

**ENGINEERING H192
DAILY ASSIGNMENT B06**

File I/O

In this assignment you will get some practice reading from and writing to files, as well as some practice computing averages. You will write a program that opens a file for reading, reads the two values stored on each line (the base and height of a triangle), computes the area of the triangle, and writes the base, height, and area to the screen. Once your program is working you will modify it so that everything that is written to the screen will also be written to an output file.

Write a complete C/C++ program to:

- (1) Write your name, seat number, assignment number, date, instructor's initials, and section to the screen.
- (2) Open an existing data file, **b06.dat**, verifying the file opened successfully
- (3) Read each line in the file. Each line consists of a triangle's base and height
- (4) Write each line to the screen along with the calculated area for a triangle with the given base and height.
- (5) Determine the average of the bases, average of the heights, and average of the areas
- (6) Write the resulting averages, properly labeled, to the screen.

Begin by copying **b06.dat** from `~engh192/students` to your directory. You may want to use:

```
cp ~engh192/students/b06.dat b06.dat
```

When your program is working correctly, modify it so that the program will also:

- (1) Create and open an output file named **b06result.txt**, verifying the file opened successfully
- (2) Write your name, seat number, assignment number, date, instructor's initials, and section to the screen and to the output file.
- (3) Write each line from the input file appended with the calculated area to the screen and to the output file.
- (4) After all lines have been read and printed with the appended calculated area, write the average of the bases, average of the heights and average of the areas as well as the number of triangles to the screen and to the output file.

Verify by inspection that the output file contents match the input file contents.

Print a copy of your source code file, **b06.cpp**, and a copy of **b06result.txt** file and submit them with this sheet.

Name _____ **Instructor** _____ **Seat** _____ **Hour** _____