

FIT2004: Lab questions for week 9

Objectives: This prac provides a platform for you to practise the formal concepts introduced during the lectures in weeks 7 & 8. Primarily, these concepts include pattern matching on strings and shortest-path algorithms on graphs.

1. The file **bwt.txt** on Moodle (in the week 9 section) contains a paragraph about data structures taken from Wikipedia.
 - (a) Write a program to convert the text in bwt.txt into Burrows-Wheeler Transform and compress this data using run-length encoding (e.g., 4i5o6i8j etc.)
 - (b) Write a program to invert the BWT text to recover the original paragraph.
 - (c) Write a program that takes as input a string and returns whether the string appears in bwt.txt. Also, print how many times the input string appears. Use the backward search on the BWT text to do this task.
2. Finish the tasks from the last week's lab if you have not already.

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