Objectives:

1. Describe a Data Model in Power Point
   a. Use bullets
   b. Show one bullet at a time
   c. Use different sorts of transitions between slides
   d. Use sound for certain slides
   e. Try out different templates/ themes for our slideshow
   f. Hide certain slides then unhide them again
   g. Start slide show from beginning and from current slide
2. Draw the Data Model in Power Point
3. Animate the Data Model elements in Power Point

Introduction

Power Point is an MS Office tool which is intended to present a topic to audience through a slide show. It has features which enable you to impress the targeted audience by animating objects on the slides, changing transitions from one slide to another and issuing sound as you enter certain slides, among other features.

In this assignment, you will:

- Create a new slideshow in Power Point.
- Describe a Data Model in your slide show using text arranged in bullets.
- Draw an Entity Relationship Diagram (ERD) for your model
- Derive a Conceptual Schema from the ERD and draw it
- Animate certain elements in the drawings you created in the above two points

Description of Business Requirements Hospital Data Requirements:

A hospital keeps records of its patients and their treatment by doctors. A patient is typically assigned to one Doctor, but he/ she can receive treatment from specialists other than his/ her standard doctor. Doctors give treatments to patients. According to a treatment, a Doctor prescribes drugs.
Patients can stay in wards (hospital rooms), which have a certain capacity of a number of patients. As for wards, a ward is staffed by a number of nurses.

Data Modeling Discussion

According to the business specification above, we have the following **entities**:
- Doctor
- Patient
- Treatment
- Drug
- Ward
- Nurse

After figuring out our entities, we need to specify the **attributes** for each one.
- Doctor's attributes: DocID, Name, Specialty
- Patient's attributes: PatientID, Name, gender, birthdate
- Treatment attributes: TreatmentID, Date, Time, Diagnosis
- Drug attributes: DrugID, Name, Company
- Ward attributes: WardID, Capacity
- Nurse attributes: NurseID, Name, Gender

Now we need to specify the **Primary Key (PK)** for each Entity:
- Doctor's PK is DocID
- Patient's PK is PatientID
- Treatment's PK is TreatmentID
- Drug's PK is DrugID
- Ward's PK is WardID
- Nurse's PK is NurseID

Then we need to identify the **relationships** between Entities:
- Doctor/ Patient Relationship:
    - A Doctor is responsible for many Patients.
    - A Patient is assigned to one Doctor
- Doctor/ Treatment Relationship:
    - A Doctor gives many treatments ○ A Treatment is given by one Doctor
- Patient/ Treatment Relationship ○ A Patient receives many treatments ○ A Treatment is given to one Patient
- Treatment/ Drug Relationship ○ A Treatment results in prescribing many Drugs ○ A Drug can be prescribed according to many treatments
- Patient/ Ward Relationship ○ A Patient stays in a Ward ○ A Ward can accommodate many patients
- Nurse/ Ward Relationship ○ A Ward is staffed by many Nurses ○ A Nurse Staffs only one Ward

Task 1:

Open MS Power Point and create a new Slide Show.

On slide1 write the title: Hospital Data Model. In the text below the title, write your name and the date.
Make a new slide (as a shortcut press CTRL+M). Write the title on this slide (slide2) as "Entities and their Attributes"

List the entities specified above with their attributes as bullets. Each entity should go with the big bullet, and its attributes indented to the right as sub-bullets. In power point, text is bulleted by default. To make a sub-bullet, just press the Tab key. To go back to a big bullet, click on your sub-bullet and move it to the left by dragging your mouse left.

For example, list the Doctor entity and its attributes to look as follows:

    The Doctor Entity:
- o   DocID
- o   Name
- o   Specialty

After listing your Entities and their Attributes, make an entity and its attributes appear one at a time. To do so, select the Entity and its Attributes, then click on the Animations tab on the main Ribbon, then in Animations group choose custom animation. A Custom Animation Pane will appear to the right. Click on Add Effect and choose any one of the Entrance options that you like)
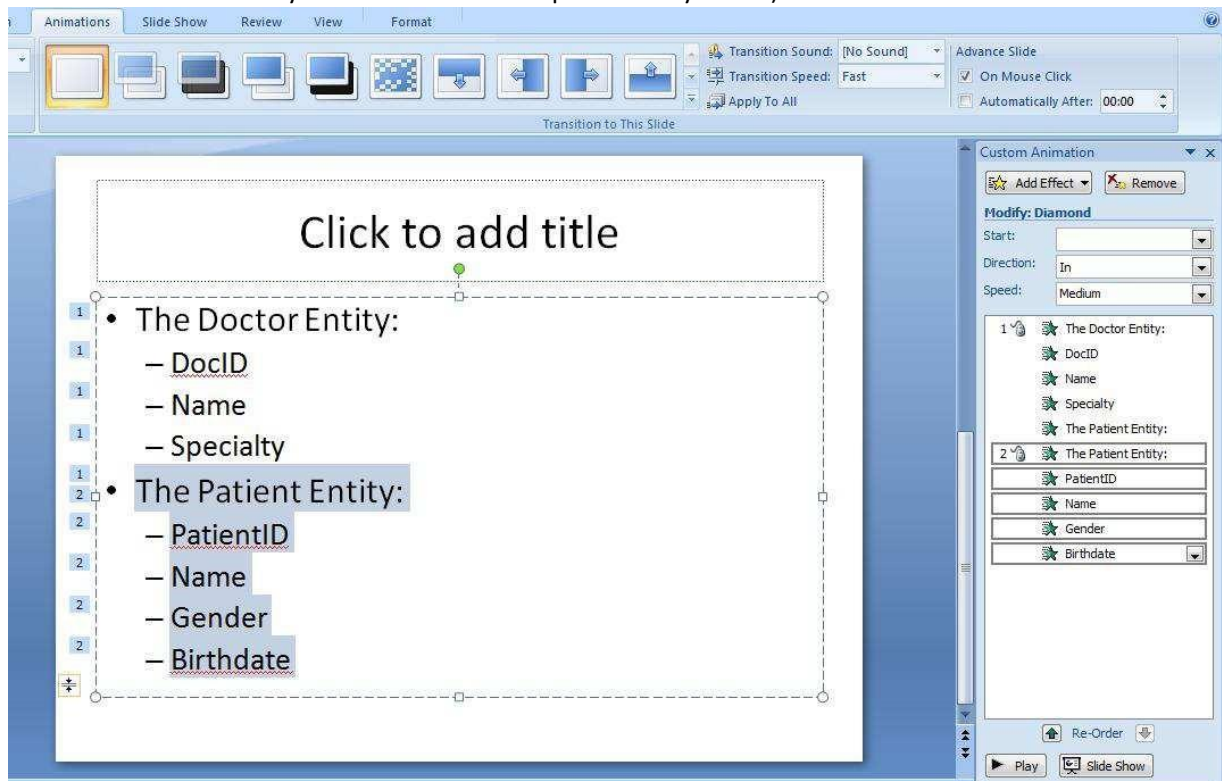

Run you slideshow, which so far consists of two slides. Show your work to the teacher/ TA.

Task 2:

On the same slide show you created above, make a new slide (CTRL+M). This will be slide3. On this slide, delete the default text boxes and draw the Entity Relationship Diagram, making use of the Data Modeling Discussion section of this assignment. An ERD is drawn according to the following specifications:

▸ **Rectangles for Entities**
▸ **Bubbles for Attributes**
  ◦ Primary Key Attribute is underlined
▸ **Diamond for Relationships**
▸ **Relationship Cardinality:**
  ◦ 1 to 1 : represented by a straight line
  ◦ 1 to n : represented by a chicken foot from one side
  ◦ m to n: represented by chicken feet from both sides
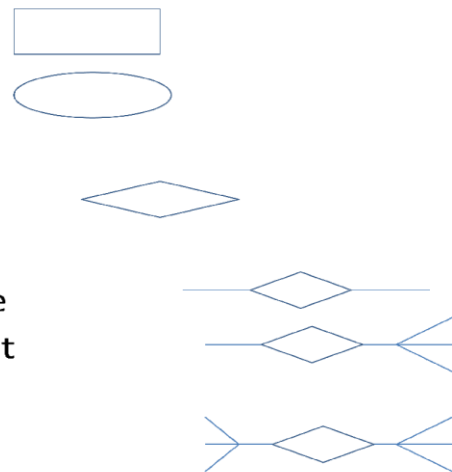
To draw in power point, choose the Home tab, then Drawing group, as shown in this screen:
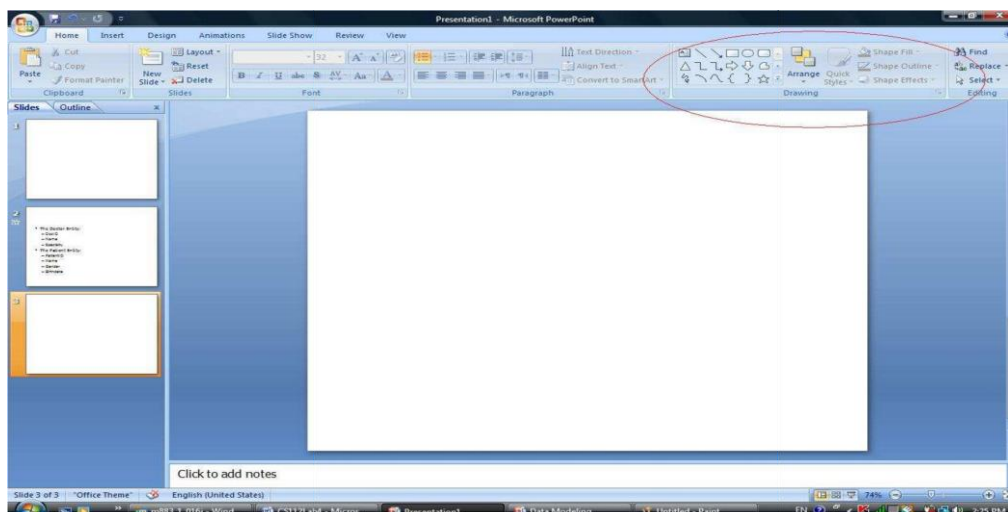
After finishing the ERD, run your slideshow, which now consists of 3 slides. Show your work to the teacher/ TA.

Task 3:

From the ERD that you created, derive the Conceptual Schema. To do so, follow these guidelines:

Each entity is mapped to a table which has a name and a list of attributes, one of which is the primary key. Usually, we list PK first.

Diamonds are removed

An **m to n** relationship is mapped to a new relation (table). The attributes of this new relation are the PKs of the contributing Entities (now becoming relations). We may also need to give the new relation additional attributes. For example, we'll need a Date attribute for Customer Order. A **1 to n** relationship causes the Primary Key from the 1 side to be a **Foreign Key** in the n side.

You can draw the conceptual schema by inserting a table in power point for each entity. To insert a table in power point, go to insert tab, tables group and choose one column and two rows for your table, as shown in the following screen.
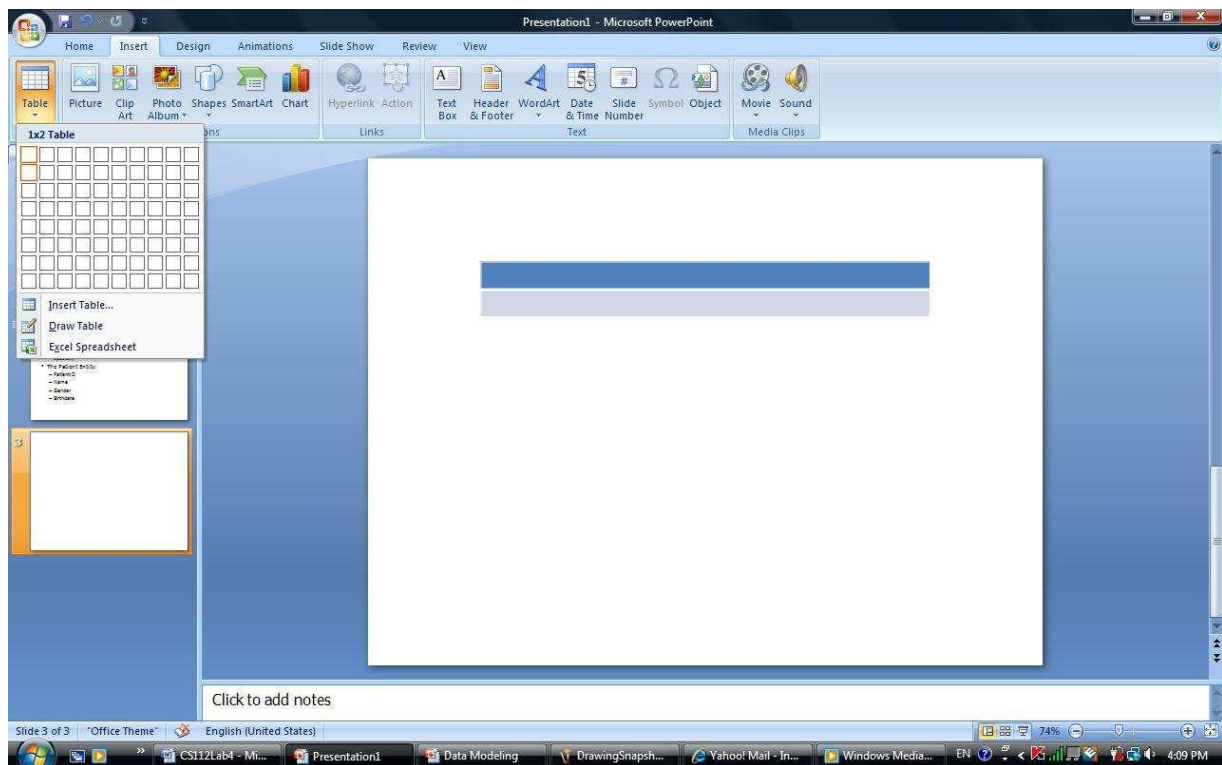
The table that you insert will initially be too wide. You need to resize it to an appropriate size. You also need to choose the appropriate style for this table. After you insert the table, the Design tab is automatically selected for you to choose a table style. Choose table style 2 Accent 5 as in the following screen:
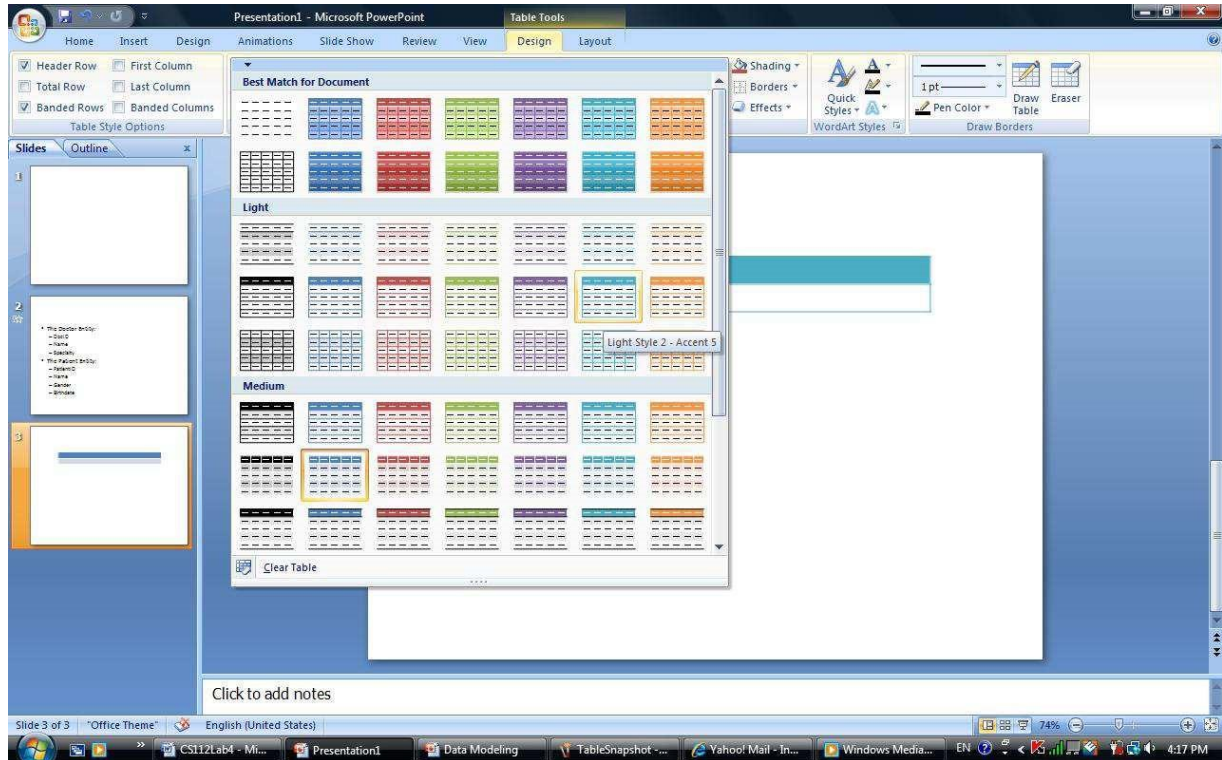
In the blue header of the table write the entity name, and in the white part of the table list the attributes. Don't forget to give focus to the PK attribute by making it Bold and underlined. An example of how the entity looks is:

Publisher

PublisherID
Name
Address
Country
Phone Number

Draw the relationships between the entities using the same drawing tools you used in Task2. Run your slideshow, which now consists of 4 slides. Show your work to the teacher/ TA.

Task4:

In this task, you will apply animation to the drawings you constructed in tasks 2 and 3.
In slide3, where you have the ERD, add a focusing effect to the relationships which you represented by diamonds. To do so, make a multiple selection on all the diamonds and go to the Animations tab/ Animations group/ Custom Animation. The Custom Animation pane will appear on the right. Select Add Effect/Emphasis/Change Fill Color as shown below:
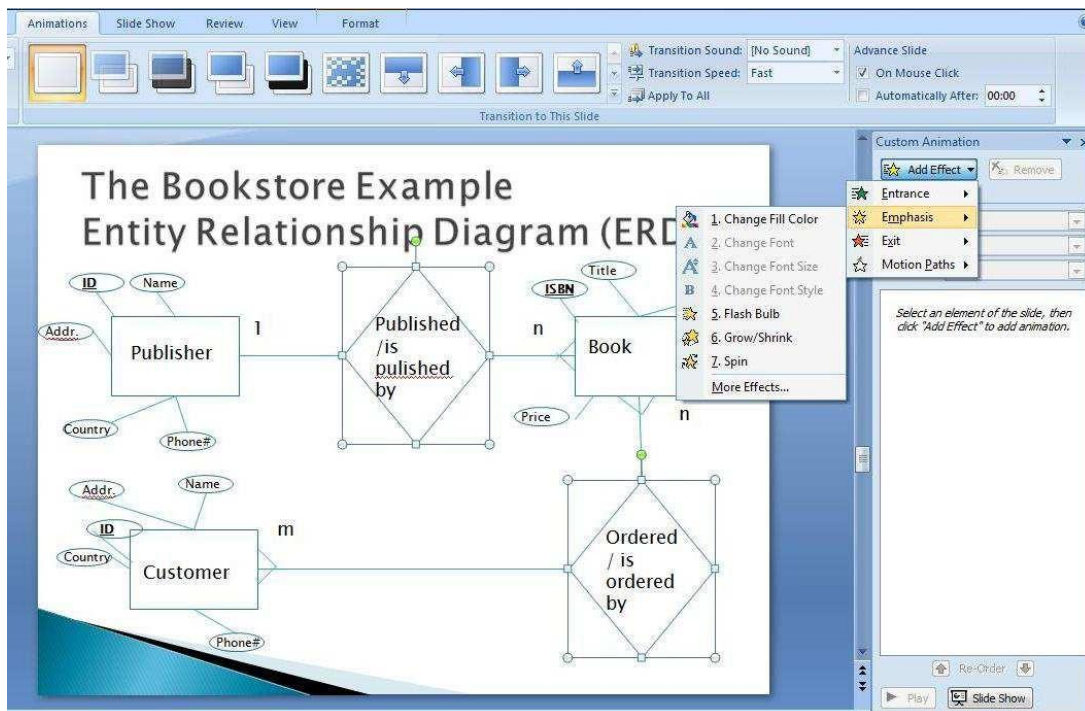
After that, go to slide4 to make animation effects on it. Make a multiple selection on all the entities in the Conceptual Schema, then click on Add Effect in the Custom Animation pane, choose Entrance and Diamond as shown below:
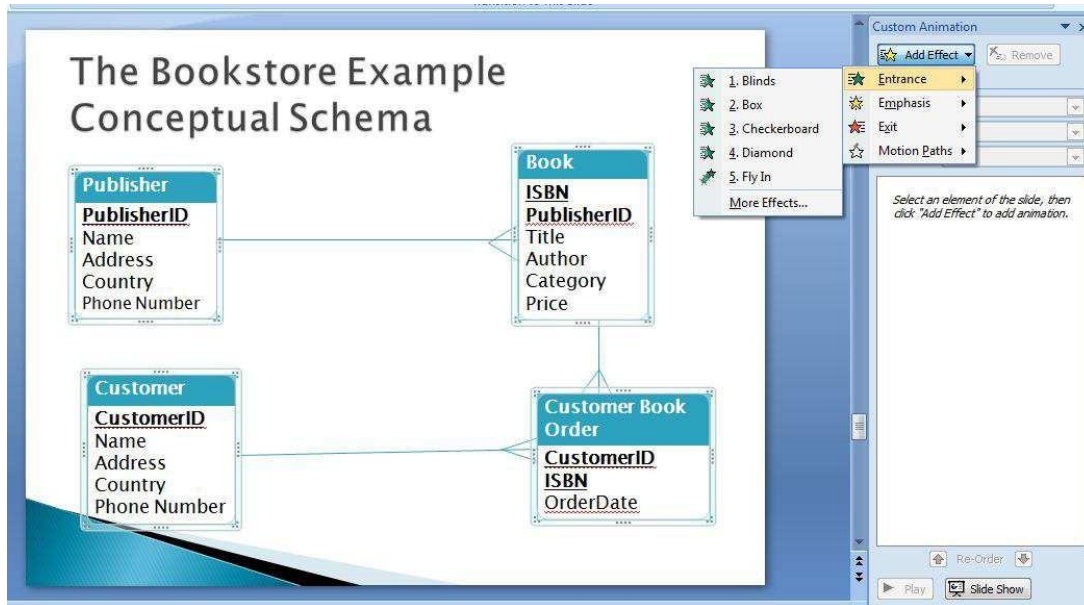
Then do a multiple selection on all the relationship lines and give them the same animation effect that you chose above. Run your slide show and show your work to the teacher/TA.

Task 5:

Now it's time to apply Themes and choose transition styles for your slides. It's also time to customize navigation between slides.
Go to slide 2 and put two custom action buttons. Label one of the "View ERD" and label the other "View Schema". Specify the action of the first one to go to the ERD slide. Specify the action of the other one to go to the slide which has the conceptual schema.

On the Animations tab/ Transition to This Slide group, choose the transition that you prefer for each of your slides. Choose a transition sound only for the last slide.

After that, choose a theme for your whole slide show. Themes are found on the Design tab in the Themes group.
Then hide slide 3 and run the slide show. Then unhide it and run it again. The Hide option is present in the Slide Show tab/ Set Up group.
Run the final version of your slide show and show it to the teacher/ TA.