Mr. Hanley’s Java Cookbook

Version 23.1-12/12/2024

Hmm, I wonder what interesting stuff you are going to make using the cookbook. Send me a neat tip or trick and you too can be listed as one of the helpful students who has added to our shared knowledge of the amazing java language!!!! See you around the hood!!!!

Purpose	Command	Example
Section I: Numeric Section		

Generate pseudo random numbers
TOP↑
	Random	**import java.util.Random;**
		//If using the console.....
		public class YourClassName {
		
		public static void main(String[ ] args) {
		Random r = new Random(); //creates pseudo random generator
		int x = r.nextInt(5); //Gives numbers from 0-4
		System.out.println("x = " + x);
		}
		}
		//If using a Swing Application...
		public class YourClassFrame {
		Random r = new Random(); //one time outside of all methods
		
		private void cancelBUTActionPerformed(java.awt.event.ActionEvent evt) {
		x = r.nextInt(100)+1; //assumes x is a global variable ..goes from 1-100
		}
		}

Converting a string into a floating point value (double)	Double.parseDouble
	Integer.parseInt
		String str1 = "1337"; //set up a string that has a number in it
		
		double x;
		//From String str1 To double x
		//Note: If the value of str1 is null (if there is no string), trim() will throw a
		//NullPointerException. If you don't use trim(), make sure
		//there's no trailing white space. For JDK 1.2.x or better:
		try {
		  x = Double.parseDouble(str1.trim());
		}
		catch (NumberFormatException e) {
		  System.out.println("There was a problem formatting the string, bye");
		}
		//When this command is done, x has the value 1337, if str1 contained
		//other types of characters like $>#@jkaBN, then the parseDouble command
		//would have thrown an exception
		
		int y = Integer.parseInt(temp); //also works for ints

Formatting numbers with specific requirements
 	
TOP↑
	Decimal Format	import java.text.DecimalFormat;
		
		double total =<some number you have found>
		String displayTot; //This string will hold the result of our formatting
		DecimalFormat numFormat1 = new java.text.DecimalFormat("###,##0.00");
		
		//NOTE: # will suppress leading 0's, 0 forces a number there and the decimal anchors where the decimal will go
		displayTot = numFormat1.format(total);
		
		//Scientific notation (JDK 1.2.x on up):
		double sciCalc = <some number you have found>
		DecimalFormat scienceFormat = new DecimalFormat("0.0000000000E00");
		
		String displaySci;
		displaySci = scienceFormat.format(sciCalc);

Using math constants	Math.	//no imports necessary when using Math
		double radius = 2.5;
		double circum = Math.PI*2*radius;

Using math methods	Math.	//no imports necessary when using Math
		System.out.println(Math.pow(2,5)); //prints 2 to the 5th power
		
		//Figure out the square root of a number
		double in;
		in = 5.6;
		double squareRoot = Math.sqrt(in);

Rounding off a float or a double(props Warren Brodt, Haverford High School, 1984)	An old trick taught to me by Mr. Brodt from Haverford High School	//Let's truncate the number after moving it over a certain # of spaces
		//let's say the variable to round off is called cost
		double cost = <some calculation>;
		cost = cost *100; //move the decimal over 2 places
		cost = (int) (cost + .5); //add .5 and then chop off decimal
		cost = cost /100; //move the decimal place back
		
		//This trick also works for rounding off to thousandths, etc.
		//just change the 100 to a 1000 in both places

Get the current date and time and format for printing
 	
TOP↑
	Date and DateFormat	import java.util.Date;
		import java.text.DateFormat;
		
		public static void menu() {
		    Date now = new Date();f
		    String display = DateFormat.getDateTimeInstance(DateFormat.FULL,
		                DateFormat.FULL).format(now);
		}

Section II: Console Section

Reading in data from the keyboard in a console application

Scanner

```
//NOTE: This requires JDK 1.5 (Wow, does this sound old in 2024 or WHAT?? LOL
import java.util.Scanner;

public class ConsoleDemo1 {
  public static void main(String[] args) {
    Scanner input = new Scanner(System.in);  //do this once to be able to read in data
    int x;
    double y;
    String name;
    System.out.println(“Please enter your name:)”;
    name = input.next();  //Reads in a string from the keyboard with no spaces
    System.out.println(“Please enter a whole number)”;
    x = input.nextInt();
    System.out.println(“Please enter a decimal number:)”;
    y = input.nextDouble();
  }
}
 import java.util.Scanner;
public class ConsoleDemo2 {
  //To read in a value without spaces followed by a value with spaces
  public static void main(String[] args) {
    Scanner input = new Scanner(System.in);  //do this once to be able to read in data
    int x;
    x = input.nextInt();   //read an int
    //Must skip the newline in order to read data with spaces next
    input.skip(“\n”);
    String phrase;
    phrase = input.nextLine();
  }
}
```

TOP↑

Displaying information in a table(Props to Andy Ouyang, 2016)

System.out.format or System.out.printf

```
//This is a useful command when you want to make sure that a table of numbers lines up
//Example, you are generating a table of values and the numbers vary so a tab might
//Not work if the numbers differ too much (USE A MONOSPACED FONT)
//Desired
//    Description             Quantity      Cost      Item Total
//    -----------             --------      ----      ---- -----
//    2 X4X8 Dimension              30      2.63           78.90
//    2 X6X8 Dimension            1000      4.52         4520.00
public class DemoFormat {
   public static void main(String[] args) {
      //Desired
      //   Description          Quantity    Cost    Item Total
      //   2 X4X8 Dimension          30     2.63        78.90
      //   2 X6X8 Dimension        1000     4.52     4,520.00
      String[]descriptions = {"2 X 4 X 8 Dimension","2 X 6 X 8 Dimension"};
      int quantities[] = {30,1000};
      double costs[] = {2.63,4.52};

      //Set up Headings
      //All are Strings, so the HEADINGS will use %s for ALL
      System.out.format("%-30s%8s%6s%15s%n","Description","Quantity","Cost",
            "Item Total");
      System.out.format("%-30s%8s%6s%15s%n","-----------","--------","----",
            "---- -----");

      //Loop through all the items
      double itemTotal=0;  //used to figure out totals for each item
      for (int i=0; i<descriptions.length; i++){
         itemTotal = quantities[i] * costs[i];
         //round off to nearest penny
         itemTotal *= 100;
         itemTotal = (int)(itemTotal + .5);
         itemTotal /= 100;
         System.out.format("%-30s%8d%6.2f%,15.2f%n",
               descriptions[i],quantities[i],costs[i],itemTotal);
      }

      //%-30s means
```

		//Since I need 30 at most for Description and I want this to LEFT,
		//I will use the %-30s code first (s = string)
		//%8s means
		//Since I want 8 spaces for quantity and this is a decimal number,
		//I will use %8d, no MINUS SIGN means RIGHT JUSTIFIED
		//%6.2f means
		//Since the cost is a floating point value and I want 6 digits
		//RIGHT JUSTIFIED with 2 after the decimal I use %6.2f
		//%,15.2f means
		//Since the itemTotal variable is a floating point type and I want
		//15 digits with 2 after the decimal I want to use .2
		//I want COMMAS every 3 digits so I toss a , after the %
		
		}
		}

Printing out cool Symbols(Props to Matt Keyoskey, 10)	Special alt characters	public static void dispAuthor() {
		System.out.println(" ¨°º¤ø„¸¨°º¤ø„¸¸„ø¤º°¨¸„ø¤º°¨");
		System.out.println(" ¨°º¤ø„¸ JAVA ¸„ø¤º°¨");
		System.out.println(" ¸„ø¤º°¨ ROCKS! ¨°º¤ø„¸");
		System.out.println(" ¸„ø¤º°¨¸„ø¤º°¨¨°º¤ø„¸¨°º¤ø ");
		}

Printing out variables and phrases to the console	System. out.print and System.out. println	System.out.print("this phrase will be on one line");
		System.out.print("****** these stars will on the same line as above");
		
		int myVar = 6;
		System.out.println("The variable is " + myVar);

Redirecting System.in and System.out to text files
 	
TOP↑
		import java.io.File;
		import java.io.FileInputStream;
		import java.io.FileNotFoundException;
		import java.io.FileOutputStream;
		import java.io.IOException;
		import java.io.PrintStream;
		//HERE's the folder for my ChangeForATwenty
		/build
		/nbproject

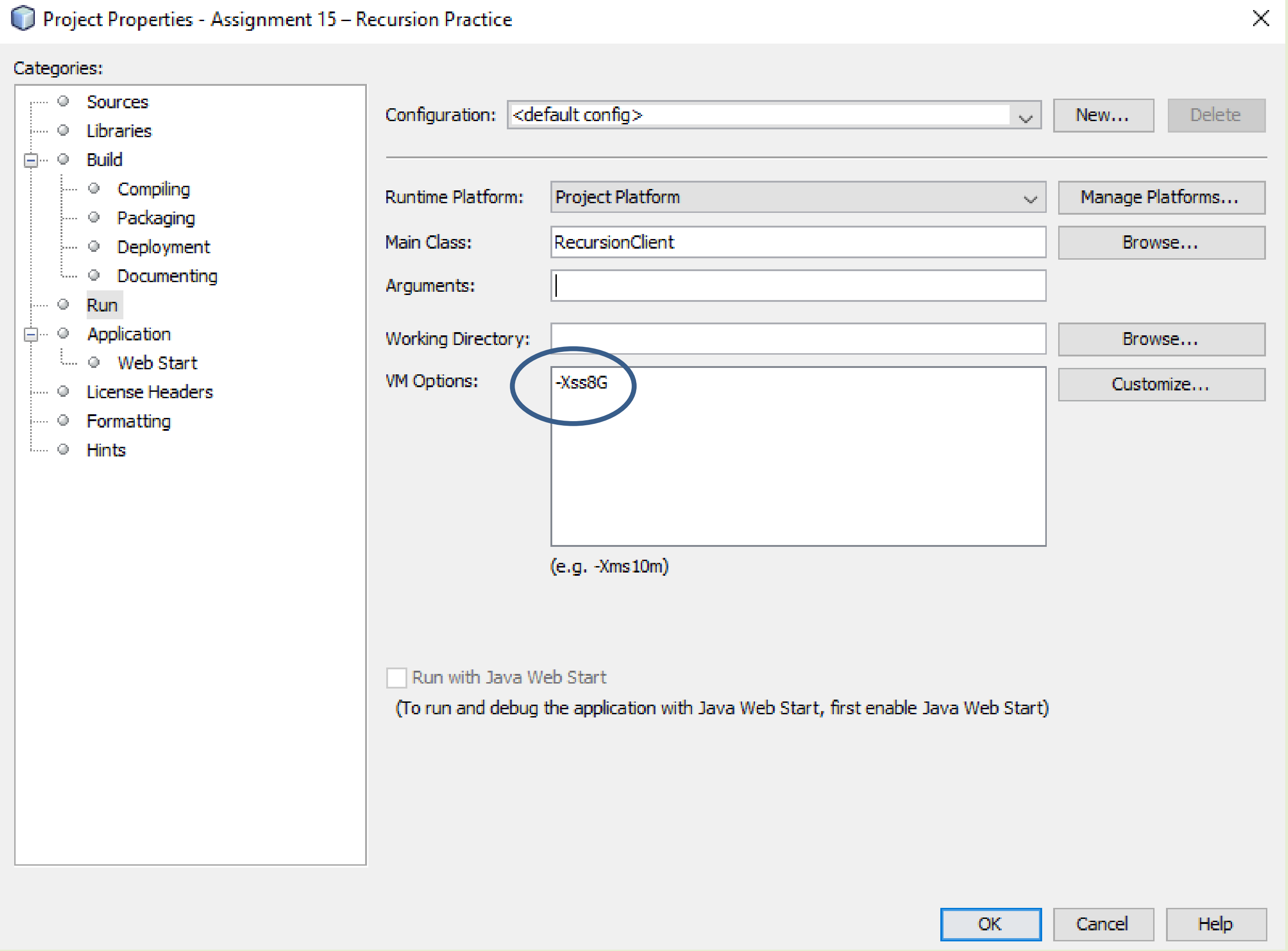
```
/src
build.xml
manifest.mf
test1.txt  //put your input file here
out1.txt  //your application will create a file here

public class ChangeForTwenty {
   public static void main(String[] args) {
         String inFileName = "in.txt", outFileName = "out.txt";
         System.out.println("Redirecting input -> " + inFileName);
         System.out.println("Redirecting output -> " + outFileName);
         //Redirect the input
         try {
            System.setIn(new FileInputStream(new File(inFileName)));
         } catch (FileNotFoundException e) {
            System.out.println("File Problem " + e);
         }
         //Redirecting console output to file (System.out.println)
         try {
            //Prepare the output file
            PrintStream fileStream = new PrintStream(new FileOutputStream(outFileName,
            false));
            System.setOut(fileStream);
         } catch (IOException e) { }
         //Read the data
         Scanner input = new Scanner(System.in);
         //loops all data in file
         while (input.hasNext()) {
            double charge = input.nextDouble();
            double change = 20 - charge;
            //etc
         }
      }
   }
```

SEPARATE FILE: in.txt, must be in the main folder of the project NOT THE src or build directories

TOP↑

Catching Errors when a Person types in a letter instead of a number	try{
	}
	Catch{
	}
		**double inVal=0;
		try {
		   inVal = keyboard.nextDouble();
		   //more logic here to decide range
		   //logic
		}catch (InputMismatchException e) {
		    System.out.println("@@@@@@@@@@@@@@@@@@@@");
		    System.out.println(" Bad Character");
		    System.out.println("@@@@@@@@@@@@@@@@@@@@");
		}
		finally {
		   keyboard.nextLine();
		}**

Catching Errors when a Person types in a letter instead of a number(going from nextInt() to nextLine()	Need same try catch but need to add a flag for when nextLine() has been activated	**boolean hadToResetScanner = false; //having trouble downstream unless I have this
		while (true) {
		     System.out.println("Please enter 1 for name, 2 for population range");
		     hadToResetScanner = false; //assume no problems
		     try {
		         choice = input.nextInt();
		         if (choice == 1 || choice == 2) {
		            break;
		         }
		     } catch (InputMismatchException ex) {
		        System.out.println("No letters, 1 or 2 only please");
		     } finally {
		       input.nextLine();
		       hadToResetScanner = true; //had a problem, needed next line
		    }
		}
		if (choice == 1) {
		   System.out.println("Please enter in the territory name searching for");
		   System.out.println("Spaces matter but case DOES NOT");
		   if (!hadToResetScanner) {
		     input.skip("\n");
		   }
		  String target = input.nextLine();
		  ArrayList<Territory> terrs = new ArrayList<Territory>();
		  ....//More code continues**

Printing out control characters to the console	System .out.print and System.out. println	**System.out.print("This will be on one line\nthis on another");** **System.out.println("\t\t\tThis will be after 3 tabs");** **System.out.println("Here's how to print out a double quote\" OK?");** **System.out.println("Here's how to print a back slash \\ OK?");**
How to set the stack size in NetBeans (Props to Chris Vinciguerra 2020) **TOP↑**	-Xss8G	Project Properties - Assignment 15 – Recursion Practice Configuration: <default config> Runtime Platform: Project Platform Main Class: RecursionClient Arguments: Working Directory: VM Options: -Xss8G (e.g. -Xms10m) □ Run with Java Web Start (To run and debug the application with Java Web Start, first enable Java Web Start) Categories: Sources Libraries Build Compiling Packaging Deployment Documenting Run Application Web Start License Headers Formatting Hints New... Delete Manage Platforms... Browse... Browse... Customize... OK Cancel Help

Printing in color in the console(Props to Dean Kuhne, 2016)
TOP↑
	Use ANSI constants and then print them just before your text, NOTE: set things back or it will stay in that particular color	public class YourClass {
		   public static final String ANSI_ALL_RESET = "\u001B[0m";
		   public static final String ANSI_FORE_BLACK = "\u001B[30m";
		   public static final String ANSI_FORE_RED = "\u001B[31m";
		   public static final String ANSI_FORE_GREEN = "\u001B[32m";
		   public static final String ANSI_FORE_YELLOW = "\u001B[33m";
		   public static final String ANSI_FORE_BLUE = "\u001B[34m";
		   public static final String ANSI_FORE_PURPLE = "\u001B[35m";
		   public static final String ANSI_FORE_CYAN = "\u001B[36m";
		   public static final String ANSI_FORE_WHITE = "\u001B[37m";
		
		   public static final String ANSI_BACK_BLACK = "\u001B[40m";
		   public static final String ANSI_BACK_RED = "\u001B[41m";
		   public static final String ANSI_BACK_GREEN = "\u001B[42m";
		   public static final String ANSI_BACK_YELLOW = "\u001B[43m";
		   public static final String ANSI_BACK_BLUE = "\u001B[44m";
		   public static final String ANSI_BACK_PURPLE = "\u001B[45m";
		   public static final String ANSI_BACK_CYAN = "\u001B[46m";
		   public static final String ANSI_BACK_WHITE = "\u001B[47m";
		
		System.out.println("\t\t" + side + ANSI_BACK_GREEN + ANSI_FORE_WHITE + " " + one + " = Employee Example " + ANSI_ALL_RESET + side);
		        System.out.println("\t\t" + side + ANSI_BACK_BLUE + ANSI_FORE_CYAN + " " + two + " = Car Example " + ANSI_ALL_RESET + side);
		        System.out.println("\t\t" + side + ANSI_BACK_WHITE + ANSI_FORE_RED + " " + thr + " = Student Example " + ANSI_ALL_RESET + side);
		        System.out.println("\t\t" + side + ANSI_BACK_YELLOW + ANSI_FORE_PURPLE + " " + fou + " = Enhanced Employee Example " + ANSI_ALL_RESET + side);
		        System.out.println("\t\t" + side + ANSI_BACK_BLUE + ANSI_FORE_YELLOW + " " + fiv + " = Enhanced Car Example " + ANSI_ALL_RESET + side);
		        System.out.println("\t\t" + side + ANSI_BACK_WHITE + ANSI_FORE_BLUE + " " + six + " = Enhanced Student Example " + ANSI_ALL_RESET + side);
		        System.out.println("\t\t" + side + " " + ANSI_FORE_RED + sev + " = Exit " + ANSI_ALL_RESET + side);
		
		//NOTE: I used a bunch of codes for Consolas to make a niftified menu, here are the ones I use, but you can google Consolas Unicode or use this link for the table…
		//Consolas Unicode http://www.fileformat.info/info/unicode/font/consolas/grid.htm

		//These only work on Consolas
		static final char ur = '\u2557'; //upper right
		static final char ul = '\u2554'; //upper left
		static final char top = '\u2550';
		static final char side = '\u2551';
		static final char sideTL = '\u2560'; //this is a t believe
		static final char sideRL = '\u2563';
		static final char bl = '\u255A'; //circle with a number inside it
		static final char br = '\u255D';
		static final char one = '\u2776';
		static final char two = '\u2777';
		static final char thr = '\u2778';
		static final char fou = '\u2779';
		static final char fiv = '\u277A';
		static final char six = '\u277B';
		static final char sev = '\u277C';
		static final char no = '\u0424';

Forcing the new version of the JDK(18) to display Consolas Special Characters		import java.io.PrintStream;
		import java.nio.charset.StandardCharsets;
		
		public ArrayPractice_Copying_Skeleton() {
		PrintStream out = new PrintStream(System.out, true, StandardCharsets.UTF_8);
		System.setOut(out);
		menu();
		}

Print a Yoshikawa Menu (props to Zach Yoshikawa 2009)

```
public static void yoshiMenu(){
	System.out.println("                    [{|}]                    ");
	System.out.println("                    [{|}]                    ");
	System.out.println("                    [{|}]                    ");
	System.out.println("                    [{|}]                    ");
	System.out.println("                    [{|}]                    ");
	System.out.println("                    [{|}]                    ");
	System.out.println("                []}}}[{|}]{{{{]                ");
	System.out.println("                    [{|}]                    ");
	System.out.println("                    [{|}]                    ");
	System.out.println("                  /\\[{|}]/\\                  ");
	System.out.println("                   (/;-;\\)                   ");
	System.out.println("                  '-)•••(-'\t\t----------------------------------------------------------------------                    ");
	System.out.println("                   (•••••)\t\tMr. Yoshikawasaki does not really welcome you to his loop practice...                    ");
	System.out.println("                   )•••(\t\tHowever you may use it if Mr. Yoshikawasaki can get a cookie xD                    ");
	System.out.println("                   (•••••)\t\t---------------------------------------------------------------------                    ");
	System.out.println("                 (\\.)•••(./)\t\t\t\tType 1 for Part 1                    ");
	System.out.println("                  \\\\(•••)//\t\t\t\tType 2 for Part 2                    ");
	System.out.println("        (\\_(\\____/.|]-[|.\\____/)_/)\t\t\tType 3 for 500 Asteriks ");
	System.out.println("          )|(^Yoshikawasaki^)|(\t\t\tType 4 for number to asteriks ");
	System.out.println("   //''''''//'''''[- ^ -]'''''\\\\''''''\\\\\t\tType 5 for odd numbers ");
	System.out.println("    \\\\.....\\)......] ||| [......(/.....//\t\tType 6 for average of numbers part 6    ");
	System.out.println("                 \\)] ||| [(/\t\t\t\tType 7 for dispAuthor() method ");
	System.out.println("                   |\\_°_/|\t\t\t\tType 8 for random sound player ");
	System.out.println("                   [|\\_/|]\t\t\t\tType 9 for probability dice roll ");
	System.out.println("                   [|[;]|]                    ");
	System.out.println("                   [|;;;|]                    ");
	System.out.println("                  ;;;;;]|]                    ");
```

TOP

```
  System.out.println("         ;;;;;¤]||-          ");
  System.out.println("        ;;;;;[¤]||--          ");
  System.out.println("        ;;;;;|[¤]||]---          ");
  System.out.println("       ;;;;;[|[¤]||]|---|         ");
  System.out.println("       ;;;;;[|[¤]||]|---|         ");
  System.out.println("        ;;;;[|[¤]|/---/         ");
  System.out.println("        ;;;[|[¤]/---/          ");
  System.out.println("         ;;[|[¤/---/          ");
  System.out.println("          ;[|[/---/           ");
  System.out.println("          [|/---/           ");
  System.out.println("          [/---/]           ");
  System.out.println("          /---/|]           ");
  System.out.println("          /---/]|];           ");
  System.out.println("         /---/¤]|];;          ");
  System.out.println("        /---/[¤]|];;;          ");
  System.out.println("        /---/|[¤]|];;;;         ");
  System.out.println("       |---|[|[¤]|];;;;;         ");
  System.out.println("       |---|[|[¤]|];;;;;         ");
  System.out.println("        ---[|[¤]|;;;;;          ");
  System.out.println("         --[|[¤];;;;;          ");
  System.out.println("          -[|[¤;;;;;           ");
  System.out.println("          [|[;;;;;           ");
  System.out.println("          [|;;;;;            ");
  System.out.println("          [;;;;;]            ");
  System.out.println("          ;;;;;|]            ");
  System.out.println("          ;;;;;]||            ");
  System.out.println("         ;;;;;¤]||-           ");
  System.out.println("        ;;;;|[¤]||]--|          ");
  System.out.println("        ;;;;|[¤]||]--|          ");
  System.out.println("         ;;[|[¤]||]-/           ");
  System.out.println("          ;[|[¤]||]/           ");
  System.out.println("          [|[¤]||]            ");
  System.out.println("          \\\\¤//           ");
  System.out.println("           \\|/            ");
  System.out.println("            V             ");
}
```

Section III: Swing Section		

Determining which button was clicked(or menu item, combo box)
TOP↑
	e.get Source()	public void actionPerformed(ActionEvent e) {
		    if(e.getSource() == radiusBUT){
		      //logic here for radius button
		     }
		    if(e.getSource() == sodaBUT){
		      //logic here for soda button
		    }
		    if(e.getSource() == fileExitMI){
		      System.exit(0); //exit the program
		    }
		}

Setting the background of your frame as an image (Props to Ryan Knapp 09)
TOP↑
	getLayered Pane().add among other commands	//Add this to the constructor of your Frame or Dialog(same name as class)
		//BEFORE initComponents
		public JavaOutletFrame() {
		   //Java Students – Start Copying Here
		try {
		        //Load the background Image
		        Image pict = ImageIO.read(new File("images/for-honor-viking.jpg"));
		        ImageIcon backIm = new ImageIcon(pict);
		        JLabel backLBL = new JLabel(backIm); //make a JLabel from background image
		        //Set the bounds of the label to be the whole window
		        backLBL.setBounds(0, 0, backIm.getIconWidth(), backIm.getIconHeight());
		        getLayeredPane().add(backLBL, new Integer(Integer.MIN_VALUE));
		        JPanel myPanel = new JPanel();
		        myPanel.setOpaque(false);
		        setContentPane(myPanel);
		     } catch (IOException ex) {
		        Logger.getLogger(EncounterDialog.class.getName()).log(Level.SEVERE, null, ex);
		     }
		  //Java Students – Stop Copying Here
		  initComponents();
		}

<table>
<tr>
<td>Changing the icon of your swing app(Props to Chris Bouchard 06)</td>
<td>setIcon Image and get Default ToolKit
This is what shows up in the task bar when you minimize your application(Windows OS) Also icon for Mac OS</td>
<td>

```
//YOU NEED TO FIND ICON IMAGE FILES OR MAKE YOUR OWN.
//HERE IS A SITE WHERE I FOUND SOME FREE DOWNLOADABLE ICONS
//NOTE:
   1. Make a new directory in the project folder called images
      //HERE's the folder for my BlackJackSwingSolution...
      /build
      /dist
      /images
      /nbproject
      /src
      /test
      build.xml
      manifest.mf

      Copy image files to your images folder(make a careful note of name)

public class YourFrame extends JFrame implements....
  //Declare this as a global variable
  //Icon for application
  Image appIcon;

   try {
      //Load the application icon Image
      appIcon = ImageIO.read(new File("images/eagles.png"));
      setIconImage(appIcon);
  } catch (IOException ex) {
      Logger.getLogger(BlackJackFrame.class.getName()).log(Level.SEVERE, null, ex);
  }
}
```

</td>
</tr>
<tr>
<td>Making sure that only certain characters are entered into a textfield(props to Jon Diaz)

TOP↑</td>
<td>Key Adapter</td>
<td>

```
public class YourFrame extends JFrame implements....
 //assuming you have a textfields called monTF, etc
 JTextField monTF = new JTextField();  //Gen by NetBeans
 JTextField tuesTF = new JTextField();
 JTextField wedTF = new JTextField();
 JTextField thurTF = new JTextField();
 JTextField friTF = new JTextField();

//YOU ADD A GLOBAL DIGIT LISTENER SOMEWHERE
```

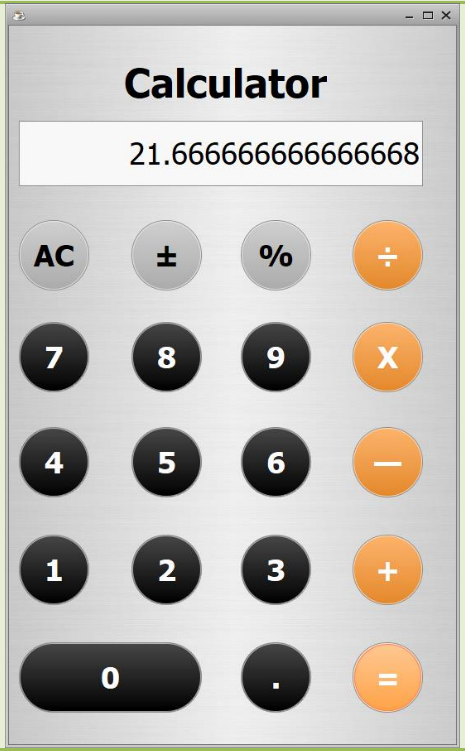
</td>
</tr>
</table>

```
//OUTSIDE OF ANY METHOD
//Create a digitKeyListener
  DigitKeyListener dg = new DigitKeyListener();

  public YourFrame() {  //This goes inside your constructor
    initComponents();
     monTF.addKeyListener(dg);  //add digit key listeners to each
    tuesTF.addKeyListener(dg);
    wedTF.addKeyListener(dg);
    thurTF.addKeyListener(dg);
    friTF.addKeyListener(dg);
  }
//Below the Frame class or in another file
import java.awt.event.*;

 class DigitKeyListener
    extends KeyAdapter {

  //consumes all values except numbers period, delete and backspace
  public void keyTyped(KeyEvent f) {
    char ch = f.getKeyChar();
   //If it's not a period, backspace, digit or delete...
    if (!(
        (ch == KeyEvent.VK_PERIOD) ||
        (Character.isDigit(ch)) || (ch == KeyEvent.VK_BACK_SPACE) ||
         (ch == KeyEvent.VK_DELETE) ||
         ch == KeyEvent.VK_MINUS) ) )
    {
      f.consume();  //prevent from appearing in the textfield
    }
  }
}
```

TOP↑

Making a field uneditable or read-only	Set Editable	`scoreFieldTF.setEditable(false);`

Setting up Buttons with a round, calculator appearance (Props to Antoni Yang, Fall 2021)	Download JTattoo-1.6.13 (See the resources section of the website)	**import javax.swing.UIManager;
		import javax.swing.UIManager.LookAndFeelInfo;
		import javax.swing.UnsupportedLookAndFeelException;
		import Calculator.PhoneCalculator;
		
		public class PhoneCalculatorApp {
		   public static void main(String[] args) throws ClassNotFoundException, InstantiationException, IllegalAccessException, UnsupportedLookAndFeelException {
		
		UIManager.setLookAndFeel("com.jtattoo.plaf.aluminium.AluminiumLookAndFeel");
		        PhoneCalculator f = new PhoneCalculator();
		        f.setBounds(100, 100, 550, 900);
		        f.setVisible(true);
		   }
		}**

	This is Anthony's Calculator, works like a cell phone calculator	 Calculator 21.666666666666668

Change the foreground or background color of a button	setBackground/setForeground	**b1.setBackground(Color.blue); //NOTE: b1 is an initialized Button reference
		b1.setForeground(Color.yellow); //NOTE: b1 is an initialized Button reference**

Change the background of a Frame	getContentPane().setBackground	**public class YourFrame extends javax.swing.JFrame {
		public HWFrame() { //add this stuff in red to your constructor
		initComponents();
		getContentPane().setBackground(Color.green);
		// or getContentPane().setBackground(new Color(54,26,190)); //red, green, blue from 0-
		//255
		}**

Popping up a message using a dialog box (Props to Craig Ceremuga for this info)	JOption Pane	**import javax.swing.*;** **JOptionPane.showMessageDialog(null, “There is not enough $$$ for this purchase”,”Change calculation error”, JOptionPane.ERROR_MESSAGE);** **the general format is** **JOptionPane.showMessageDialog(null, “Main message in the pop-up”,”Title bar of the window”, type of dialog desired);** **//You can also use the following parameters to vary the style of the dialog box that you end up with…** **PLAIN_MESSAGE – plain dialog box without any icon in it** **INFORMATION_MESSAGE – icon denoting information** **QUESTION_MESSAGE – question mark** **WARNING_MESSAGE – warning icon**

Using combo boxes	getSelectedIndex();
	getItemAt();
		public void actionPerformed(ActionEvent e) {
		//was this the combo box?
		if(e.getSource() == topicCB)
		{
		//Figure out which topic they selected
		int a = topicCB.getSelectedIndex();
		String choice = (String)topicCB.getItemAt(a);
		}
		//now choice contains the phrase from the combo box
		}

Getting data from a JTextField
TOP↑
	getText()	**public class RegisterFrame extends JFrame implements ActionListener {**
		JTextField searchTF = new JTextField();
		private void plusBUTActionPerformed(java.awt.event.ActionEvent evt) {//GEN-FIRST:event_plusBUTActionPerformed
		String temp = searchTF.getText(); //temp now contains whatever was typed into
		//the text field
		}
		}

Pausing a program for a while(Props to Jameson Ma)	Thread.sleep	**try**
		{
		Thread.sleep(1000); //sleep for one second
		}
		catch(InterruptedException e)
		{
		Thread.currentThread().interrupt();
		}
		}

Making a frame not resizeable	SetResizeable()	**//This can be done using the properties on the frame**
		public static void main(String[] args)
		{
		ComputerQuiz computerQuiz1 = new ComputerQuiz();
		computerQuiz1.setSize(400,400);
		computerQuiz1.setResizable(false); //cannot resize this window
		computerQuiz1.setVisible(true);
		}

Getting in data from a pop up dialog box **TOP↑**	showInputDialog	**import javax.swing.*;** **//to get a String** **String input;** **input = JOptionPane.showInputDialog("Please enter a word");** **//to get an integer** **String input = JOptionPane.showInputDialog("Please enter an int);** **int x = Integer.parseInt(input);** **//to get a double** **String input = JOptionPane.showInputDialog("Please enter a double);** **double y = Double.parseDouble(input);**
Setting the value of a JTextField with a String variable or double or int variable	getText(), parseDouble() and setText()	**public class YourFrame extends JFrame** **private void plusBUTActionPerformed(java.awt.event.ActionEvent evt) {//GEN-FIRST:event_plusBUTActionPerformed** **//read the two textfields** **//parse out the doubles** **//do da math** **//put out the answer**

TOP↑		//Java Students – Start Copying Here
		String tempa = numATF.getText(); //tempa now contains whatever was typed into
		//the text field
		String tempb = numBTF.getText(); //tempb now contains whatever was typed
		//into the text field
		double a = Double.parseDouble(tempa); //a now contains whatever number was
		//typed into the field inputaTF
		double b = Double.parseDouble(tempb); //a now contains whatever number was
		//typed into the field inputbTF
		double sum = a + b;
		//Now to set the sumTF to the variable sum
		sumTF.setText(Double.toString(sum)); //force the number to be a String and pop it in the textfield
		//Java Students – Stop Copying Here
		//also sumTF.setText(sum+””); //works here for the lazy coder
		}
		}

Using ImageIcons	new Image Icon and setIcon	public class TestFrame extends JFrame {
		ImageIcon grainImage, foxImage, gooseImage, boatImage; //global vars
		
		public TestFrame(){
		//Inside Constructor, to load in the images from the /images folder
		try {
		backIm = new ImageIcon(ImageIO.read(new File("images/river_drawing.jpg")));
		grainImage = new ImageIcon(ImageIO.read(new File("images/grain.gif")));
		foxImage = new ImageIcon(ImageIO.read(new File("images/fox.gif")));
		gooseImage = new ImageIcon(ImageIO.read(new File("images/goose.gif")));
		boatImage = new ImageIcon(ImageIO.read(new File("images/boat.gif")));
		} catch (IOException e) {
		e.printStackTrace();
		}
		}
		..further down in the program
		foxLBL.setIcon(foxImage); or foxLBL.setIcon(null); to clear icon

Using checkboxes	isSelected()	public class TestFrame extends JFrame implements ActionListener{
		
		JCheckBox includeDepCBX = new JCheckBox();
		
		public void actionPerformed(ActionEvent e) {
		
		if (includeDepCBX.isSelected() == true) {
		//stuff here is executed if the check box is selected
		}
		}

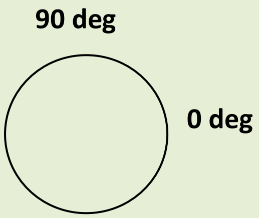
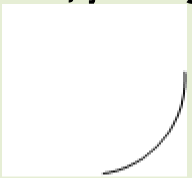
Putting multiple lines of text on a JButton (Props to Emily Zhou 2023) **TOP↑**	Use custom code in NetBeans	**Under the properties of the button > text > 3 dot button on the right > change plain text on the top to custom code > in the parentheses, enter your text. It should be "<html>______ ______ ______</html>" where each is a line break, each ____ is a word/phrase.** **Ex: "<html>test two lines</html>"** **You may have to uncheck "focusPainted" if there is an ugly focus border.**

Using radio buttons and button groups	isSelected(), setSelected(), use NetBeans to add a radio button group	**Make sure you use NetBeans to add a button group to your frame, I don't know if it will be listed in the treelist for the frame, but for buttons to act in an exclusive way, they should be part of a button group. Use the property inspector to associate the radio buttons with the group.** **//see above for isSelected() to test to see if a radio button is selected**

Trimming data and checking for empty		**public void actionPerformed(ActionEvent e) {**
		String temp = bagsTF.getText();
		if (temp.trim().equals("")) {
		JOptionPane.showMessageDialog(null, "Need Data", "Error",
		JOptionPane.ERROR_MESSAGE);
		}
		}

Set up a frame to use the enter key as well as click a button	Key Listener	**public class JavaOutletFrame**
		extends JFrame implements ActionListener, KeyListener {
		
		//Need the following three methods
		public void keyTyped(KeyEvent e) {
		if(e.getKeyCode()==KeyEvent.VK_ENTER)
		processInput(); //design another method you can call from actionPerformed
		}
		public void keyPressed(KeyEvent e) {
		//Some games use this when the key is pushed down so they can allow someone to hold the key down…ok to have this method empty
		}
		public void keyReleased(KeyEvent e) {
		}
		//method to do logic desired by both clicking a button AND pressing return
		private void processInput() {
		//Grab the bags
		String temp = bagsTF.getText();
		if (temp.trim().equals("")) {
		JOptionPane.showMessageDialog(null, "Need Data", "Error",
		JOptionPane.ERROR_MESSAGE);
		….more stuff

TOP↑		}
		
		public void actionPerformed(ActionEvent e) {
		processInput(); //call the method so clicking does same thing as enter key
		}
		
		private void jbInit() throws Exception {
		....
		//Add keylisteners
		findBUT.addKeyListener(this); //add for everywhere that might have the focus
		bagsTF.addKeyListener(this);
		}

Section IV: Painting		
Drawing an arc in a graphics context	g.fillArc() or g.drawArc	**import java.awt.*;** **public void paint(Graphics g)** **{**  **//This diagram will help you with the starting angle parameter** **//g.fillArc(x,y,(this is the upper left point of the bounding rectangle, width, height (of bounding rectangle, startAngle, arcAngle (both integers, expressed in degrees))** **//The start angle works like this; 0 represents 3 o'clock as shown on the graph above, 90 would be 12 o'clock as shown on the graph above, etc.** **//The arcAngle is what determines what size arc you get. negative for clockwise, + for counter-clockwise. So if you go -270, you'll go cw ¾ of the way around**  **g.drawArc(50,50,100,100,0,-90);** **//gives you something like this** **}**

Drawing text to a graphics window(Props to Sunil Ganesh)
 	
TOP↑
	draw String	**public void paint(Graphics g)**
		{
		g.drawString("Hello World",10,100); //10 is x and 100 is y
		g.drawString(Message + “ “ + MessageNote,10,200); //Can use String variables also
		}

Loading an image for use in an applet (Props to Steve Bozak) when painting **TOP↑**	get Image	**//usually done as a global** **Image i1 = getImage(getDocumentBase(),"../images/splash.gif”); //NOTE: this assumes that a directory one level up from the class file has been created called images and that the splash.gif file is stored in that directory**

Section V: Sound Files

UPDATED 1/2/2017: I dumped the ClassLoader as I had many problems trying to use this to make jar files as Clean and Build deleted them in NetBeans

Playing wav files from within an application or applet
NOTE: wav, midi and au files work fine, mp3's do not with this approach

```
import java.io.IOException;
import java.io.InputStream;
import java.util.logging.Level;
import java.util.logging.Logger;
import javax.sound.sampled.AudioSystem;
import javax.sound.sampled.Clip;
import javax.sound.sampled.LineUnavailableException;
import javax.sound.sampled.UnsupportedAudioFileException;
```

//NOTE:

2. **Make a new directory in the classes folder called sounds**

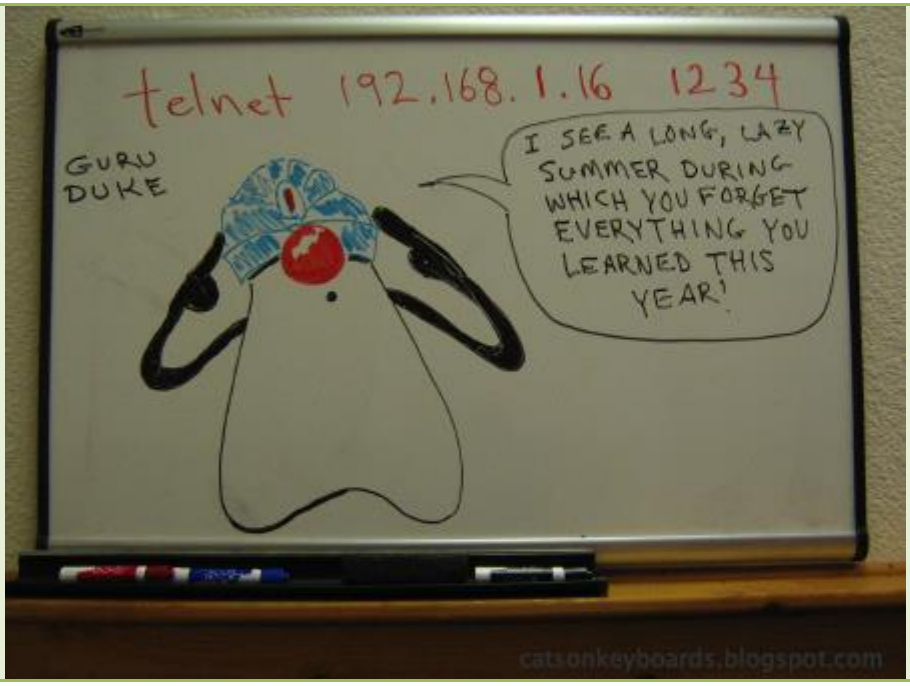
```
//HERE's the folder for my Budget Project...
/build
 /classes
  /sounds
/dist
/nbproject
/res

/src
/test
build.xml
manifest.mf
```

Copy .wav files to your classes/sounds folder(make a careful note of name)

TOP↑

TOP↑

```
public class YourClass {
  //declaration above the methods...
   static Clip placeXSnd, placeOSnd ;     //Clips to be played, one for each sound effect

 //Add a Constructor for your class
//Java Students – Start Copying Here
//NOTE: Change the YourClass on the following line to whatever your class name is
 public YourClass(){
    //one time to load in from disk
   //These files are saved in the project name/build/classes/sounds folder
      InputStream instr =
getClass().getClassLoader().getResourceAsStream("sounds/ding.wav");
      InputStream instr2 =
getClass().getClassLoader().getResourceAsStream("sounds/KbdSpacebar.wav");
      try {
         placeXSnd = AudioSystem.getClip();
         placeXSnd.open(AudioSystem.getAudioInputStream(instr));
         placeOSnd = AudioSystem.getClip();
         placeOSnd.open(AudioSystem.getAudioInputStream(instr2));
      } catch (LineUnavailableException ex) {
         System.out.println(ex);
      } catch (UnsupportedAudioFileException ex) {
         System.out.println(ex);
      } catch (IOException ex) {
         System.out.println(ex);
      }  //NOTE:CHANGE THE TTTFrame to your class name on 3 lines ABOVE
 }
//Java Students – Stop Copying Here
 public static void main(String[] args) {
    new YourClass();  //This needs to be whatever your class name is...
   playSound();  //calls the playSound method
 }//end main

public static void playSound() {
  //to actually play the sounds, we need to set the frame position to the start
   errSnd.setFramePosition(0);
   errSnd.start();
}
```



telnet 192.168.1.16 1234
GURU DUKE
I SEE A LONG, LAZY SUMMER DURING WHICH YOU FORGET EVERYTHING YOU LEARNED THIS YEAR!
catsonkeyboards.blogspot.com

The End For Now!! Adios!!!