

# CSSE 220 Day 20

File I/O, Exceptions

Check out *FilesAndExceptions* from SVN

Questions?

# Review of Anonymous Classes

- ▶ Look at GameOfLifeWithIO
  - GameOfLife constructor has 2 listeners which are *local inner* classes
  - ButtonPanel constructor has 3 listeners which are *local anonymous* classes
- ▶ Feel free to use as examples for your project

# File I/O: Key Pieces

- ▶ Input: **FileReader** and **Scanner**
- ▶ Output: **PrintWriter** and **println**
- ▶ Be kind to your OS: **close()** all files
- ▶ Letting users choose: **JFileChooser** and **File**
- ▶ Expect the unexpected: **Exception** handling
- ▶ Refer to examples when you need to...

# Exceptions

- ▶ Used to signal that something went wrong:
  - `throw new EOFException("Uneven number of ints");`
- ▶ Can be **caught** by **exception handler**
  - Recovers from error
  - Or exits gracefully

# A Checkered Past

- ▶ Java has two sorts of exceptions
- ▶ **Checked exceptions**: compiler checks that calling code isn't ignoring the problem
  - Used for **expected** problems
- ▶ **Unchecked exceptions**: compiler lets us ignore these if we want
  - Used for **fatal** or **avoidable** problems
  - Are subclasses of RuntimeException or Error

# A Tale of Two Choices

- ▶ Dealing with checked exceptions
  - Can **propagate** the exception
    - Just declare that our method will pass any exceptions along
    - **public void loadGameState() throws IOException**
    - Used when our code isn't able to rectify the problem
  - Can **handle** the exception
    - Used when our code can rectify the problem

# Handling Exceptions

- ▶ Use try-catch statement:

- ```
try {  
    // potentially "exceptional" code  
} catch (ExceptionType var) {  
    // handle exception  
}
```

Can repeat this part for as many different exception types as you need.

- ▶ Related, try-finally for clean up:

- ```
try {  
    // code that requires "clean up"  
} finally {  
    // runs even if exception occurred  
}
```



# Plan, then do

- ▶ Show me what you have completed:
  - CRC cards
  - UML – as complete as you can – will help coding later.
  - User stories for cycle 1
- ▶ Ask questions as needed!
- ▶ Work on the rest, due tomorrow.
  - There's a quick partner eval; see HW20
  - If you are done, you have my blessing to start coding cycle 1
  - Use any reasonable combination of:
    - group meetings and/or
    - dividing up the work