In the name of God

Computer Programming , Lecturer : Dr. Sharbatdar Second Semester of the Academic Year 2020

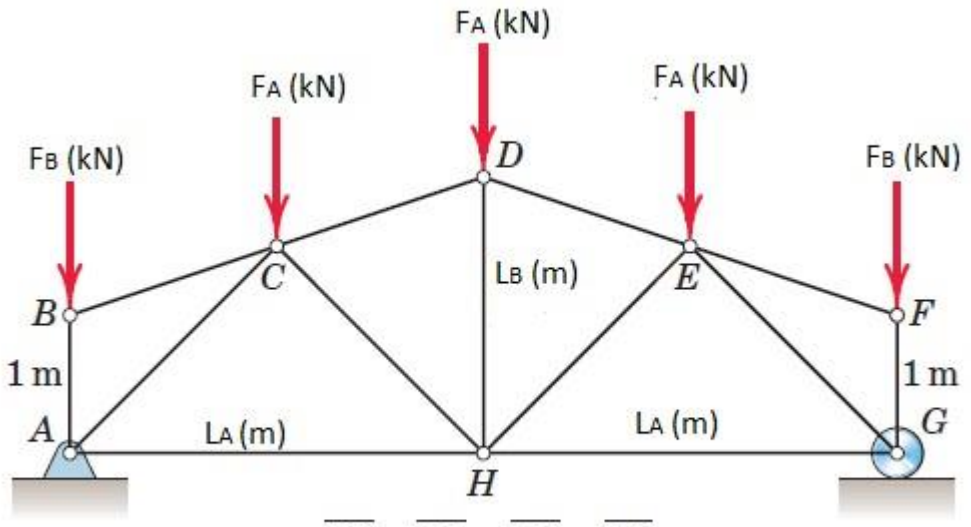
Final C++ Programming Course Project

Write a program that reads the information about the length on the components of the truss below LA, LB and the forces entered by FA and FB from the file in the order of case number , and also prints the force of each component and points A and G in a separate file for each case. Only cases that are outside the division of that case number is equal to the subdivision of your student number by 10 Be:

Case number %10 = Student ID %10

in the output should also report the maximum size of the force exerted on the truss.

$$Fmmax = \sqrt{F_x^2 + F_y^2} \quad AC: (Fx = \cdots kN \ , F_y = \cdots kN)$$



$$\overline{BC} = \overline{CD} = \overline{DE} = \overline{EF}$$

The output file for each case or the case number extension should be as follows:

Element	Fx (kN)	Fy(kN)	F magnitude(kN)
AB			
Ac			
AH			
Bc			
CD			
Ch			
De			
DH			
Ef			
Eg			
Eh			
Fg			
GH			
Point A			
Point G			

Define a class called truss that contains the necessary information about the force and length of each truss element, and consider an object for each leg.
Wherever necessary, use the appropriate functions to make the program more organized.
In the program you write, add appropriate and concise comments where necessary to make the code more readable.

Upload the CPP file and the output .txt files in the form of a zip file with your student number.
Unfortunately, any similarity in the code will result in the loss of the **total** score of the project.