OOP Assignment # 3 (50 Marks)

General Instructions:

- Write clean, proper indentations and easy to understand code.
- Use proper dynamic memory management—allocate and **free memory** as required.
- Ensure your code compiles without errors and runs correctly.
- Submit your handwritten assignment by the due date.
- Also submit your CPP file on gcr.

Due Date: 5/5/2025.

Task:

1) In architectural drawings, the distances are measured in feet and inches according to the English system of measurement. There are 12 inches in a foot. The length of a living room, for example, might be given as 15'–8", meaning 15 feet plus 8 inches. The hyphen is not a negative sign; it merely separates the feet from the inches. Figure 1 shows typical length measurements in the English system. Suppose you want to create a drawing or architectural program that uses the English system, it will be convenient to store distances as two numbers, representing feet and inches. Develop a complete class with appropriate constructor and destructor as well as setter and getter functions to model and program the Distance representation in the English System. Also, include two functions, getDistance to get input from the user and showDistance to display the distance in the prescribed format. We need you to keep track of how many instances of the class are created in main or any other function. The class should define appropriate copy constructor, overloaded addition (+), less than (<), addition assignment (+=) operator, increment (++)/Decrement (--), Stream insertion (<<) and stream extraction (>>).
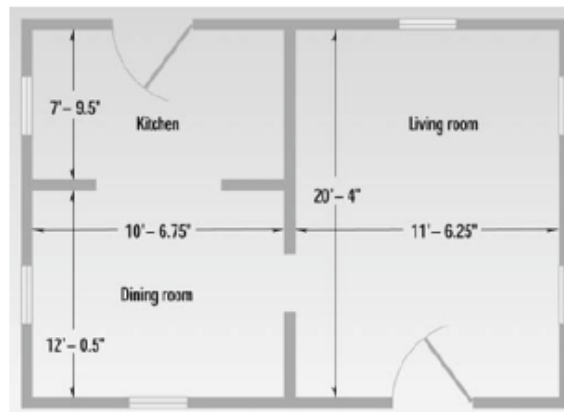

Figure: English System of Measurement