JavaFX HBox & Accordion

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Java is a popular programming language that includes a broad range of capabilities that allow for an expansive developing experience. The full range of its abilities and compatible integration with other programming languages help create rich, immersive user interfaces. An extension of Java is JavaFX. JavaFX is “a platform for GUI programming” for developers that make GUI applications (Liang, 2019, sect 14.2). These applications can be programmed to be functional for “touch-enabled devices, animation support, video, and audio playback, can run on an application or web browser” and are easier to learn for beginners in Java programming (Liang, 2019, sect 14.2). Within JavaFX, the HBox and Accordion are components that prove to be helpful tools.

JavaFX proves to be a handy toolkit to utilize when programming and seeking a polished feel and look. It is a versatile and powerful platform that can run on multiple operating systems. JavaFX was created to replace the previous GUI platforms, Java Swing and Advanced Windowing Tool Kit (GeeksForGeeks, 2021). Since JavaFX is a replacement for Swing and AWT, it inherited the same perks that were available through those preceding platforms. Since JavaFX is an extension of Java, it has access to all Java libraries that can be implemented, and any “Java editors or IDE’s” can be used “to write, compile, run, debug, and package their JavaFX application (GeeksForGeeks, 2021, sect. Features of JavaFX). JavaFX can be paired with the markup language FXML, which is how the Scene Builder tool can be reached (GeeksForGeeks, 2021). Scene Builder within JavaFX literally sets a scene for a program. According to Oracle (2020), Scene Builder in JavaFX “is a visual layout tool that lets users quickly design JavaFX application user interfaces without coding.

In JavaFX, panes, groups, UI controls, and shapes are all considered subtypes of Node (Liang, 2019, sect 14.4). According to Liang (2019), “a node is a visual component such as a shape, an image view, a UI control, a group, or a pane” (sect. 14.4). A control, group, or a pane can house a scene (Liang, 2019, sect 14.4).

One feature of JavaFX is the HBox class. The HBox class is an extension of the Pane class (GeeksforGeeks, 2018). In JavaFX, the HBox class makes it so the children in a pane are aligned in horizontal columns (GeeksforGeeks, 2018). This is done by using a constructor class of HBox() or HBox(doubles) (GeeksforGeeks, 2018). Other methods can be called with HBox, like “getAlignment(), getSpacing(), setAlignment(Pos value), and getChildren()” (GeeksforGeeks, 2018).

Another feature of JavaFX is the accordion. According to Tutorials Point (2024), an accordion in JavaFX is a “container for one or more title panels.” There can be multiple title panels, but only one can be opened at a time (GeeksforGeeks, 2018). To use an accordion, start by creating an accordion class.

The JavaFX framework is well-versed in providing visual stimuli to users.

Thanks to JavaFX's wide range of features, programming can become a better environment for users and developers alike. These components are designed for improved interaction with its users. Components like HBox and Accordion are useful for maximizing some of JavaFX’s wide-ranging potential.

**References**

GeeksForGeeks. (2021, October 5). *JavaFX Tutorial*. GeeksforGeeks. https://www.geeksforgeeks.org/javafx-tutorial/

GeeksforGeeks. (2018, September 7). *JavaFX | HBox Class*. GeeksforGeeks. https://www.geeksforgeeks.org/javafx-hbox-class/

Liang, Y. D. (2019). *Introduction to Java programming and data structures: comprehensive version*. Pearson. https://plus.pearson.com/home?utm\_source=ereader

Oracle. (2020). *JavaFX Scene Builder Information*. Oracle.com. <https://www.oracle.com/java/technologies/javase/javafxscenebuilder-info.html>

Tutorials Point. (2024). *JavaFX - Accordion*. Tutorialspoint.com. https://www.tutorialspoint.com/javafx/javafx\_accordion.htm

**Assignment Requirements and Grading:**

* This assignment is due by **Sunday, 11:59 p.m., CST**.
* Add the necessary documentation as described in [Documentation Requirements](https://cyberactive.bellevue.edu/bbcswebdav/xid-99483471_4) [Click for more options](https://cyberactive.bellevue.edu/webapps/blackboard/content/listContent.jsp?course_id=_534132_1&content_id=_16476581_1&mode=reset#contextMenu) .
* Submit your .java file(s) by clicking on the Assignment Link above, then scroll down to the Upload Files section and click on Browse Local Files. Select your assignment file(s), add any links as appropriate, add the URL to your GitHub repository in the comments area, then click on Submit.
* Create (if you haven't already) a directory in CSD-402 named module-11.
* Save your java file(s) to your CSD/CSD-402/module-11 directory. Stage, commit and then push the file(s) to your GitHub repository.
  + Click on the following link for instructions: [GitHub Stage, Commit, and Push.pdf.](https://cyberactive.bellevue.edu/bbcswebdav/xid-101703982_4) [Click for more options](https://cyberactive.bellevue.edu/webapps/blackboard/content/listContent.jsp?course_id=_534132_1&content_id=_16476581_1&mode=reset#contextMenu)
* To view or print the grading rubric for this assignment, click on the following link: [Programming Rubric](https://content.bellevue.edu/cst/csd/rubricprogrammingv2.pdf).