CHEN.3170 Applied Engineering Problem Solving

A Short Quiz on

Finding the Real Roots of a Nonlinear Equation

Use the **Bisection Method** to find a root of

$$f(x) = x^2 - e^{-x} = 0$$

within the range of 0 and 2. This should be a formal development that illustrates your understanding of the **Bisection Method** -- as applied to a specific problem. You should continue the basic algorithm until the value of x is known to within $\Delta x = 0.2$ (that is, $b - a \leq 0.2$, where a and b are the current lower and upper bounds on x, respectively). **Note that specific calculations, not a generic program, are required here.**

Note that my interest here is in evaluating your understanding of the solution methodology, not the specific answer to this root finding problem. Thus, an answer without a clear demonstration of the proper iteration process is not worth much! Be systematic in your work...