**Sample Project Chapter 4 - Initial Mapping of the EE-R Model to Relational Tables for The Art Gallery**

* Step 4.2 - Map the EE-R model developed at the end of Chapter 3 to relational model, using the guidelines presented in Section 4.8.

In the EE-R diagram shown in Figure S.3.2, we have added two hierarchies and a union to the E-R diagram shown in Figure S.3.1. Using the guidelines of Section 4.8, we examine each of these to decide how to represent them in a relational schema.

For the Person hierarchy, we decide not to create a separate table, but to keep the existing relational tables, Artist, PotentialCustomer, Collector, Buyer, and Salesperson as we had for the relational schema for the E-R model. We add a unique identifier, pId to each of these tables as the primary key, and make corresponding changes for the foreign keys of tables Artwork, ShownIn, Collector, Show, and Sale. For the Artwork hierarchy, we choose to keep a single table for all artwork, adding the attribute location that we created for unsold works to the Artwork table. For the Owner union, we create a new Owner table in which the primary key is ownerId, which corresponds to the primary key of both Collector and Artist, the two types of owners, along with an ownerType attribute identifying which type the owner is.

The EE-R to relational mapping therefore gives us the following schema:

**Artist**(pId, firstName, lastName, street, city, state, zip, interviewDate, interviewerName, areaCode, telephoneNumber, salesLastYear, salesYearToDate, socialSecurityNumber, usualMedium, usualStyle, usualType)

**PotentialCustomer**(pId, firstName, lastName, street, city, state, zip, areaCode, telephoneNumber, dateFilledIn, *preferredArtistpId*, preferredMedium, preferredStyle, preferredType)

**Artwork**(*artistpId*, workTitle, askingPrice, dateListed, dateReturned, dateShown, status, workMedium, workSize, workStyle, workType, workYearCompleted, location, *ownerpId*)

**ShownIn**(*artistpId, workTitle, showTitle*)

**Collector**(pId, SocialSecurityNumber, firstName, lastName, street, city, state, zip, interviewDate, interviewerName, areaCode, telephonenumber, salesLastYear, salesYearToDate, *collectionArtistpId*, collectionMedium, collectionStyle, collectionType, SalesLastYear, SalesYearToDate)

**Show**(showTitle, *featuredArtistpId,* showClosingDate, showTheme, showOpeningDate)

**Sale**(InvoiceNumber, *artistpId, workTitle,* amountRemittedToOwner, saleDate, salePrice, saleSalesPersonCommission, saleTax, SaleTotal, *buyerpID, salespersonpId*)

**Buyer**(pId, firstName, lastName, areaCode, telephoneNumber, street, city, state, zip, purchasesLastYear, purchasesYearToDate)

**Salesperson**(pId, socialSecurityNumber, firstName, lastName, street, city, state, zip)

**Owner**(ownerId, ownerType)