

IST 256  
Lab  
Week 6 – Wednesday, February 24, 2010

**1. Creating the program to test the use of arrays with selection**

This program is based on the TestArrays3 method on Monday's class page. Create a GUI for this application.

Select Types of Colors

Regular                       Designer                      *(radio buttons)*

Enter Color Code between 0 and 9: | \_\_\_\_\_ | *(label and textfield)*

|\_ Select Color \_|                      *(button)*

Result                                      *(label)*

Make the event actionPerformed method for the button, and copy in the code given in class, making sure that the curly brackets match, and that all the form component names match. Test this program.

**2. Writing a GUI Application with a method and global variable**

In this lab, we will create a project with a GUI to manage the sales of sports tickets. Start a new project and name it something like Tickets. Then create a JFrame Form and name it something like TicketsGUI

In this first part of the lab, we will work together to create the form and the program that allows the user to buy tickets for men's and women's basketball, and in the next part of the lab, you will add lacrosse.

**Make the Form**

This project will have a user interface that assumes that the user can buy sports tickets for either men's or women's sports. We will first create the form for just buying basketball tickets, with a user interface that looks something like this:

Dome Ticket Shop

Men's Sports                       Women's Sports                      *(radio buttons)*

Enter Number Basketball Tickets    |\_0\_\_\_\_\_|    | Add to Cart |  
*(label, textfield and button)*

*(leave space here for lacrosse)*

(separator)

|\_\_Checkout \_\_|      Total: |\_\_\_\_\_|    (button, label, textfield)

Initialize the ticket textfield with a 0.

As we get more components on our forms, it can make the program a lot clearer if the component variable names are changed to something meaningful. So for each of the radiobuttons, textfields and buttons, right click on the component and select “Change Variable Name ...”. Pick some more meaningful names. For example, you might change the name of RadioButton1 to Men and the name of RadioButton2 to Women. Note that the name of the component changes in the Navigator pane in the lower left corner.

Create the Event -> Action -> actionPerformed method for both the buttons.

### **Write the a method to compute the price of tickets of one type**

Go to the source tab and in the program, before the actionPerformed methods, we will add a variable and a method.

Adding a variable outside a method in the class makes it a “global” variable, and it can be used in all the methods in the class. We use this for our shopping cart variable so that it can be added to in some methods and displayed in the checkout. Add this variable declaration:

```
// Shopping cart variable
double totalpricetickets = 0.0;
```

Here is a description of the method that you can use as a comment block in your program.

```
/* Method to compute the price of each item and add it to the shopping cart
 * Parameters: number of tickets
 *             price per ticket
 * There is no result returned.
 */
```

Write the method header line, giving the scope keyword “private”, the return type of void, the method name addTickets, and the formal parameter list. Try to pick good variable names for the formal parameters in the heading of the procedure.

Now the **body of the procedure** will compute the price of the tickets.

- Create a local variable to keep the ticket price.
- Compute the ticket price by multiplying the number of items times the item price.
- Add the ticket price to the totalpricetickets variable.

### **Write the Add to Cart Basketball button actionPerformed method**

The button method must get the number of tickets typed by the user into the TextField, and add their cost to the cart by calling the addTickets method. The price of men's basketball tickets is \$25.00 and the price of women's basketball tickets is \$20.00.

Declare a variable for the number of tickets (What type?) and get its value from the textfield.

Now write an if statement that checks if Men's tickets are selected, and if so, call the addTickets method with the number of tickets and the price per ticket of 25.00. Next write another if statement that checks if Women's tickets are selected, and if so, call the addTickets method with the number of tickets and the price per ticket of 20.00. (If neither of these radio buttons are selected, we will just do nothing.)

### **Write the Checkout Button actionPerformed method**

The Checkout button should display the value of the shopping cart variable, totalpricetickets, as currency.

To do this, we add the statement

```
import java.text.*;
```

to the top of the program, after the package statement and before the public class statement.

Then in the actionPerformed method, create a currency formatter,

```
// create currency formatter  
NumberFormat cf = NumberFormat.getCurrencyInstance();
```

Display the totalpricetickets variable in the textfield. Here is an example for a textfield named total:

```
// show the total  
total.setText(cf.format(totalpricetickets));
```

### **Test your program**

Run the program for several values for the selections and numbers and note the results. Be prepared to say these results at the end.

## 2. Extending the Program to also have lacrosse tickets (work with your programming partner).

### Adding to the Form

Add a label, textfield and button for lacrosse tickets under the ones for basketball tickets:

Enter Number Lacrosse Tickets    |\_\_0\_\_\_\_\_|    | Add to Cart |

We will also add a Clear button below the Checkout button and totals label:

|\_ Clear cart and start over \_|

Add actionPerformed events for both of the new buttons

### Write the Add Cart Lacrosse Button actionPerformed method:

In the source tab, add code to the actionPerformed method. The price per ticket of Men's lacrosse tickets is \$12.00 and for Women's lacrosse tickets is \$10.00.

Write the lacrosse actionPerformed method in a similar way to the basketball actionPerformed method. You could copy and paste the code, and change the names of the variables and the prices per ticket.

### Write the Clear button actionPerformed method

Set the two ticket TextFields to have 0 and set the total TextField to have \$0.00. **Set the global variable totalpricetickets to be 0.0.**

### Test the Program

Run the program and test the results for basketball and lacrosse tickets. Make sure that your clear button works.

**Be prepared to answer questions about your program and your results.**