# C Task

## Piramify

1. You will be given a string, containing characters only in the range of ’0’ – ’9’ (ASCII 48-57 decimal). This input string is rewritten in a pyramid pattern on a given number of rows. As an example take the following string „1234543”, and the number of rows to use 2.

**1 3 5 3  
 2 4 4**

This string shall then be read as „1353244.” Also, if the numbers (the leftmost digit is the most significant and the rightmost is the least significant) in each row is summed the result will be 1353+244 = 1597.

As another example, if the input is “123454321234”, and the number of rows to use is 5, the pyramid pattern looks like the following:

**1 1  
 2 2 2  
 3 3 3  
 4 4 4  
 5**

This time the string shall be read as „112223334445”. Also if the numbers (the leftmost digit is the most significant and the rightmost is the least significant) in each row is summed, the result will be 11+222+333+444+5 = 1015.

Write a function in C, what will take the input string, and make the pyramid conversion on it and return the sum of the rows. The declaration of the expected function shall look like the following:

int Piramify**(**char**\*** input**,** int numRows**,** char**\*** output**);**

input: input string

numRows: number of needed rows

output: “pyramid” format of the input string

2. Create a simple cmake project that creates a library from the above function.

3. Write unit tests for the function from (1.) and include the tests in the cmake project from (2.). Use a testing framework of your choice (e.g. GoogleTest, CppUnit).

*Please pack your solution in a ZIP file and send it in email. We kindly ask you not to share your solution on any public website (e.g. github.com, gitlab.com, medium.com, etc.). The ZIP should contain only the source code, the build-configuration files, which are required to build your solution, a short description how to build your solution and optionally other documentation, which you would like to add. You don’t need to include the source code of the 3rd party testing library (e.g. GoogleTest), which you chose, if it’s too large for an email. But in this case, please indicate the version and/or git hash of the library you used. This document is the property of Continental. It may not be distributed or reproduced in any form.*