

Due date: April 13th/2017

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 Applet using Java Swing components and **layout managers**, call it **MovieTheatre.java**, that will allow customers to buy movie tickets for a particular movie. It should have the following functionality and layout :

Main Screen

The **initial main screen** is as shown on the next page.

Layout

Ensure that the layout of the main screen **remains the same**, whatever the size of the applet (i.e. **use layout managers**)

Applet viewer: movie theaterwithcolumn.class

Applet

Select Movie Rating

☒ All ☐ G

☐ PG ☐ 14A

☐ 18A ☐ R

Select Movie

A United Kingdom
 Amitiville The Awakening
 Arrival
 Baywatch
 Beauty and the Beast
 Blade Runner 2049
 Blazing Samurai
 Fifty Shades Darker
 Furious 8: The Fate of the Furious
 Ghost in the Shell
 Guardians of the Galaxy: Vol 2
 John Wick Chapter 2
 Justice League
 Logan
 Power Rangers
 Rogue One: A Star Wars Story

Select Show Time

Tickets

☒ Adult-\$5.50 ☐ Child-\$3.95

1

Select

None

Your Selection

Clear Clear All

Total:

Enter Credit Card #

Submit

For Employee use ONLY

m	n	o	p
q	r	s	t
			Enter
			Reset


Applet started.

☒ All ☒ Adult-\$5.50

☒ All

Note that ☒ All and ☒ Adult-\$5.50 should already be **selected by default**. Also as ☒ All is selected by default, **then all movies** should also be displayed in the **Select Movie JList box**.

Functionality


1. The customer can click on any of the following movie ratings (although, when the applet is first run,  should already be selected.

Select Movie Rating

☒ All ☐ G

☐ PG ☐ 14A

☐ 18A ☐ R

As  is initially selected, **then all movies** should be displayed in the **Select Movie JList box**, i.e.:

Select Movie Rating	Select Movie
<input checked="" type="radio"/> All <input type="radio"/> G	A United Kingdom
<input type="radio"/> PG <input type="radio"/> 14A	Amitiville The Awakening
<input type="radio"/> 18A <input type="radio"/> R	Arrival
	Baywatch
	Beauty and the Beast
	Blade Runner 2049
	Blazing Samurai
	Fifty Shades Darker
	Furious 8: The Fate of the Furious
	Ghost in the Shell
	Guardians of the Galaxy: Vol 2
	John Wick Chapter 2
	Justice League
	Logan
	Power Rangers
	Rogue One: A Star Wars Story



Of course if for example was selected , then only “G” rated movies will be displayed, i.e.:

Select Movie Rating

☒ All ☒ G

☐ PG ☐ 14A

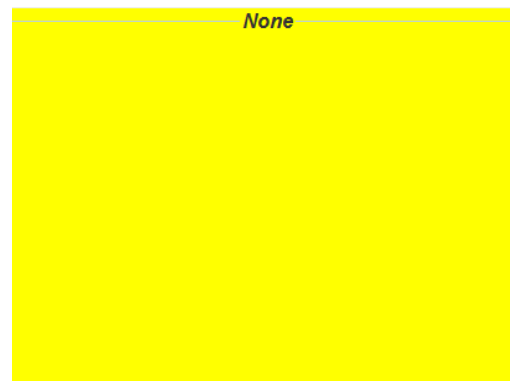
☐ 18A ☐ R

Select Movie

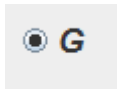
- Blazing Samurai
- Power Rangers
- Spider-man: Homecoming
- Star Wars Episode VIII
- The Lego Batman Movie

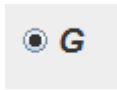
Note also, each time you click on one of the movie ratings, make sure to clear the following: **the Select Show Time JListBoix** and the **picture label box**, i.e:

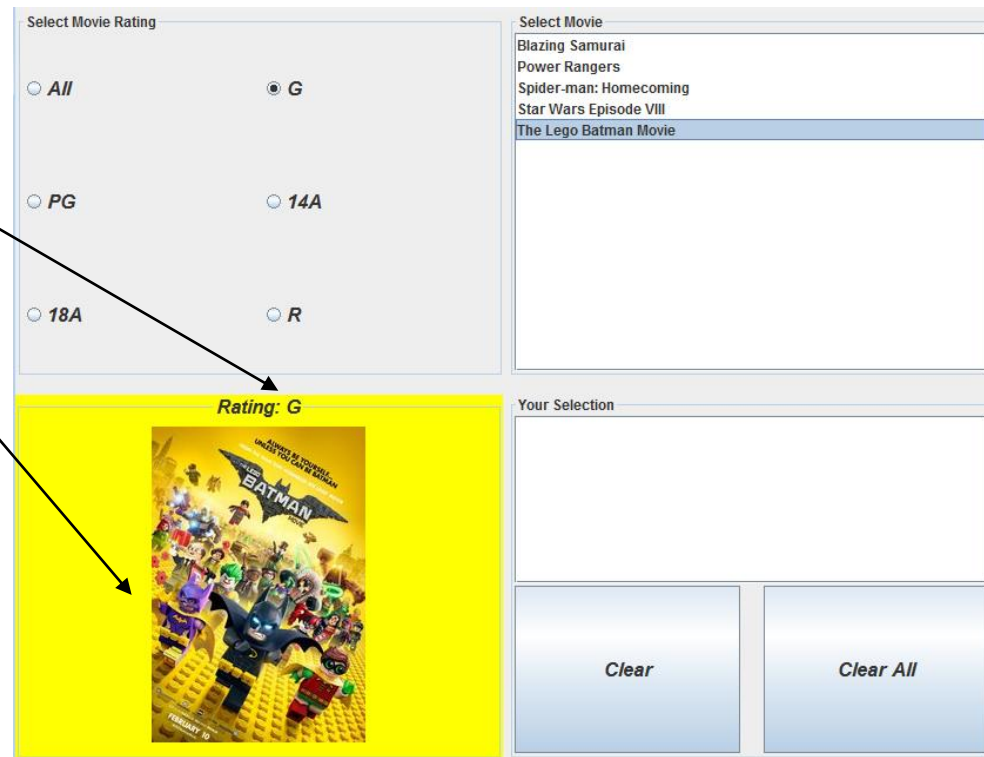
Select Show Time



as each movie has a different set of show times and picture poster.



2. Assuming  was selected, the customer can click on any of the movies displayed in the **Select Movie JList box**. As soon as a movie is selected, the picture poster of that movie is displayed in it's respective component, with a the rating appearing in the border above the picture, i.e.:



Select Movie Rating

☐ All ☒ G

☐ PG ☐ 14A

☐ 18A ☐ R

Select Movie

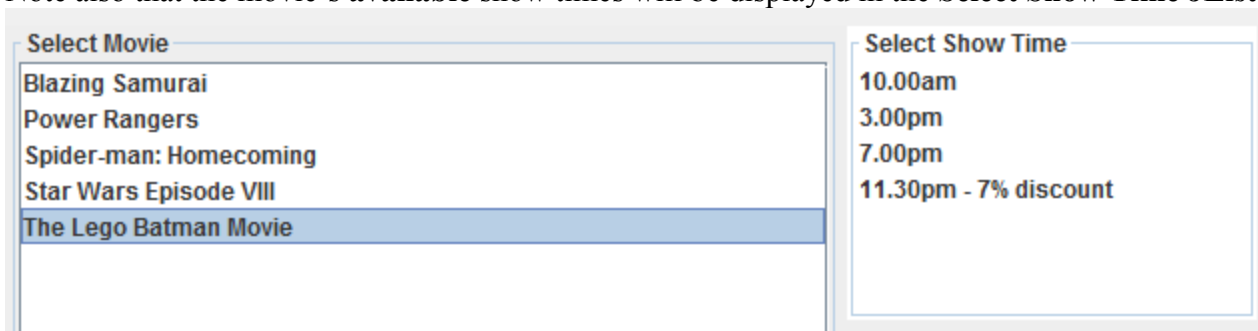
Blazing Samurai
Power Rangers
Spider-man: Homecoming
Star Wars Episode VIII
The Lego Batman Movie

Rating: G

Your Selection

Clear Clear All

Note also that the movie's **available** show times will be displayed in the **Select Show Time JList box**, i.e.:



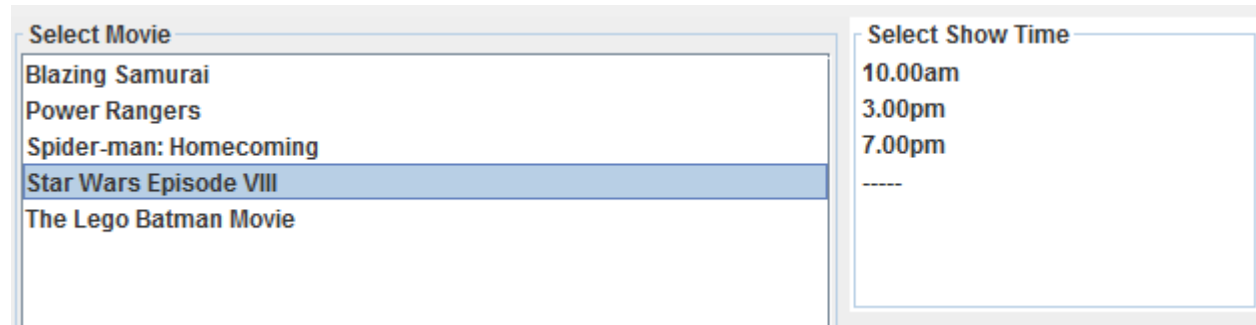
Select Movie

Blazing Samurai
Power Rangers
Spider-man: Homecoming
Star Wars Episode VIII
The Lego Batman Movie

Select Show Time

10.00am
3.00pm
7.00pm
11.30pm - 7% discount

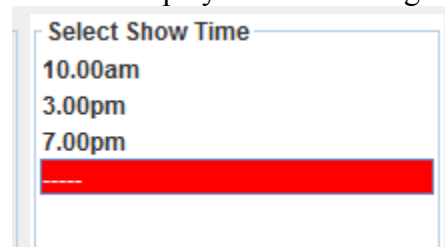
Each movie has a **different set of show times** available, i.e.:



The screenshot shows two side-by-side windows. The left window, titled "Select Movie", contains a list of five movies: "Blazing Samurai", "Power Rangers", "Spider-man: Homecoming", "Star Wars Episode VIII" (which is highlighted with a blue background), and "The Lego Batman Movie". The right window, titled "Select Show Time", contains a list of three show times: "10.00am", "3.00pm", and "7.00pm", followed by a dashed line "-----".

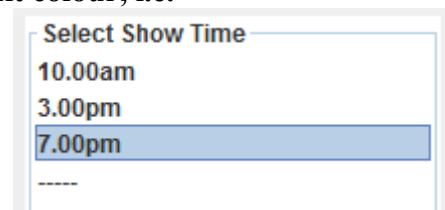
Above shows that this movie only has 3 show times available.

Note that if the user clicks on an **invalid** show time, it should display with **red** background, **white** foreground, i.e.:



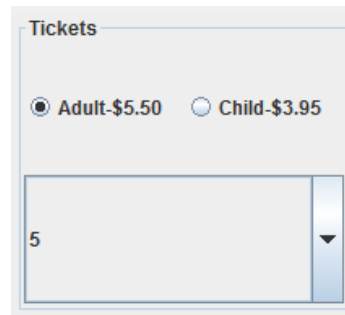
The screenshot shows the "Select Show Time" window with the same three options: "10.00am", "3.00pm", and "7.00pm". The "7.00pm" option is highlighted with a red background and white text, indicating it is an invalid selection.

All **valid** show times will be displayed in their **default colour**, i.e.



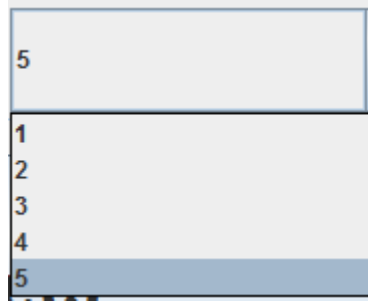
The screenshot shows the "Select Show Time" window with the same three options: "10.00am", "3.00pm", and "7.00pm". The "7.00pm" option is highlighted with a blue background and black text, indicating it is a valid selection.

3. Continuing from above, if the user clicks on the 7.00pm show time and then selects the following:



The screenshot shows a form titled "Tickets". It contains two radio button options: "Adult-\$5.50" (which is selected) and "Child-\$3.95". Below these options is a text input field containing the number "5".

That is, **5 tickets for Adult @ \$5.50 per ticket.**



The screenshot shows a vertical pull-down menu. The menu is open, displaying a list of numbers: 1, 2, 3, 4, and 5. The number 5 is highlighted with a blue background, indicating it is the selected option.

Note there should be  for the tickets pull down box.

Select

4. Upon clicking on the button, the following is displayed:

Applet

Select Movie Rating

☐ All ☒ G ☐ PG ☐ 14A ☐ 18A ☐ R

Select Movie

Blazing Samurai
Power Rangers
Spider-man: Homecoming
Star Wars Episode VIII
The Lego Batman Movie

Select Show Time

10.00am
3.00pm
7.00pm

Tickets

☒ Adult-\$5.50 ☐ Child-\$3.95

5

Select

Rating: G

STAR WARS
EPISODE VIII

Your Selection

Star Wars Episode VIII ==> \$27.50

Clear Clear All

Total: \$27.50

Enter Credit Card #

Submit

For Employee use ONLY

m	n	o	p
q	r	s	t
Enter			
Reset			

Applet started.

Note, the **Total JLabel field** should keep a running total, i.e. as soon as the “**Select**” button is clicked, the new **accumulated** total should be displayed, i.e.:

The screenshot shows a Java applet window titled "Applet". It contains several panels for user interaction:

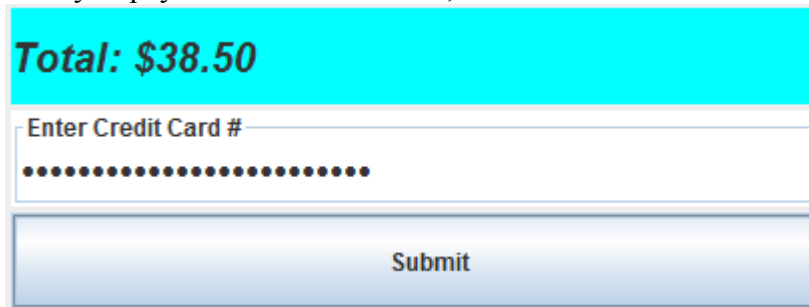
- Select Movie Rating:** Radio buttons for "All", "G" (selected), "PG", "14A", "18A", and "R".
- Select Movie:** A list box containing "Blazing Samurai", "Power Rangers", "Spider-man: Homecoming", "Star Wars Episode VIII", and "The Lego Batman Movie" (highlighted).
- Select Show Time:** Radio buttons for "10.00am", "3.00pm" (selected), "7.00pm", and "11.30pm - 7% discount".
- Tickets:** Radio buttons for "Adult-\$5.50" (selected) and "Child-\$3.95", and a text field with the value "2".
- Select:** A large button with the text "Select".
- Rating: G:** A yellow panel displaying a movie poster for "LEGO BATMAN MOVIE".
- Your Selection:** A list box showing "Star Wars Episode VIII ==> \$27.50" and "The Lego Batman Movie ==> \$11.00".
- Total: \$38.50:** A cyan panel displaying the total cost.
- Enter Credit Card #:** A text field for credit card information.
- Submit:** A button at the bottom right.

So, above shows another movie was selected, so a new entry was added to the Your Selection JList box, with the new total displayed in the **Total**

JLabel field **Total: \$38.50** ..

The **Total JLabel field** should also have a **cyan** background, with the font as shown.

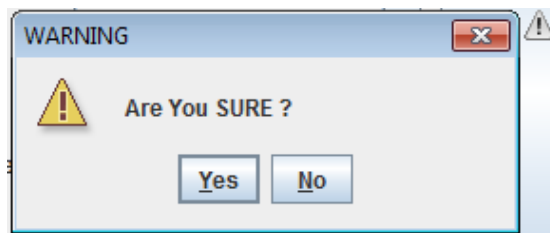
5. If the customer is ready to pay for the movie tickets, he/she will enter the **credit card number** (NOT an actual one of course) and click the



The image shows a payment form. At the top, a cyan bar displays "Total: \$38.50". Below it is a text field labeled "Enter Credit Card #" with a series of dots indicating where to enter the number. At the bottom is a "Submit" button.

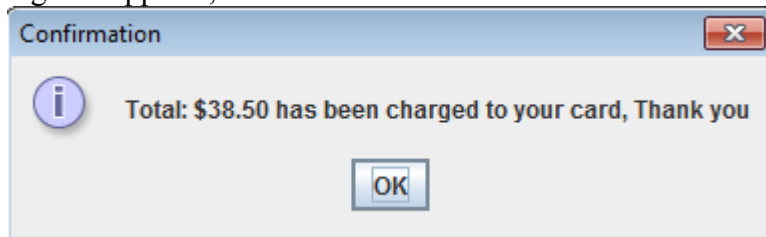
submit button, i.e.:

(Note the credit card field must be a **JPasswordField**)



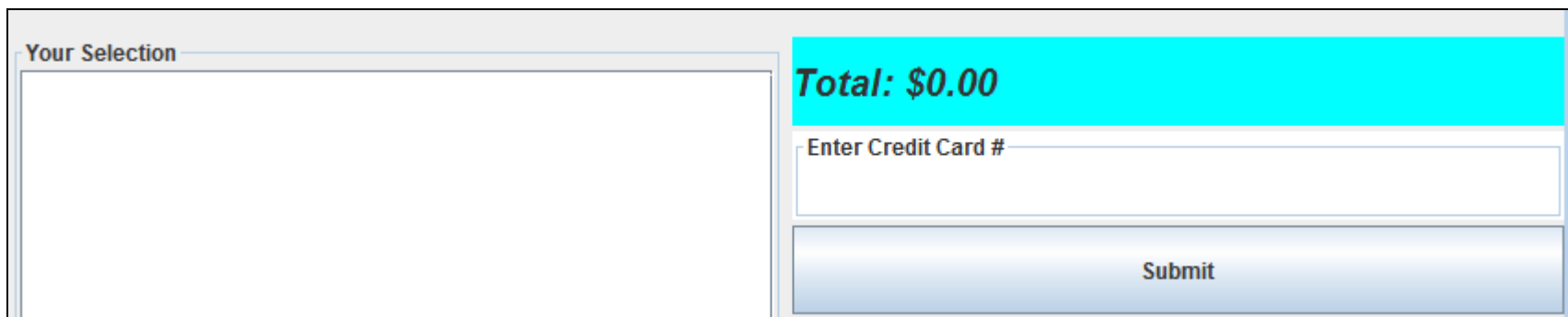
A warning box appears, i.e.:

If the customer clicks "Yes" then



appears. Clicking on "Ok" will clear the **Your Selection JList box** and display

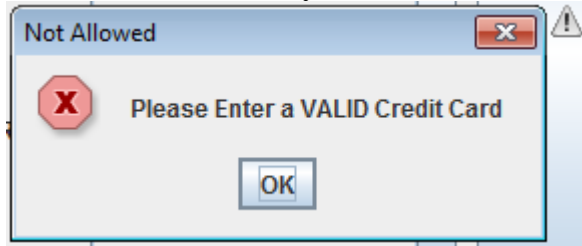
0s for **Total JLabel field i.e..**



The image shows the payment form after a successful transaction. The cyan bar at the top now displays "Total: \$0.00". The "Enter Credit Card #" field is empty, and the "Submit" button is still present. On the left, there is a "Your Selection" JList box which is currently empty.

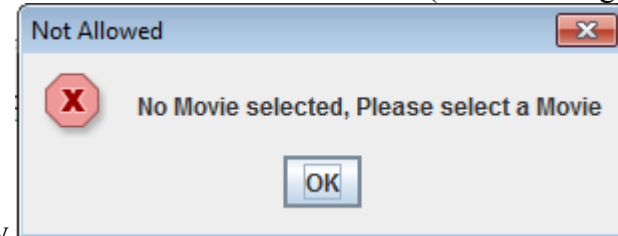
If the **No** button or **close button** is clicked, then **NO action is taken (assuming the customer wants to order more tickets)**.

If the customer clicks “Submit” and **there are movies already selected**, but **did NOT enter a credit number**, then after the usual “ Are You Sure



Yes/No” dialog box, it should display

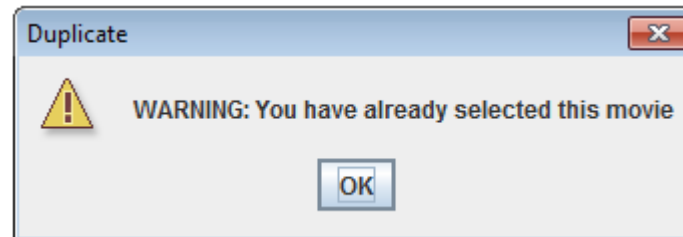
If there are **NO movies selected**, from **Select Movie** JList box, but the customer still clicks on the “**Submit**” button (**after** entering a credit card



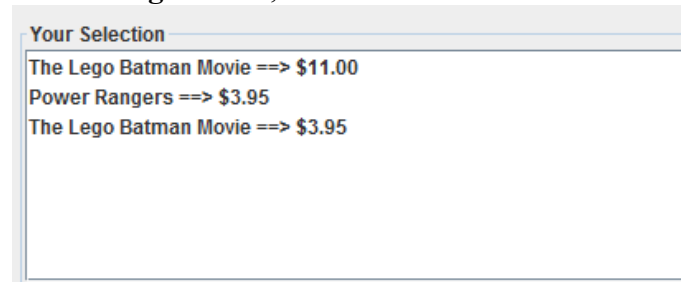
number), then after the usual “ Are You Sure Yes/No” dialog box, it should display

Selecting the SAME movie already present in Your SelectionJListBox

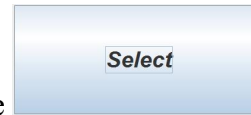
If the user selected a movie that is already in the **Your Selection** JList box, then the following warning message should appear:



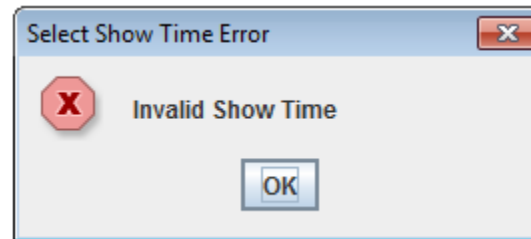
However, after click on “OK”, the transaction **should still go ahead**, i.e.:



Selecting invalid show time



If the user selected an invalid show time and the proceeded to click the button, then the following error box should appear:

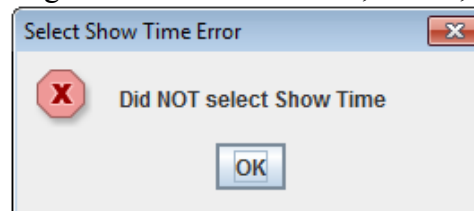


In this case after clicking on “OK” ***NO transaction should occur.***

Not selecting a Show time



If the user did NOT select a valid show time before clicking on button, then display the following error box:

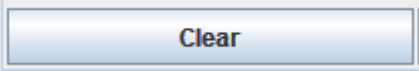


Clear and Clear All Button

These buttons allow the customer to **remove** their selections from the Your Selection JList box.

The **Your Selection** JList Box is **single-selectable**, i.e.

The screenshot shows a Java Swing window titled "Your Selection". It contains a JList box with the following items: "The Lego Batman Movie ==> \$11.00", "Power Rangers ==> \$3.95", "The Lego Batman Movie ==> \$3.95" (highlighted), "Blazing Samurai ==> \$5.50", "Amitiville The Awakening ==> \$5.50", "Blade Runner 2049 ==> \$5.50", "Ghost in the Shell ==> \$5.50", and "A United Kingdom ==> \$5.50". Below the list are two buttons: "Clear" and "Clear All". To the right of the list is a cyan label "Total: \$46.40". Below that is a text field "Enter Credit Card #". At the bottom right is a red-bordered section titled "For Employee use ONLY" containing four buttons: "m", "n", "q", and "r".

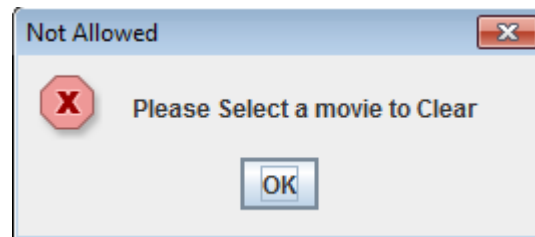
Once a selected movie has been chosen and the  button was clicked, then that entry would be removed from the Your Selection JList box with the Total JLabel field updated i.e. if the above was selected and the clear button was clicked, then the amount should be

Total: \$46.40

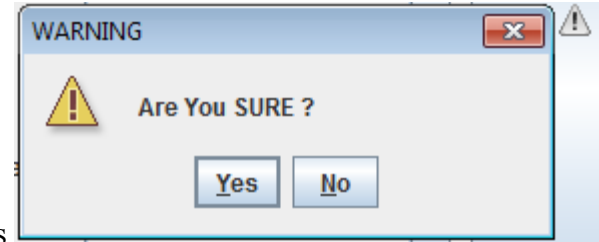
Total: \$42.45

reduced from. to , that is, it should keep a **running total**. **NOTE**, if the customer continues to clear every selection in the Your Selection JList box, **then the total eventually should be 0.00**.

If the **Clear button** was clicked **BUT NO movie** was selected to clear from the **Your Selection** JList box, then the following error box should appear.



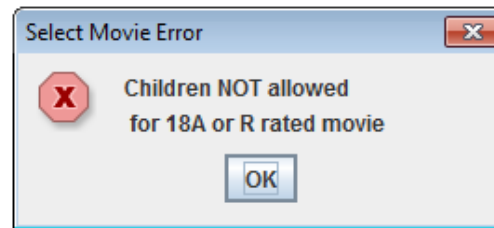


If the **Clear All** button is clicked then a warning box such as  is displayed. If customer clicks on **Yes button**, then **ALL** the movies will be deleted from the Your Selection JList Box, with \$0.00 displayed in the Total JLabel field.

If the **No button** or **close button** is clicked, then **NO action is taken**.

Child Tickets

Children are **NOT** allowed for **18A** or **R** rated movies, thus child tickets cannot be purchased for these films. Please display the following error box, if the user attempts to do so.



Children are also **NOT** allowed for the **11.30pm Show time**. If the user selects this show time and clicked on , then upon clicking the



button, it should display the following error box:



Note though that the **first error**, i.e. 18A/R rated movies, takes **precedence**.

11.30pm 7% Discount

If the user select this show time for a movie, then there will be a **7% discount**. The discount will be applied **AFTER** calculating the subtotal for that specific movie, i.e.:

Your Selection	
The Lego Batman Movie ==>	\$10.23
Star Wars Episode VIII ==>	\$11.00

Here, Lego Batman had **2 adult tickets @ \$5.50** each, so the subtotal is \$11.00. After the **7% discount**, it is **\$10.23**. Note, for the next movie, the user **did not** select this show time (or was **not available**), so it was calculated at the regular price.

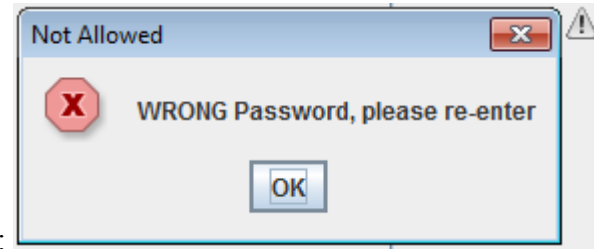
Movie Update

For Employee use ONLY			
m	n	o	p
q	r	s	t
...		Enter	
		Reset	

This is a **JPassword** Field, where employees can enter a passcode using the **keypad ONLY**. If **Enter** button is clicked and the correct passcode was entered, then it will go into the Movie Update window (please see next page for details).

The passcode can be any **number of letters in the keypad**.

The passcode variable itself is declared in **MovieTheatre.java** file. Please set the passcode in your applet (preferably in “**init**”).



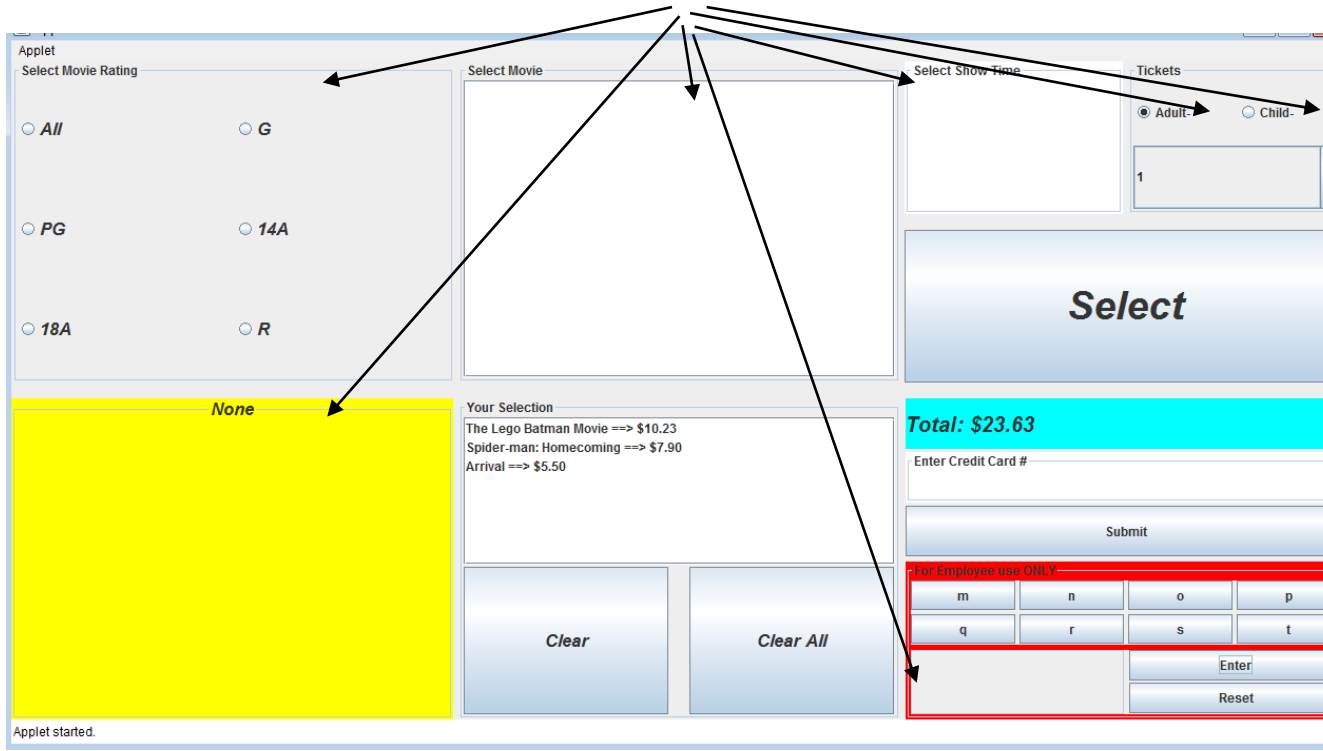
If user enters the **wrong** passcode, then the following error box should appear:
“OK”, it should **clear** the password field. .

and after clicking on



The **Reset** clears the JPassword field.

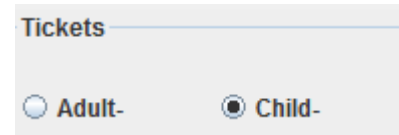
Upon entering the **correct** passcode it should clear the following components:



Note the following:

- The movie rating radio buttons should **ALL** be unchecked.

- The Adult and Child prices are cleared (**NOT** the radio buttons), i.e.



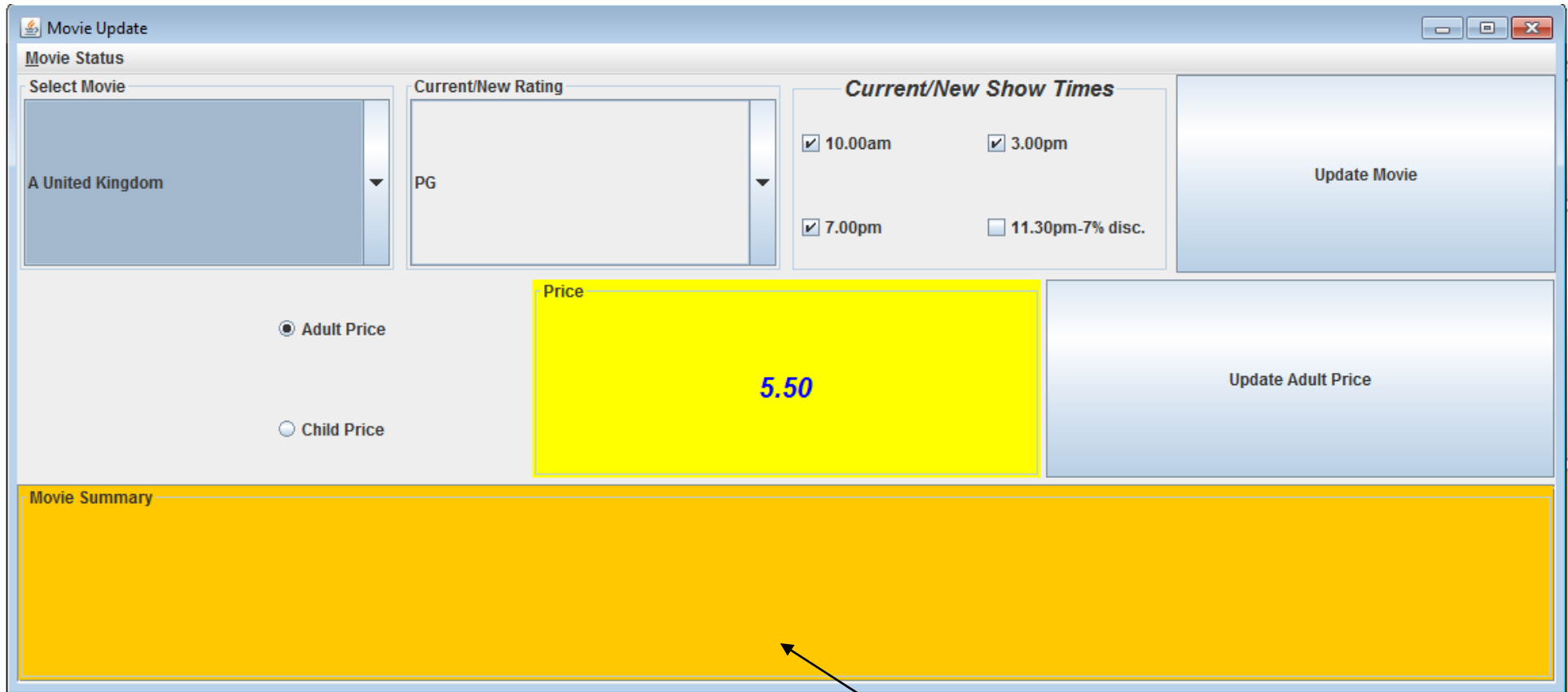
The image shows a screenshot of a 'Tickets' form. The title 'Tickets' is at the top left. Below it, there are two radio button options: 'Adult-' and 'Child-'. The 'Adult-' option has an unchecked radio button, and the 'Child-' option also has an unchecked radio button. The form is a light gray box with a blue border.

then the following **Movie Update** window appears.

Movie 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**).



The screenshot shows a Java Swing window titled "Movie Update". The window has a standard title bar with minimize, maximize, and close buttons. The main content area is divided into several sections:

- Movie Status**: A section at the top left containing a "Select Movie" dropdown menu with "A United Kingdom" selected.
- Current/New Rating**: A dropdown menu showing "PG".
- Current/New Show Times**: A section with four checkboxes: "10.00am" (checked), "3.00pm" (checked), "7.00pm" (checked), and "11.30pm-7% disc." (unchecked).
- Update Movie**: A button located to the right of the show times section.
- Price**: A yellow rectangular area in the center displaying the value "5.50".
- Update Adult Price**: A button located to the right of the price area.
- Movie Summary**: A large yellow rectangular area at the bottom of the window, intended for a JTextArea with a scrollbar.
- Adult Price / Child Price**: Two radio buttons on the left side, with "Adult Price" selected.

Movie JTextArea,
with scrollbar.
Note, the font is
**Helvetica, bolded,
italics at 14pt**

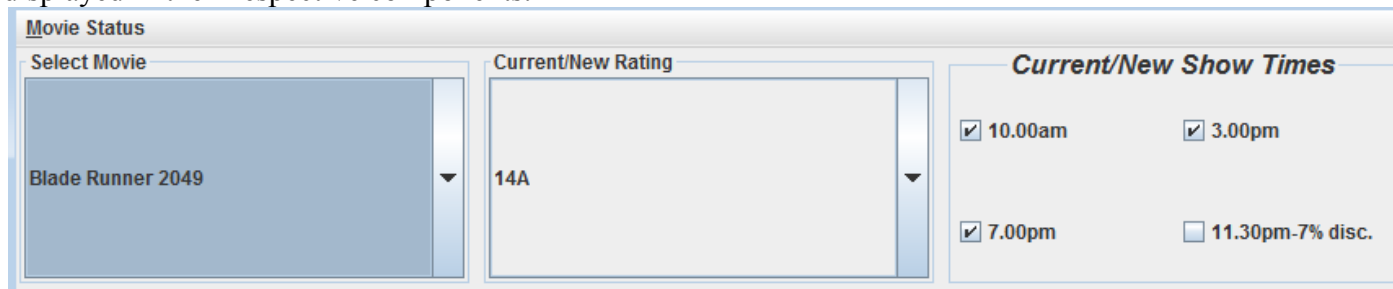
Functionality

Here the administrator can change the **rating and available show times** for a movie. The **prices** can also be changed. When the Update screen is **first run**, all the available shows are displayed in the **Select Movie JComboBox**, with the **first entry already selected**. The corresponding show times for that movie will be displayed by which show time checkbox is selected. The corresponding rating will also be selected in the Current/New Rating JComboBox.

Note that **changes made here should of course be reflected in the applet.**

Changing Rating and Show Times

Here the administrator can change the rating and show times of a movie, i.e. when the admin selected **Blade Runner 2049**, the current movie rating and show times are displayed in their respective components.



The screenshot shows a window titled "Movie Status". It contains three main sections: "Select Movie", "Current/New Rating", and "Current/New Show Times". The "Select Movie" section has a dropdown menu with "Blade Runner 2049" selected. The "Current/New Rating" section has a dropdown menu with "14A" selected. The "Current/New Show Times" section has four checkboxes: "10.00am" (checked), "3.00pm" (checked), "7.00pm" (checked), and "11.30pm-7% disc." (unchecked).

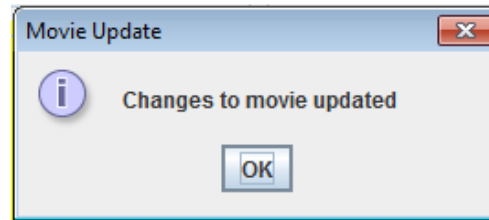
Now the admin will change it to the following:



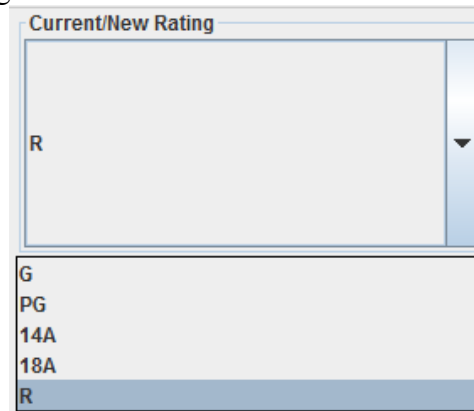
The screenshot shows a window titled "Movie Update". It contains three main sections: "Select Movie", "Current/New Rating", and "Current/New Show Times". The "Select Movie" section has a dropdown menu with "Blade Runner 2049" selected. The "Current/New Rating" section has a dropdown menu with "R" selected. The "Current/New Show Times" section has four checkboxes: "10.00am" (unchecked), "3.00pm" (unchecked), "7.00pm" (unchecked), and "11.30pm-7% disc." (checked).



To **update** the changes for this movie, the admin **needs** to click the button (otherwise **NO changes are made**), after which the following dialog box should appear:



The **Current/New JComboBox** will have the following selections:




Change Prices

Here the admin can change the Adult and Child prices for ALL Movies in the text box.



The screenshot shows a web form titled "Change Prices". On the left, there are two radio buttons: "Adult Price" (which is selected) and "Child Price". To the right of these buttons is a large yellow rectangular text box labeled "Price" at the top, containing the value "5.50" in blue text. To the right of the yellow box is a blue button labeled "Update Adult Price".

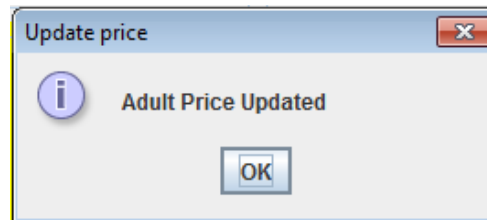
If the admin wants to change the **Adult** price, then he or she needs to click the  **Adult Price** (note by default this should already be selected).



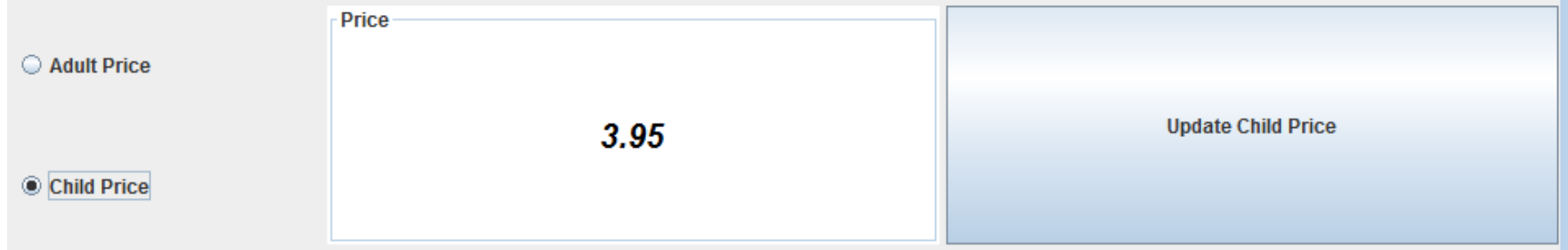
This is a close-up of the "Update Adult Price" button, which is a blue rectangular button with the text "Update Adult Price" in the center.

Note also the **Update** button label will now say “Update **Adult** Price”, i.e.

The textbox colours for adult price is as shown above. Again, no changes are made until the admin clicks the corresponding update button, after which the following dialog box appears:



If the admin now wishes to change the **child** price, then upon clicking on , then the following appears:



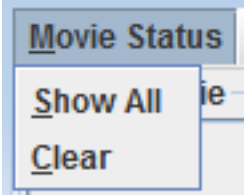
The form consists of a left sidebar with two radio buttons: 'Adult Price' (unselected) and 'Child Price' (selected). The 'Child Price' button is highlighted with a blue border. To the right of the sidebar is a large white rectangular area labeled 'Price' at the top left, containing the value '3.95' in a large, bold, black font. To the right of this area is a blue rectangular button labeled 'Update Child Price'.

Note the **colour** change for the Child Price textbox, and also the Update button now says “Update **Child** Price”.

As stated earlier for the Adult Price, no changes will be made unless the user clicks the corresponding Update button, after which the following appears:

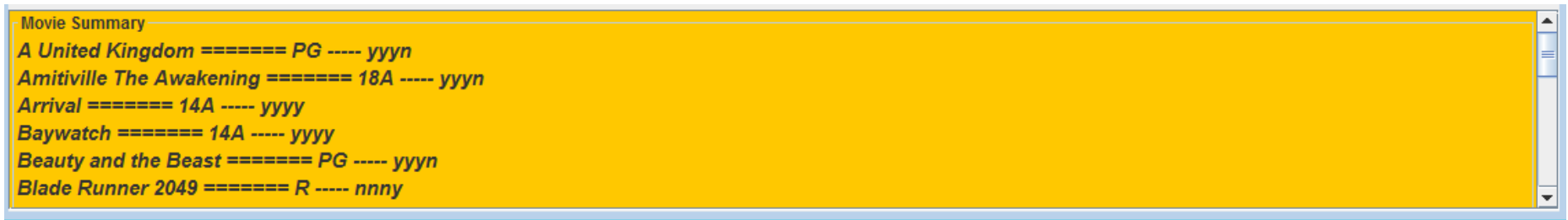


Movie Status Description Menu



This should have the above selections and **mnemonics**.

- If the administrator selects **Show All**, then it should display all the movies and their respective ratings and show times (indicated by “y” or “n”, so “yyyn” means yes for **10.00am, 3.00pm, 7.00pm but no for 11.30pm**) in the **Movie Summary JTextArea box** below, i.e:



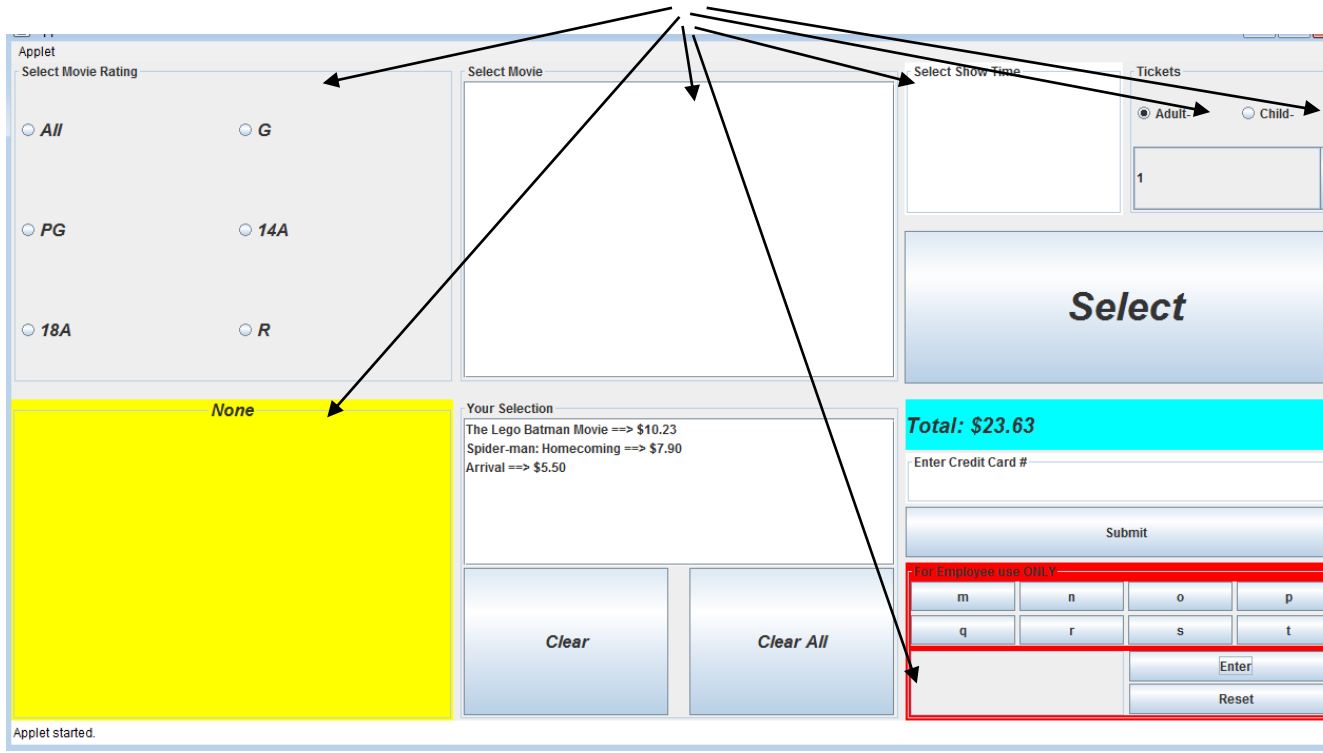
Note, make sure to **clear** the JTextArea box **before** you display again.

- If the user selects **Clear**, then it simply clears Movie Summary JTextArea.

Exiting Movie Update

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

Note: It is **important** that when the admin exits from this Movie Update screen and returns back to the main JApplet, the applet is as shown on page 16, with the indicated GUI components being **cleared**, i.e.:

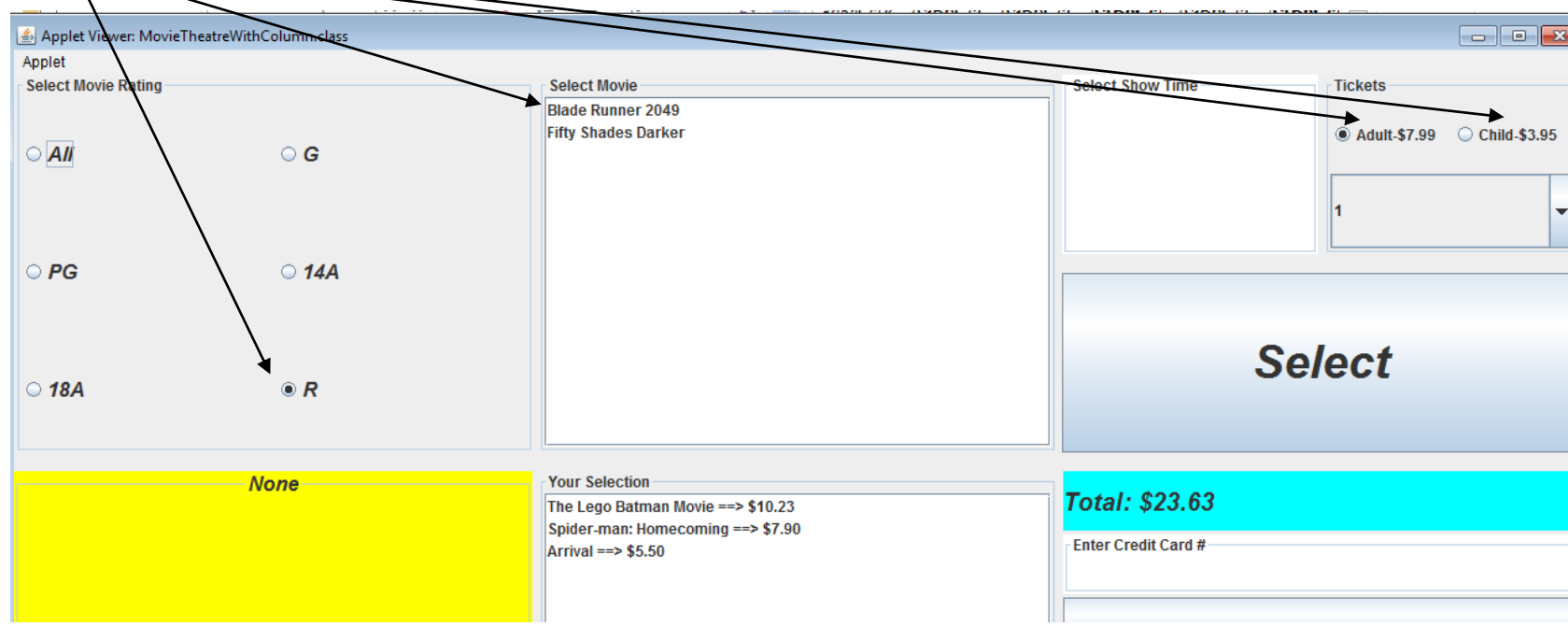


The screenshot shows the 'Movie Update' applet interface. Arrows point from a common point above the applet to several GUI components:

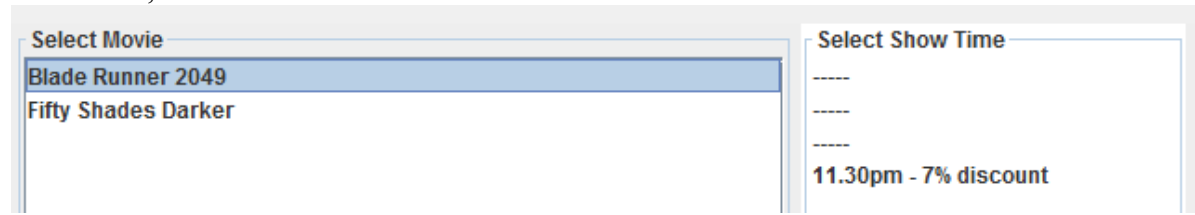
- Select Movie Rating:** Radio buttons for All, G, PG, 14A, 18A, and R.
- Select Movie:** A large empty rectangular box.
- Select Show Time:** A large empty rectangular box.
- Tickets:** Radio buttons for Adult and Child, and a numeric input field showing '1'.
- Select:** A large blue button.
- Your Selection:** A text area displaying:
The Lego Batman Movie ==> \$10.23
Spider-man: Homecoming ==> \$7.90
Arrival ==> \$5.50
- Clear:** A button below the 'Your Selection' text area.
- Clear All:** A button to the right of the 'Clear' button.
- Total: \$23.63:** A cyan-colored box displaying the total price.
- Enter Credit Card #:** A text input field.
- Submit:** A button below the credit card input field.
- For Employee use ONLY:** A red-bordered section containing a numeric keypad (0-9), an 'Enter' button, and a 'Reset' button.

At the bottom left, a status bar reads: 'Applet started.'

Now, when you are back at the JApplet, as soon as you click on one of the Movie Rating radiobuttons, it should now display the updated prices and movies, i.e.:



And if you click on Blade Runner 2019, the show times should be:



Finally, create an **HTML file** (call it **MovieTheatre.html**) to hold this applet. The **background** should be a sky background utilising the sky.gif file.

Your Name Movie Theatre

Select Movie Rating

☒ **All**

☐ **G**

☐ **PG**

☐ **14A**

☐ **18A**

☐ **R**

Select Movie

A United Kingdom

Amitville The Awakening

Arrival

Baywatch

Beauty and the Beast

Blade Runner 2049

Blazing Samurai

Fifty Shades Darker

Furious 8: The Fate of the Furious

Ghost in the Shell

Guardians of the Galaxy: Vol 2

John Wick Chapter 2

Justice League

Logan

Power Rangers

Rogue One: A Star Wars Story

Spider-man: Homecoming

Star Wars Episode VIII

Select Show Time

10.00am

3.00pm

7.00pm


Tickets

☒ Adult-\$5.50 ☐ Child-\$3.95

1

Select

Rating: PG



Your Selection

Clear **Clear All**

Total:

Enter Credit Card #

Submit

For Employee use ONLY:

m	n	o	p
q	r	s	t
		Enter	
		Reset	

Your Name Movie Theatre

Note the top part
you **actual name**.

Your Name

is from **the HTML file**. Please replace with

Classes

You must create at least **2 classes** to start off with. These classes are in “**MovieInfo.java**” which will be given to you.

What to Hand in

1. Front cover page with your name, course, assignment number, instructor’s name and due date
2. Hardcopy of the program listing
3. Zip up and Save as **csis1275_SecNumberAssign4W2017YourName.zip** and either File Submission (Blackboard) or USB for the .java **source** files, any picture files and the HTML file.
4. The **passcode** for the **Movie Update window**.

**MARKS WILL BE LOST IF ANY OF THE ABOVE IS NOT MET OR IF THIS IS NOT YOUR OWN WORK
OR IF THE DISK IS NOT READABLE OR PROGRAM NOT COMPLIABLE.**