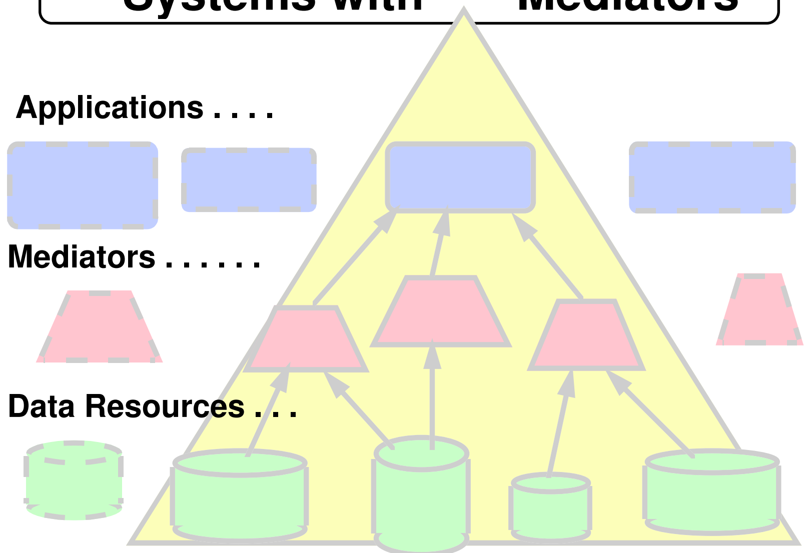Systems with Mediators