Classification Schemes for Identifying Structural Features:

1. Classification based on **GEOMETRY**:
   
   a. Planar (or subplanar)  
   e.g. joints, faults, veins, foliations
   
   b. Linear  
   e.g. lineations
   
   c. Curviplanar  
   e.g. folds

2. Classification based on **DRIVING MECHANISM**:
   
   a. Tectonic  
   Driven by the global plate tectonic system and its interactions with Earth’s interior (e.g. plate boundary faults)
   
   b. Primary  
   Formed in response to the formation process of the rock itself (e.g. cooling cracks in lava flows)
   
   c. Gravity-driven  
   Formed by slip down an inclined surface, slumping, or any other motions ultimately caused by gravity (e.g. collapse of mountain ranges over time)
   
   d. Density-driven  
   Density differences in the crust produce a buoyancy effect that drives motions (less dense material moves upwards), deforming the adjacent rocks (e.g. salt diapirism)
   
   e. Fluid pressure-driven  
   Any fluid or fluidized material can be injected into rocks under a pressure gradient, causing deformation (e.g. igneous dikes and sills)

3. Classification based on **TIMING OF FORMATION**:
   
   a. Synformational  
   Formed at the same time as the material that ultimately forms the rock
   
   b. Penecontemporaneous  
   Formed before full lithification but after deposition
   
   c. Postformational  
   Formed later, unrelated to any phenomena present in the environment in which the rock formed
4. Classification based on **FORMATION PROCESS**:

   a. Fracturing  
      Involving crack development in the rock
   b. Frictional sliding  
      Related to slip of one part of a rock body past another part, resisted by friction
   c. Plasticity  
      Internal flow of crystals without loss of cohesion
   d. Diffusion  
      Solid-state transport of material, perhaps assisted by fluids
   e. Combination  
      Any combination of the above

5. Classification based on **MATERIAL BEHAVIOR (RHEOLOGY)**:

   a. Brittle  
      Loss of cohesion across a discrete surface (fracturing). Occurs at relatively low temperature and pressure or at a high intensity of applied forces
   b. Ductile  
      Deformation without loss of cohesion across a discrete surface. Occurs at relatively high temperature and pressure (but less than the melting point) or at a low intensity of forces applied very slowly (e.g. flow, folding, alignment of minerals to form foliations and lineations)
   c. Brittle-Ductile  
      Both processes are at work

6. Classification based on **DISTRIBUTION OF DEFORMATION**:

   a. Continuous  
      Occurs throughout the rock body at all scales (i.e., a continuum)
   b. Penetrative  
      Occurs throughout the rock body at the scale of observation (but shows gaps between structures when observed up close)
   c. Localized  
      Structure is continuous or penetrative only within a definable region
   d. Discrete  
      Structure occurs as an isolated feature

7. Classification based on **TYPE OF STRAIN**:

   a. Contractional  
      Structure accommodates shortening of a region
   b. Extensional  
      Structure accommodates stretching of a region
   c. Shearing  
      Lateral motions, possibly without local shortening or stretching