@ip-172-31-82-95 Lab 4.5.7 (7)]$ ./output
P@ssw0rd
The password is valid
[ec2-user@ip-172-31-82-95 Lab 4.5.7 (7)]$ 
```

Lab 4.5.7 (8)

```
[ec2-user@ip-172-31-82-95 Lab 4.5.7 (8)]$ g++ -std=c++11 -lm -o output Lab*.cpp
[ec2-user@ip-172-31-82-95 Lab 4.5.7 (8)]$ ./output
person=Paul,action=strolls around,place=the park
[person] [action] [place]
Paul strolls around the park
[ec2-user@ip-172-31-82-95 Lab 4.5.7 (8)]$ ./output
customer=John,pet=dog
Dear [customer], we were happy to take care of your [pet] while you were away. Plea
se call our pet hotel again if you need help with your [pet]!
Dear John, we were happy to take care of your dog while you were away. Please call
our pet hotel again if you need help with your dog!
[ec2-user@ip-172-31-82-95 Lab 4.5.7 (8)]$ ./output
date=02/02/02 3:00PM,room=504
Dear [customer], your exam will take place on [date] in room [room]
Dear [customer], your exam will take place on 02/02/02 3:00PM in room 504
[ec2-user@ip-172-31-82-95 Lab 4.5.7 (8)]$ ./output
qwe=wer
[qwe] rrrrrrrrrrrrrrrrrrrrrrrrrr, zzzzzzzzzzzzzz [qwe]
wer rrrrrrrrrrrrrrrrrrrrrrrrrr, zzzzzzzzzzzzzz wer
[ec2-user@ip-172-31-82-95 Lab 4.5.7 (8)]$
```