Characteristics and Objectives.

1. Look at Poincaré-Friedrichs, Riesz, Lax-Milgram
2. Apply theory to a problem
3. Show existence and uniqueness of FEM solutions

Todo.

1. Read sections 2.6.1 and 2.6.2 in the FEniCS book.
2. What is a b.l.f? Given an example of a b.l.f.
3. What is a bilinear form? Give an example.
4. What is continuity?
5. What is coercivity?
6. Suppose \( V = \mathbb{R}^n \) and \( u, v \in V \). Let \( A \) be an \( n \times n \) matrix and define
   \[ a(u, v) = \langle Au, v \rangle. \]
   Is \( a(\cdot, \cdot) \) a linear form? Is it coercive and continuous?
   
   Suppose that
   \[ a(u, v) = \langle u_x, v_x \rangle. \]
   Is \( a(\cdot, \cdot) \) a linear form? Is it coercive and continuous?