1. Name two applications of the Burrows-Wheeler transform. What is the actual benefit of the Burrows-Wheeler transform in these applications (in comparison to other methods)?

2. Given the Burrows-Wheeler transform $L = ammnab\$aaa$. (without dot)
   1. Decode the original text.
   2. Formulate an algorithm that efficiently counts the number of occurrences of a pattern in the original text (without decoding the original text). Describe all of the used data structures.
   3. Illustrate how your algorithm works by searching the pattern $P = \text{ana}$.

3. For the text tacaacaatacaagag construct the BWT and the arrays $C$ and $OCC$. Use them to search for the pattern $aca$. 