**44-560 Advanced Topics in Database Systems**

# Entities and Attributes

Create an ER diagram representing the **Student** entity and its attributes using Microsoft Visio.

1. Student attributes are:
   1. idNumber
   2. firstName
   3. lastName
   4. gpa
   5. major.
2. The idNumber is a unique identifier and serves as the primary key.
3. Open Microsoft Visio. It should show you recent diagrams to open or you can create a new one. Explore the various templates available. We want to make a new diagram.
4. Select Categories / Software and Database / Crow’s Foot Database Notation.
5. US Units may be highlighted – you can use either – and click Create.
6. Select the **Entity** icon from the **Shapes** window on the left.
7. Drag and drop it on the drawing window.
8. You can enlarge the drawing window if you wish – choose **View** from the menu bar and then select **Zoom**.
9. Double-click the default “Entity Name” and change it to **Student**.
10. Which attribute is designated as the Primary Key?
11. Change the default name of the primary key from “attribute name” to idNumber.
12. Add more attributes as needed by dragging and dropping more attributes from the shapes window on the left – we need 5 altogether.
13. Right-clicking on an attribute allows you to specify additional information such as primary key, foreign key, and required.
14. Edit the attributes as needed to complete the Student entity.
15. Right-click the Student entity (the whole entity - not a single attribute) and click Show Attribute Types to allow the specification of data types.
16. What other shapes are available in the shapes window on the left?
17. Click the Design tab to explore the themes, theme variants, backgrounds, borders & titles, and auto-layout options available.
18. Click the Home tab and find the align and position options. These will be helpful when you have more than one entity on your diagrams.

