Read all instructions before beginning your work.

COMP1200-C - Assign 04
Due 11:59 pm – Thursday – February 19, 2015
Submit `assign04a.c, assign04b.c, assign04c.c` **via Canvas**

NOTE:
Your submitted file(s) MUST be spelled and cased as instructed.
[-5 points for not doing so.]

Before you start writing your program:

Read these instructions including the development plan. A development plan is a process that guides you through solving a problem and creating an algorithm. Save a copy of your **`assign03.c`** as **`assign04a.c.`** The assignment number should reflect a, b, or c also. Modify the problem description as needed to reflect assign04 requirements. Remove the statements that do not apply to the assign04 requirements.

New commands:
User input
`do..while`
`while`
`for`
data validation loop
counting loop

***Program*: assign04a.c**

The only part of `assign03.c` that is changed for `assign04a.c` is the input. Add a `do..while` loop around the `printf/scanf` used for user input. Your program should re-prompt the user when an angle value outside the range in entered.

***Program*: assign04b.c**

Save a copy of your **`assign04a.c`** as **`assign04b.c.`** Change the `do..while` loop to a `while` loop to re-prompt the user when an angle value outside the range in entered.

***Program*: assign04c.c**

Prompt the user for the number of angles to be entered. Use a `for` loop around the data validation loop. Add a comment for this new loop. You may use either a `do..while` or `while` loop to re-prompt the user when an angle value outside the range in entered. Save a copy of your **`assign04a.c`** or **`assign04b.c`** as **`assign04c.c.`** Add a comment above the new prompt and loop.

Instructions:

- ☐ See Standards for Documentation of C Programs on the Resources page on Canvas.
- ☐ Insert comments at the top and throughout each file.
  - Include the follow comments at the beginning of this (and ALL) files.
    - `//` submitter's name, **GROUP #**
    - `//` other group members' names
    - `//` assignment number
    - `//` date you completed the assignment
    - `//` **statement(s) about collaboration**
    - `//` a short narrative about what the file does
  - Use the algorithm given as comments throughout your program.
- ☐ Use descriptive variable names.
- ☐ Use Sample Input/Output as a guide.
- ☐ Use **Generate CSD** to ensure correct indenting.
- ☐ Represent ALL given values as constants.
- ☐ Format the angle with 1 decimal place.
- ☐ Format the building height with 2 decimal places.
- ☐ Label output using the `printf()` function in sentence form.

Grade of ZERO for files with submitter name not part of Canvas group
Type "none" if submitting alone.
Zero points for comments if no collaboration statement

-5 points for absence of any of these required comments at the top at the top of each file.

If you do not submit individually,
there will be a 5 POINTS PENALTY for not joining a group.
Groups can be 2-4 students.
DO NOT join a group unless you have worked with the other members. If you do, you will be removed from the group and given the grade of zero.

Sample Output:

assign04a.c and assign04b.c

```
Enter an angle in degrees (min=27.0, max=33.0): 23
Enter an angle in degrees (min=27.0, max=33.0): 37
Enter an angle in degrees (min=27.0, max=33.0): 31
Using 31.0 degrees, the building height is 72.10 meters.
```

assign04c.c

```
Enter the number of angles to be entered: 3
Enter an angle in degrees (min=27.0, max=33.0): 27
Using 27.0 degrees, the building height is 61.14 meters.

Enter an angle in degrees (min=27.0, max=33.0): 23
Enter an angle in degrees (min=27.0, max=33.0): 37
Enter an angle in degrees (min=27.0, max=33.0): 30
Using 30.0 degrees, the building height is 69.28 meters.

Enter an angle in degrees (min=27.0, max=33.0): 29.8
Using 29.8 degrees, the building height is 68.72 meters.
```

Submit via Canvas:

`assign04a.c`	C program file
`assign04b.c`	C program file
`assign04c.c`	C program file