Objectives:

• Object Mode
• Object Transformation
• Object Grouping
• Outliner Windows
• Do the exercise
Object Mode (1)

• To transform an object:
  ▪ In 3D View, change to Object Mode
Object Mode (2)
Object Mode (3): Select

- **Right Click**: Select an object
- **Shift + Right Click**: Add/deselect a particular object
- **A**: Select/deselect all objects
- **B**: Drag an area to select the objects inside
Object Mode (4): Duplicate

- **Shift + D**: Copy a selected object and ready to paste it
Transformation (1)

• **G** : Grab and move the selected object
• **S** : Scale the selected object
• **R** : Rotate the selected object
Transformation (2): Axis constraints

• Constraining transformation to a specific axis after pressing G, R or S:
  - X : Constrain transformation to X axis
  - Y : Constrain transformation to Y axis
  - Z : Constrain transformation to Z axis
Transformation (3): Precision

- **Ctrl** (Snap)
  - Snap the transformation on 1 blender unit (or 1/10 blender unit depending of the zooming view)

- **Shift** (Precise)
  - Allow more finer transformation control but not by precise values
Transformation (4): Cancellation

- **Alt+G**
  - Clear the location of the selected object

- **Alt+S**
  - Clear the scale of the selected object

- **Alt+R**
  - Clear the rotation of the selected object
Transformation (5): Properties (N)

- Transform Properties (N)
  - Show object transformation information
Object Grouping (1)

Group Operations
- Add to group
- Add new group

Group Naming

Group Selecting
Object Grouping (2)

- **Ctrl+P**
  - Select two or more objects. The last selected object will be the parent.
  - Make Parent-children relationships to objects

- **Alt+P**
  - Remove Parent-children relationships from objects

- **Ctrl+G**
  - Create collections of objects.
Exercise 1

- Simple 3D modeling
- Create a snowman using components
  - UVSphere (body, head)
  - Cylinder (eyes)
  - Cone (nose)
Tips for Exercise 1

• Try to use the Three Different Views (Num Pad 1, 3 or 7)
• Move/Rotate object along the x (y, z) axis by pressing X (Y, Z)
• Press Ctrl button for precise mouse operations
Exercise 2

- **Object Grouping**
- **Group the eyes, nose and head into parent-children relations**
  - Head for parent
  - Nose, eyes for children
  - Rotate the head, the nose/eyes will follow
Tips for Exercise 2

• The last object you selected (Shift + Right Click) is the parent
• Use the scene window to see the relations of objects
Exercise 3

• Dominoes
Remember!

- **G** - grab and move objects
- **R** - rotate objects
- **S** - scale objects
- **N** - shows transform properties
- **Ctrl+P** - creates parent-children relationships
- **Ctrl+G** - Make object collection
Download:

http://www.comp.polyu.edu.hk/~csgeorge/comp4422/lab/09
Try things out...