Project 3. Object-Oriented C++

In directory /comp/150C++/project3/ are some source files that implement a “rope” data type, which is intended to hold very long sequences of characters. They define a class Rope which supports the following operations:

- a constructor to create a rope from a char array;
- a constructor to create a rope from a literal string;
- a method to append one rope to another;
- a method to count the number of characters in a rope;
- a method to extract a subsequence of characters from a rope.

The source code for everything but the extraction method is present. Your job is to write the missing code.

Project 3 is a rewrite of Project 2 using virtual methods rather than explicit pointers to functions.

Your main task in this project is to study the source code and understand how it works. Then write the bodies for the needed “get” methods for all classes.

Store your code in a file “rope2.cc” and use the Makefile supplied to compile it into one or more test programs. The test program “decode.cc” is internally documented. There is also a smaller demonstration program “demo.cc” to help you get started.

You should use an approach that is consistent with the code that is provided, and you should rely on the provided routines wherever you can. And of course you are expected to produce code that is completely correct.

Submit your file by Tuesday, March 16 at 5:00 p.m. using this command:

    provide 150C++ project3 rope2.cc