CISC 3120
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Midterm Review Sheet

1. **The Java Environment**
   1.1. JDK, API, JRE, JVM
   1.2. Compilation vs Interpretation
   1.3. Byte-code
   1.4. Platform-independance
   1.5. Applets vs applications

2. **Other Java**
   2.1. Classes - class definition
   2.2. instance variables and methods
   2.3. inheritance (extends)
   2.4. polymorphism
   2.5. Interfaces and the implements keyword
   2.6. final, static
   2.7. overloading and overriding

3. **Fundamentals of Interface Design & Human Computer Interaction**
   3.1. Affordances
   3.2. The Four General Principles of Interface Design
      - C/C/M/W
   3.3. General Interface Problems to Avoid
   3.4. Embedding
      - Input/Output/Accessibility(Usability)/Aesthetics
   3.5. Normans Seven Stages of Action (Interaction)
      - G ISE PIE
      - Gulf of execution
      - Gulf of evaluation
   3.6. Object-Action vs. Action Object
   3.7. Three Principles of Good Design
      - D8Errs
      - Diversity of ... Users & Interaction Styles
   3.8. What are the Eight Rules?
      - Consistently Empower Feedback Closures
      - Error Reversal Controls Memory

4. **Java GUI Programming**
   4.1. Applets
      - Subclassing
         - The extends keyword
         - Subclass/superclass
      - Including within Web pages
      - Running using browser or appletviewer
      - Key applet functions and the paint method
         - What they’re for and when they’re called
      - Using System.out and System.out in applets
      - Accessing an applet’s parameters
   4.2. Graphics
• Drawing and filling shapes
  - Ovals/Circles
  - Rectangles/Squares
  - Lines
  - Text
  - The location specified by the position coordinates

4.3. Colors
• Setting 'pen' color
• Specifying colors
• Color class constants

4.4. Events
• What they are
• Event handling and event handlers
• Registering (listening) for an event
• How it works in Java
  - The ***Listener interfaces
  - The add***Listener methods
  - The event handler methods (eg, actionPerformed)
  - The Event object parameter
  - The getSource method

4.5. Placing Components (Controls) on the Applet
• The add method
• LayoutManagers
  - FlowLayout
  - BorderLayout
  - BorderLayout class region constants (e.g. NORTH)
  - GridLayout
• Setting the LayoutManager

4.6. Controls
• Buttons
  - Handling Button events
• Scrollbars
  - Creating
  - Handling Scrollbar events
• TextFields
  - Setting and retrieving the contents
• Label
  - What it's used for
• Checkboxes
  - With and without Checkboxgroup

4.7. Panels
• Using Panels

4.8. Canvas
• What is it used for? / What problem does it solve?
• Subclassing Canvas
• Handling events in the Canvas
  - The applet passing other controls to the Canvas

4.9. Listening to the Mouse
• MouseListener and MouseMotionListener