



1. Write a computer program for generation NACA 4 and 5-digit airfoils. One of the best way of programming is the usage of object oriented programming known as OOP. To begin, write an OOP code (preferably in C++) which includes:

(a) An abstract class called NACA with the following methods:

- i. ExtractName()
- ii. PlotToFile()
- iii. CalculateLift()

(b) Instantiate two child classes named NACA-4digit and NACA-5digit

To verify your code, develop an OOP code with the following specifications and instruction:

- (a) Contains a list of pointers to the NACA abstract class.
- (b) Reads a list of NACA airfoil shape from an input file.
- (c) Determines whether it is a NACA 4-digit or 5-digit airfoil and instantiate the proper objec, accordingly.
- (d) Plot the shape of the airfoils in two different file streams named Shape4digit.plt and Shape5digiet.plt, respectively in TECPLOT format.
- (e) Plot the lift coefficient of the airfoils in two different file streams named Lift4digit.plt and Lift5digiet.plt, respectively in TECPLOT format.

Use the following sections for your input list:

NACA0012, NACA0024, NACA0036, NACA2412, NACA1624, NACA3236 NACA21012, NACA21024, NACA21036, NACA23012, NACA23024, NACA23036, NACA25012, NACA25024, NACA25036.