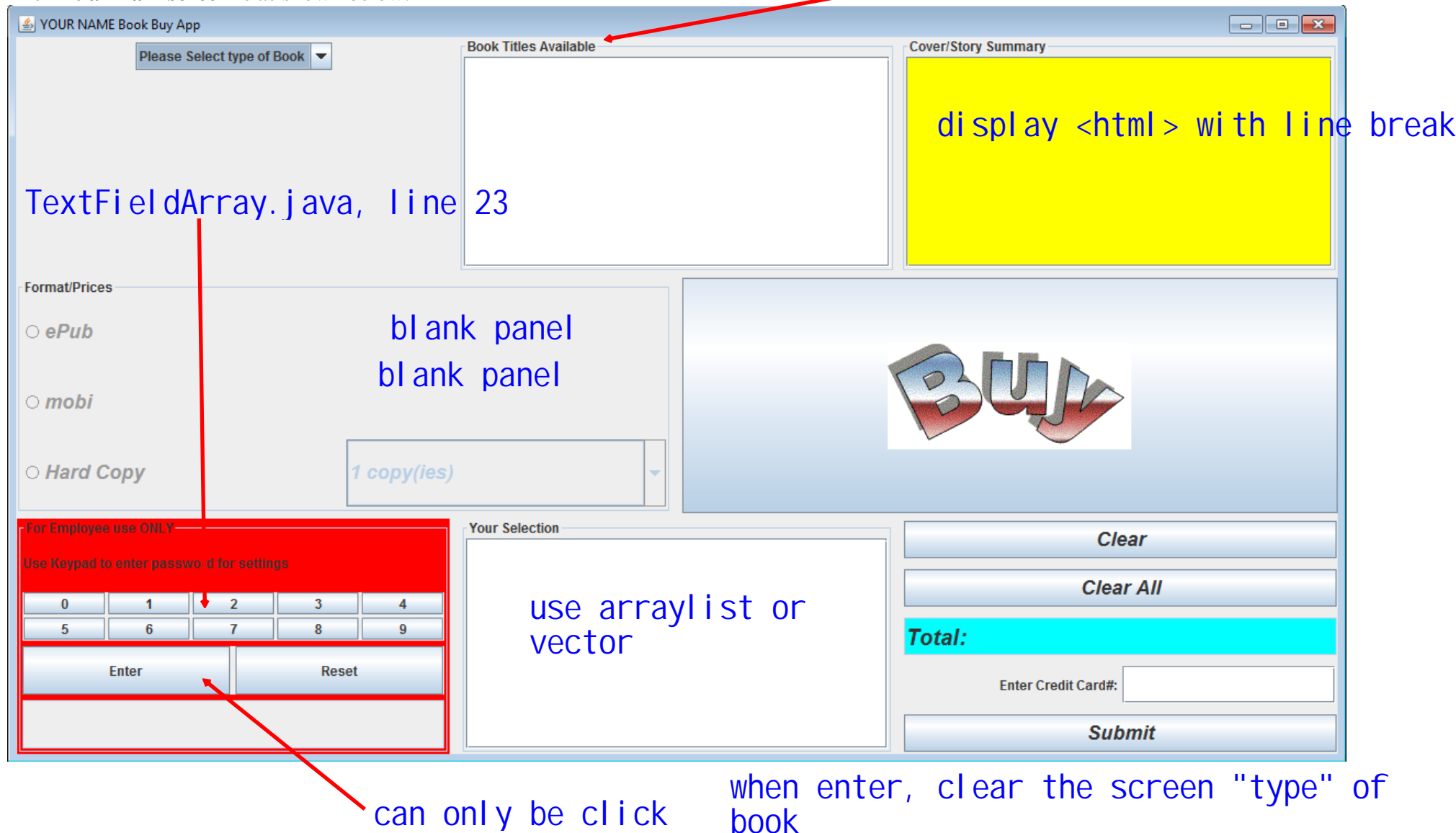**Due date: Dec. 3rd/2018**

You can do this assignment with **_one_** partner, in which case, hand in **one** piece of work with **both** your names on it.
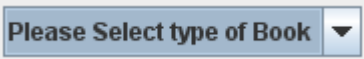
Create a Java app using **Java Swing** components and **layout managers**, call it **BookBuy.java,** that will allow customers to select a book to purchase. It should have the following functionality and layout : (**please note that you are _prohibited_ from using any software that can auto generate the code**):
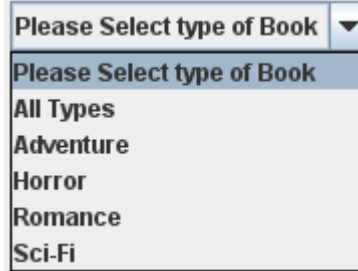
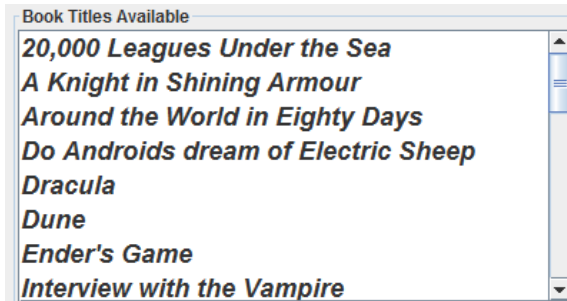**Main Screen**

The **initial main screen** is as shown below.

grid layout

title border

display <html> with line break

TextFieldArray.java, line 23

blank panel
blank panel

use arraylist or vector

can only be click

when enter, clear the screen "type" of book

Functionality

1. Initially, most of the boxes are blank, as shown on the first page. The user will first click `Please Select type of Book ▼` combo box, to display

Please Select type of Book ▼
Please Select type of Book
All Types
Adventure
Horror
Romance
Sci-Fi

the available **book types**. The selections are: . If user selects "**All Types**" ,then the **book JList** box will display

Book Titles Available
- 20,000 Leagues Under the Sea
- A Knight in Shining Armour
- Around the World in Eighty Days
- Do Androids dream of Electric Sheep
- Dracula
- Dune
- Ender's Game
- Interview with the Vampire

all the books available, i.e. . (Note, book JList box will require **scrollbars, although it is not shown here,** if you have more book titles beyond the size of the JList box)

However, if user selects "**Sci-Fi**", then the Book JListbox will only display those **Books available in that category**, i.e. in this case it would be:

Book Titles Available
- Do Androids dream of Electric Sheep
- Dune
- Ender's Game
- Jurassic Park
- Neuromancer
- Ready Player One
- Star Trek - Death in Winter
- Star Trek - Mission to Horatius
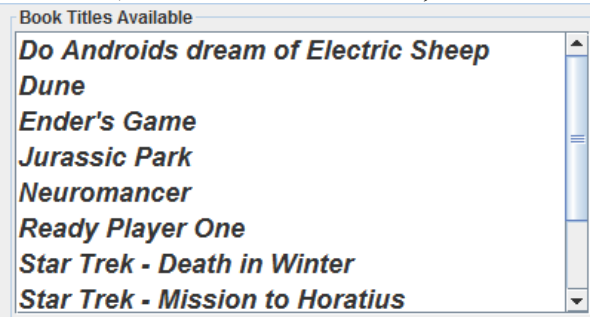
2. Upon clicking a Book title, that Book's **cover** will appear in the **Cover/Story Summary JLabel area box** (in *Arial, bolded, italic and your choice for text size, <u>with scrollbars</u>*).
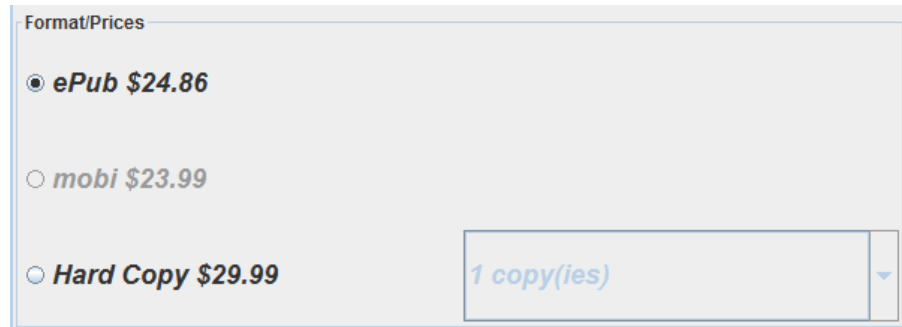

When the user moves the **mouse over the JLabel area**, it will then display the story summary, i.e.:
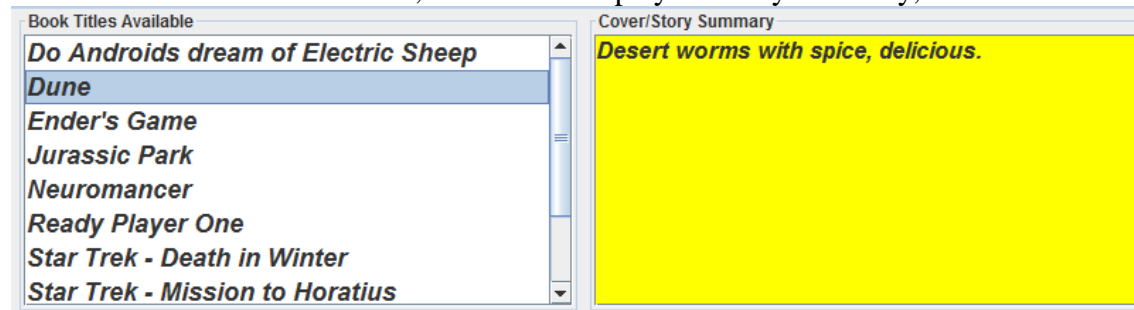
Of course, when you move the mouse away from the JLabel area, it will re-display the cover again, i.e.:

Also, it's **available format** should be indicated in the **Format/Prices JRadio buttons** (**Note**, whichever format is **NOT** available, then that JRadio button **should NOT be selectable**, and is "**grayed out**"), i.e:.
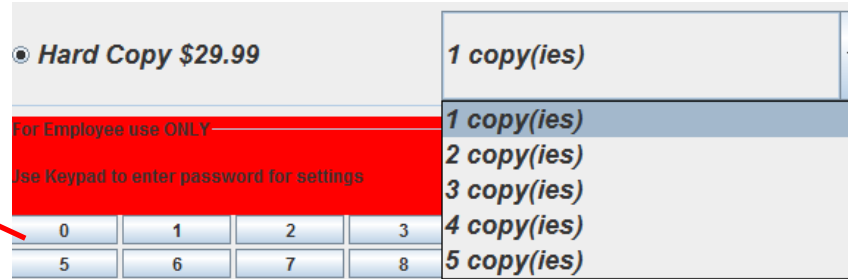

Note also the **corresponding prices** (different for each book title) are displayed in their corresponding **JRadio button text.**

So above shows "**Dune**" is **only available in ePub format for $24.86 (and is already selected by your program) and in physical Hard copy format for $29.99 each**. As the hard copy format is available, the user can purchase multiple physical copies, so the JComboBox is available to the user, but only if he/she clicks the . See below for the number of selections from the JComboBox:

use .getActionComman
d() to get button's
label(text)

try to test
if(buy)

else if (clear)

else..else.
then
psw +=
e.getActionCommand();

When you click another available JRadio button, then this JComboBox will be disabled again.
The "**mobi**" format is not available, so it is **grayed** out, but do make sure to display the current price for it.

Note, for any book title, the "**ePub**" format should be **selected as <u>default</u> , BUT only if available**. If "mobi" and "Hard Copy" format is available, then "mobi" would be the default and so on.

3. If the following format was selected . When the user clicks the Buy button (JButton with image) and if everything is fine, then it will display the book title (and for which format) in the **Books selected JList box**. The *accumulated* total will appear as shown in the **total JTextField** (It should also have a **cyan** background **and is READ ONLY**) **i.e.:**

NOTE: if the user clicks the button, BUT **NO book** title was selected, then the following error box should appear:
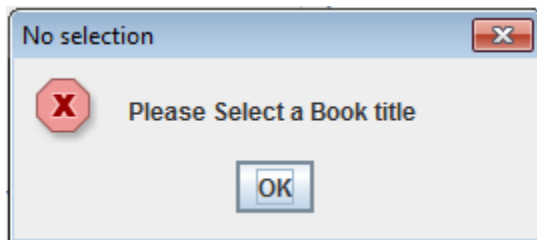
Also, if a book title is **NOT available in any format**, but the user still clicks the button, then the following error box should appear.
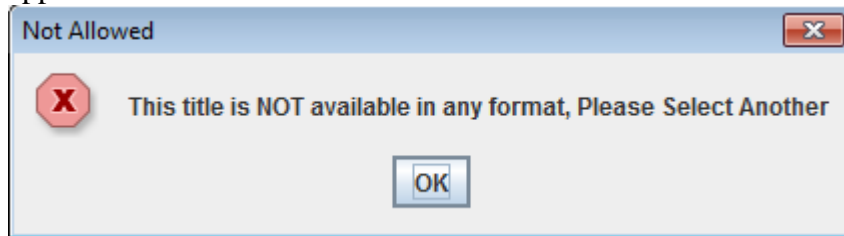
For "**ePub**" and "**mobi**" format only, if the user **accidentally** chooses a book title that has already been selected, then when the "**Buy**" button is clicked, the duplicated book is highlighted in the **Your Selection** list box, and an error message displayed, i.e.:
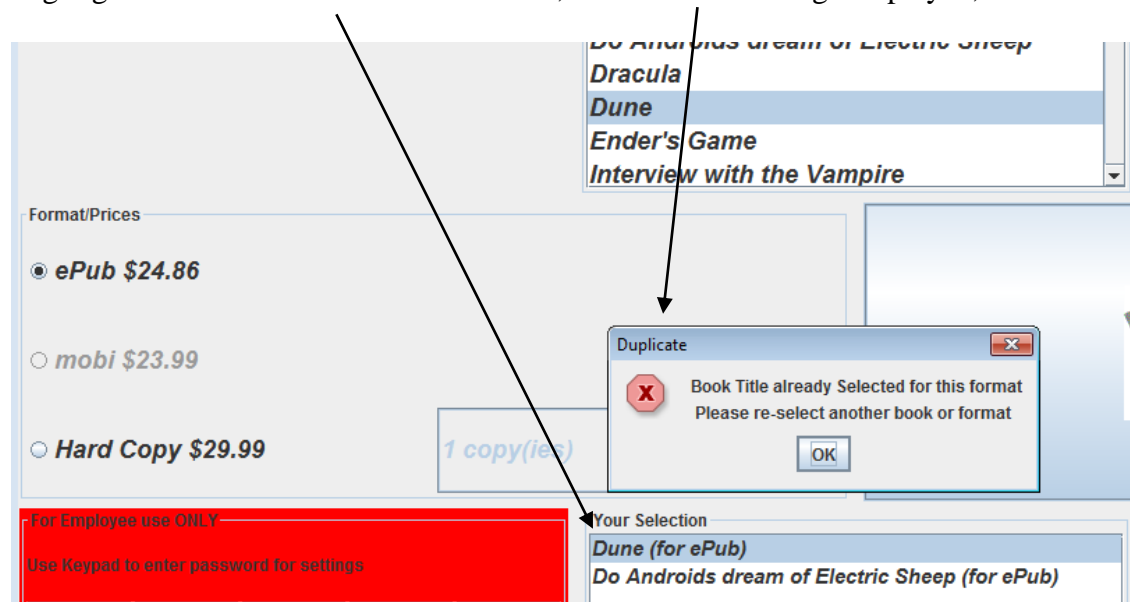
The user can select "Dune" for "**mobi**" format (assuming it is available), but after that the user cannot select Dune for either format again

For the "**Hard Copy**" format the user can select as many physical hard copies to buy (as long as it is available) and as many times as the user the user wants, i.e the following shows the user has selected copies to purchase:

Dune
Ender's Game
Interview with the Vampire

Format/Prices

○ *ePub $24.86*

○ *mobi $23.99*

◉ **Hard Copy $29.99**   *1 copy(ies)*

BU

For Employee use ONLY

Use Keypad to enter password for settings

| 0 | 1 | 2 | 3 | 4 |
| 5 | 6 | 7 | 8 | 9 |

Your Selection

Dune (for ePub)
Do Androids dream of Electric Sheep (for ePub)
Dune (2) (for Hard Copy)
Dune (1) (for Hard Copy)

Total: $140.28

The **total amount accrued** so far is then displayed in the **total JTextField** next to it. *This basically keeps a running total*.

3. Once the user is **ready to buy the Books selected**, he or she will need to enter a credit card number

Enter Credit Card#: ●●●●●●
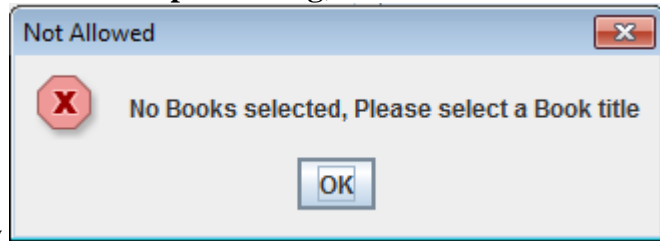
Submit

(NOT real of course), and click the   button. A warning dialog

WARNING   ⊠

⚠ Are You SURE ?

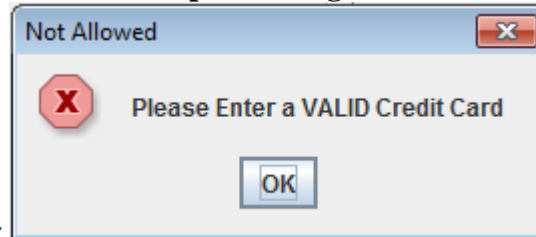[Yes]   [No]

box   should then appear. If user clicks on **Yes button**, then **ALL** the Books selected will be deleted from the **Your Selection JList Box**, with $0.00 displayed in the **Total JTextField**. If the **No** button or **close button** is clicked, then **NO action is taken (assuming the customer wants to purchase more)**.

Note, if there are **NO books selected for purchasing**, but the customer **still clicks on the "Submit" button**, then **after the usual Yes/No warning**
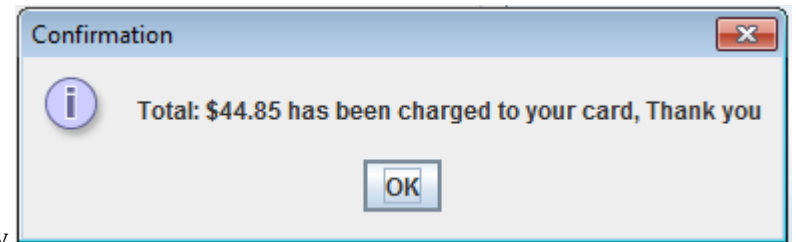
Not Allowed

⏹ No Books selected, Please select a Book title

OK

dialog box, it should display .

If **user clicks "Submit" and there are books selected for purchasing** but **did NOT enter a credit card number**, then after the usual " Are You
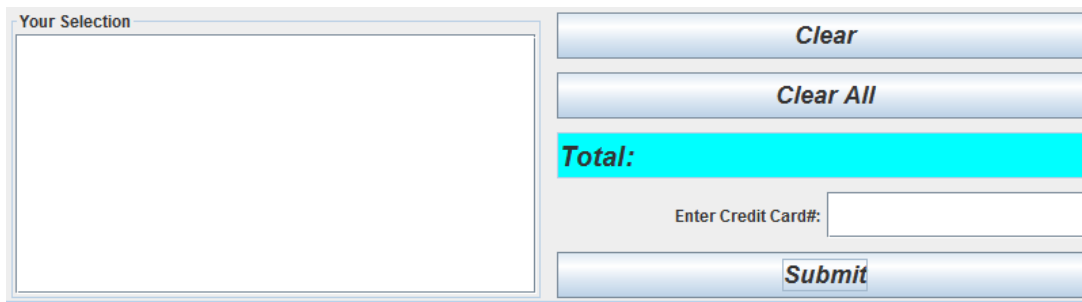
Not Allowed

⏹ Please Enter a VALID Credit Card

OK

Sure Yes/No" warning box, it should display .

Confirmation

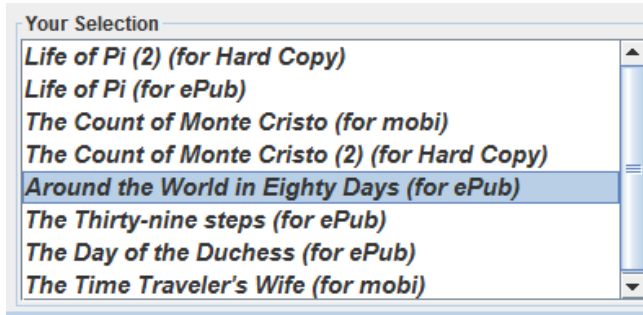ⓘ Total: $44.85 has been charged to your card, Thank you

OK

4. If **everything is fine with the credit card transaction**, then it should display .

After "OK" is clicked on, then the **Your Selection JListBox**, **Totals** and the **credit card field** should ALL be **_cleared_**, i.e:

Your Selection

Clear

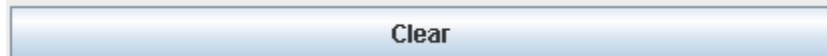Clear All

Total:

Enter Credit Card#:

Submit

Clear and Clear All Button

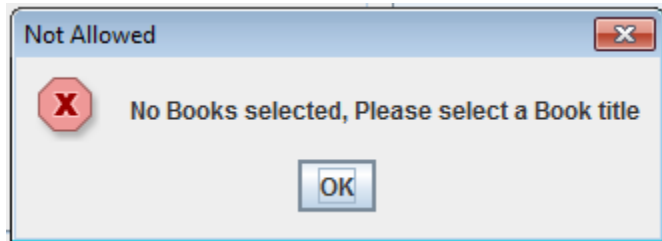The Your Selection JList Box is **single-selectable**, i.e. . Once selected, the user can click the

 button, in which case that single selection will be **deleted from the JList** box with

the **Total JTextField** updated ***immediately*** that is, the amount should be reduced from to , i.e. it should keep a running total. **NOTE**, if the user continues to clear every selection in the Books selected JList box, **then the total eventually should be 0.00**

If the **Clear button was clicked BUT NO book selected**, then the following error box should appear.
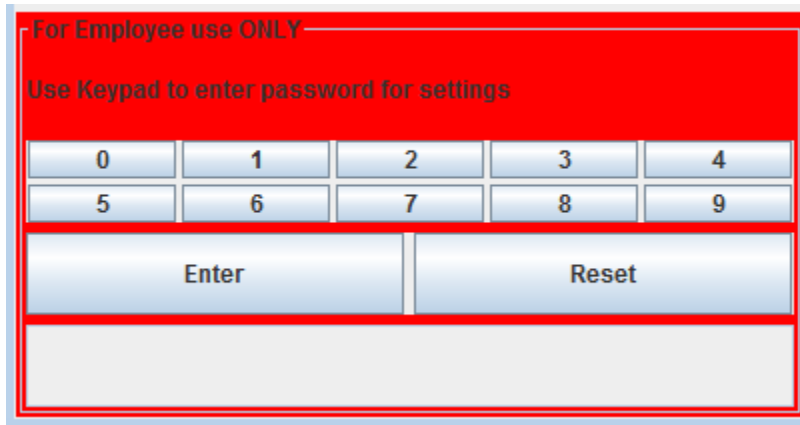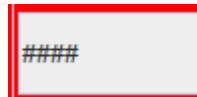

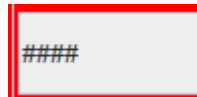If the button is clicked then a warning box such as
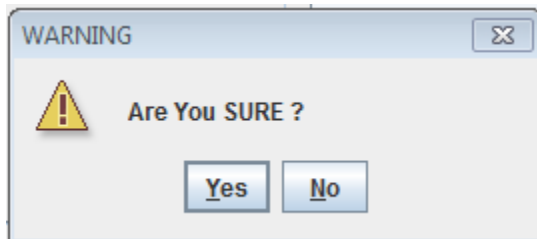
 is displayed. If user clicks on **Yes button**, then **ALL** the Books selected will be deleted from the Your Selection JList Box, with **$0.00** displayed in the **Total JTextField**. If the **No** button or **close button** is clicked, then **NO action is taken**.

Update JPasswordField

This is a numeric keypad, where employees can enter a numeric password by ***clicking*** on the keypad (i.e. NOT entering on the keyboard). If the button is clicked and the correct password was entered, then it will go into the Book Update window (please see next page for details).

When clicking the password, make sure that it is masked out i.e. (note the **different mask**). The password can be any number of digits**, which I leave up to you**. You can "**hardcode**" the passcode into the program. If user enters the wrong password, then the following error box should appear: .
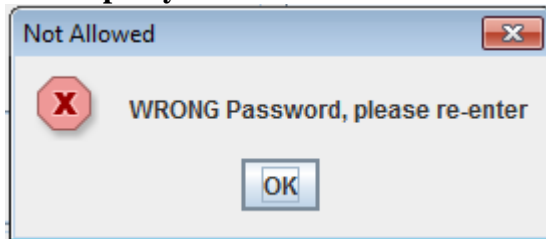
The merely **clears** the password field (just in case you entered the wrong password and want to restart).

Upon entering the **correct** password it <u>**should clear the Book Titles Available JList box, Cover/Story Summary**</u> and the **price JRadioButtons, with radio buttons no longer selectable**, i.e.:
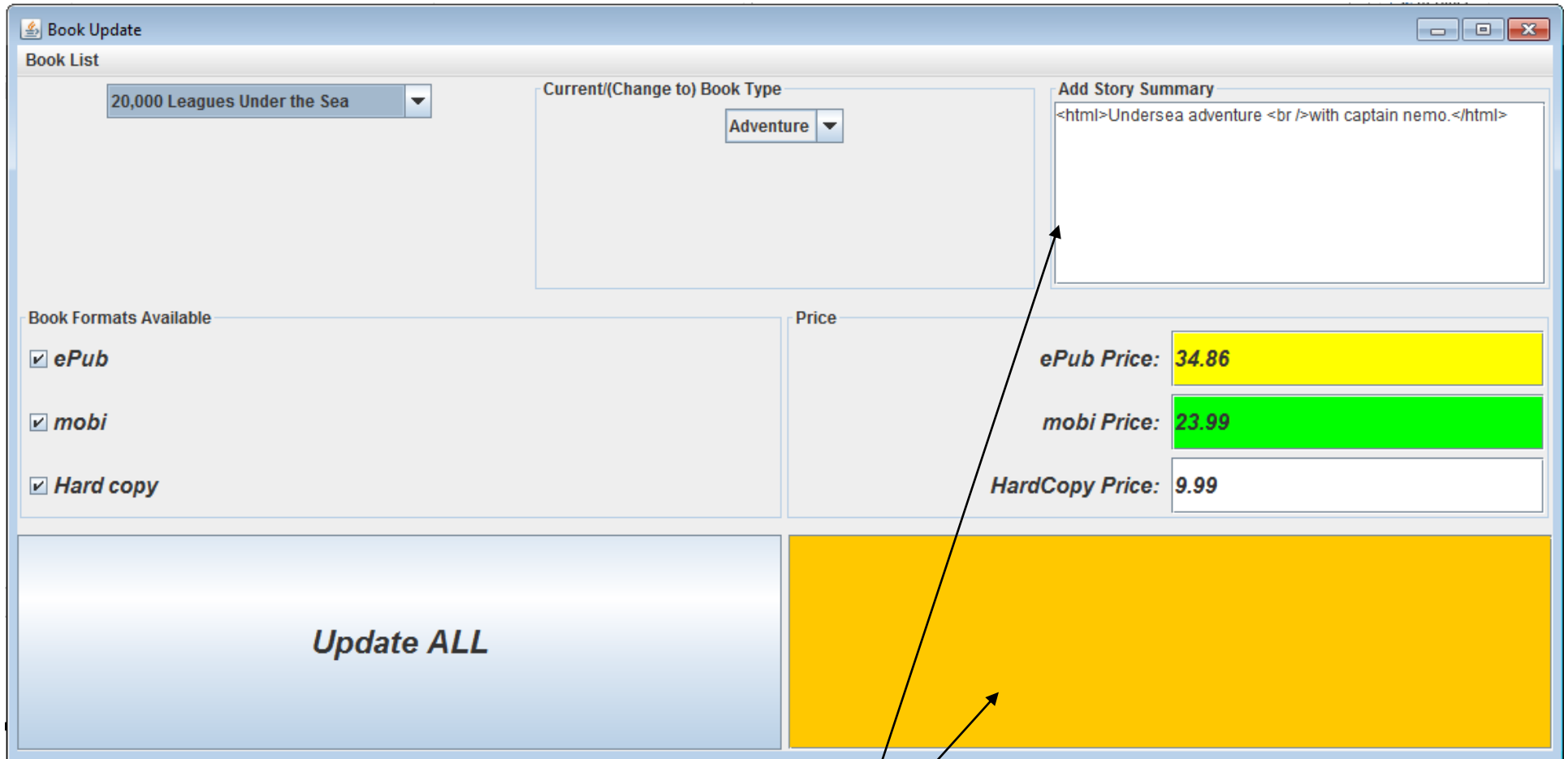

Note, the **Your Selection JList box and Total JTextField** is **not** cleared. Then the following Book Update window appears (**see next page**).

Book Update Window (Save this part as UpdateFrame.java)

Upon entering the correct password, this will generate a **window** with the following layout and components.

Note, this window is **resizable** BUT the **layout should remain the SAME**, whatever the size of the window, i.e. use **Layout Managers**.

JTextArea, with scrollbar

Here the user can change the Book's properties i.e. it's type, format, story summary and prices. The user first selects the book title from the Book pull

| 20,000 Leagues Under the Sea | ▼ |

20,000 Leagues Under the Sea
A Knight in Shining Armour
Around the World in Eighty Days
Do Androids dream of Electric Sheep
Dracula
Dune
Ender's Game
Interview with the Vampire

down box, i.e. ~~that's Available~~ . The current Book details i.e. it's **type, format, summary, prices** will be displayed in their

Current/(Change to) Book Type

| Adventure | ▼ |

Add Story Summary

<html>Undersea adventure
with captain nemo.</html>

respective components, i.e.   and
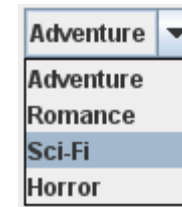
Book Formats Available

☑ *ePub*

☑ *mobi*

☑ *Hard copy*

Price

ePub Price: `34.86`

mobi Price: `23.99`

HardCopy Price: `9.99`

The user can **change** the associated Book type by selecting from the **Book type Combo** box. (here you are about to change from "Adventure" to "Sci-Fi")

The user can also change the Story Summary **in the "**Add Story Summary**" JTextArea box (make sure scroll bars do appear horizontally and vertically as required)**

. If you want the text to appear as multiple lines in the **JLabel** in **the main app**, then you need to enter the text as shown (i.e. with <html> and <br />). When you display this in the main app, it would appear as thus:
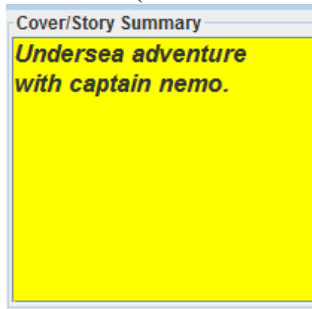
The user can also change what format by clicking on any of the checkboxes i.e. (For example, in this case all three formats are available. Besides that, the user can also **reset the prices** by entering new prices for each of the corresponding formats in their respective

JTextFields i.e.

. **HOWEVER** be sure that if the user accidentally enters more that 2 decimal places, i.e. he or she enters 45.7892, then it will round to 45.79 and that will be the price displayed in the text box and used in subsequent calculations.(**Hint:** first convert to double, use **DecimalFormat twoDecimal = new DecimalFormat("0.00");** to round to 2 decimal places and then resave back.
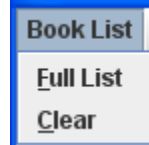
Once you are satisfied with **all** changes, then the

button **MUST be clicked (otherwise the changes made will NOT be**
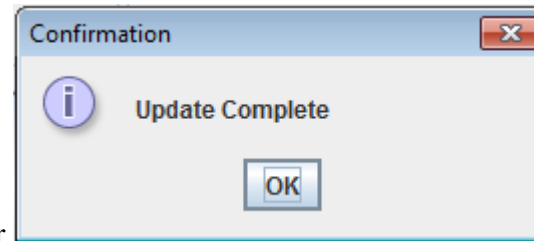
kept). The following confirmation dialog box should appear

. The changes made here, **MUST then be reflected in the previous main app.**

<u>**Book List Menu**</u>

This should have the above selections and corresponding <u>**mnemonics**</u>.

- If the user selects **Full List** , then it should display in the Book JTextArea, a **full** list of all the Books, what format and type i.e.
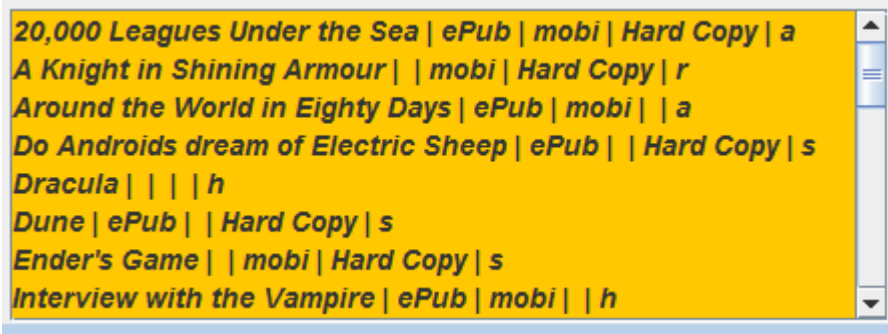
(Note, **the font is Helvetica, bolded, italics but your choice on exact font size.**) AND HAVE **scrollbars available.**

- If the user selects **Clear** , then it simply clears Book JTextArea

Exiting Book Update

- Ensure also the following buttons do work with this window.

Note: It is **important** that when the user exits from this **Book Update screen** and returns back to the main app, the user **MUST** select from the "Please Select type of Book" pull down box, because when you return, the JCombobox for the available Books , Story summary and the prices are all blank initially (with the format radio buttons **NOT selectable**).

When you select a book title, it will then display that book's details, and it should **reflect the changes** you made in the book update window.

Classes

You must create at least **2 classes** to start off with:

- **class BookInfo**

```
 {

    private String strBookTitle;
    private char chBookType;
    private boolean boolBookFormatAvail[] = new  boolean[3];
    private double doubBookPrice[] = new double[3];
    private String strBookCover;
    private String strBookComment;
```

we can use vector for Year Selection

create set and get

Create a **constructor** to initialise all the above

As the variables are private, create the necessary **public instance methods** to **set** and **get** these values.

- **class BookList**

This is a **separate** class, not related in anyway to **Class BookInfo**. It should consist of:

- an **array of 29** references (or more if you want to add more book titles).
- An **instance method** (call it `createList()`) to instantiate each of these references with the Book Title, Book type, Book format availability(epub, mobi,hard copy), prices and story summary.

For example, below shows a partial list:

```
class BookList
{

  BookInfo[] bkList;

  public void createList()
  {

    bkList = new BookInfo[29];
        bkList[0] = new BookInfo("20,000 Leagues Under the Sea",'a',
true,true,true,34.86,23.99,9.99,"20000 leagues under the sea.jpg","<html>Undersea adventure <br />with
captain nemo.</html>");
        bkList[1] = new BookInfo("A Knight in Shining Armour",'r', false,true,true,30.86,12.99,7.99,"A
Knight in Shining Armour.jpg","A knight in shining armour");
```

```
        bkList[2] = new BookInfo("Around the World in Eighty Days",'a',
true,true,false,34.86,23.99,5.99,"Around the World in Eighty Days.jpg","Travelling before travel agents");

        bkList[3] = new BookInfo("Do Androids dream of Electric Sheep",'s',
true,false,true,25.45,10.92,8.99,"Do Androids dream of Electric Sheep.jpg","<html>Rick Decard must retire 5
replicants<br /> and wants to be called BladeRunner.</html>");

        bkList[4] = new BookInfo("Dracula",'h',
false,false,false,24.86,23.99,44.99,"Dracula.jpg","<html>Yes, it's the guy<br />with the fangs and a liquid
diet.</html>");

        bkList[5] = new BookInfo("Dune",'s', true,false,true,24.86,23.99,29.99,"dune.jpg","Desert worms
with spice, delicious.");

etc…………….
```

Note, for **BookType**, use the following:

a	Adventure
r	Romance
s	Sci-Fi
h	Horror

What to hand in:

1. Front cover page with your name (your partner's name), course, assignment number, instructor's name, section and due date. (If you did this assignment with a partner, then hand in ONE piece of work with BOTH your names on it).
2. Hardcopy of the program listing of ALL classes.
3. Zip up your files and call it *csis1275_yourSectionNumberF2018YourNameAs4.zip* and do a file submission through **Blackboard**

4. The **password** for the **Book Update**.

ENSURE THAT THIS IS YOUR OWN WORK !!!!!!!!!
MARKS WILL BE LOST IF ANY OF THE ABOVE IS NOT MET