A brake is a mechanical device which inhibits motion. A **drum brake** is a brake that uses friction caused by a set of shoes or pads that press against a rotating drum-shaped part called a brake drum. The brake drum is a critical component that experiences high temperatures and develop thermal stresses during application of brakes. In addition, the application of shoe pressure gives rise to mechanical loads. So the analysis takes into account both the thermal stresses and mechanical stresses together. Brakes in cars and trucks are safety parts. Requirements not only in performance but also in comfort, serviceability and working lifetime are high and rising. I.e. the brake pad with the friction material, the counter body and caliper, can be modeled. When the brake is applied repeatedly the brake pad undergoes critical stresses to determine the critical stresses the structural analysis is carried out. The cad model is generated in solid works premium 2014. And static analysis is done in solid works simulation.