Discussion Week 7
Event-Driven Programming

- Program idly waits for something (an event) to happen.
- Once an event is triggered (e.g. a mouse click or a key is typed), a method is called to handle that event.
  - How do you know which method? That’s what listeners are for!
  - Specific types of listeners are added to GUI components to handle specific types of events.
- When the method is finished executing, the program waits again.
- Applications: Web apps, GUIs, Microsoft Word, Turn-based games, etc.
Before you write your code...

- You may work in pairs.
- You may use your implementation of \texttt{ConnectFourBoard}, but it is STRONGLY RECOMMENDED that you use the provided one.
- Know what it’s supposed to do (play the game a couple times).
- Understand the code structure.
  - Answer the 7 questions in part 2! These must be put in a comment in your class header!
Small change to ConnectFourBoard

- public char getContents(int row, int column)
- Returns the char stored at (row, column) in your ConnectFourBoard.
Classes

- **ConnectFour** extends JFrame
  - Overall canvas to add everything to.
- **BoardCell** extends JPanel
  - A single square/cell.
- **PlayListener** implements MouseListener
  - The class that handles what happens when a single square is clicked.
- **BoardCell** is an inner class of ConnectFour. **PlayListener** is an inner class of BoardCell.
ConnectFour extends JFrame

- **Class variables**
  - ConnectFourBoard theBoard – holds all the board data
  - JLabel status
  - char turn

- **Methods**
  - **Constructor**
    - Initialize the board, buttons, etc. and add them to the JFrame. ( Might want a helper method!)
  - **private void makeMove( int col )**
    - Add the checker to the board, check for wins, switch turns, etc.
    - Very similar to hostGame()
BoardCell extends JPanel

- **Class variables**
  - int row
  - int col

- **Methods**
  - **Constructor**
    - Initialize class vars and listener.
  - public Dimension getPreferredSize()
  - protected void paintComponent(Graphics g)
    - Paints the BoardCell
PlayListener implements MouseListener

- This is the class that handles what happens when you click on a BoardCell!
- public void mouseClicked( MouseEvent e ) {
  makeMove( column );
}
Various Tips

- You might want to implement a helper method to switch turns as well.
- The board will only repaint after you update the status (or some other component).
- Take out your print statements before your turn in your code!