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CSD 402

M11: Programming Assignment

JavaFX Research Topics

While researching my two topics, I chose JavaFX HBox and JavaFX VBox. I found two great examples of my topics and videos explaining the documentation. The examples will be briefly described with key features and a highlighted definition of the two topics. At the end of my research, you should determine the difference between Hbox and Vbox while using the open-source application JavaFX. All sources will be included on the final page of this paper, in addition to the websites where you can download JavaFX to utilize the application platform with any JDK you may be using to help run your Java code.

JavaFX is an open-source application that allows programmers to create platforms for desktop, mobile, and embedded systems built on Java. This toolkit helps companies and individuals produce modern applications by providing essential tools to develop visual client applications. During this project, I downloaded JavaFX files from their website (https://openjfx.io/), extracted the SDK to my Java file, and configured how I ran my Java file with the JavaFX SDK file. This process took me some time to correct, as I had trouble adding the SDK file into the proper folder, but it worked efficiently once completed. You can create JavaFX applications once the JavaFX SDK file is configured on your JDK program.

The key features of JavaFX HBox are arranging the child nodes in a single horizontal row by utilizing spacing, padding, alignment, hgrow, fillheight, and margins. I added two buttons (Play and Stop) to my code with a text field. I take the same constructor that takes an argument for the amount of spacing between components within the layout manager, as in the video, by adding 10 pixels to each button and text field. If you were to change the application's window size with your cursor, the buttons and text field would not change with it and would stay consistently the same. In the video example, you will see that the person voicing over their application allows each button separately to have their margin, spacing, and alignment. Still, I choose to include all three of my buttons and text fields to be aligned with each other. Separating each string of code underneath the button or text field arguments, you can play with that specific button or text field's cosmetics. Hgrow allows the programmer to set each child node to a preferred spacing by adjusting the Priority to ALWAYS so that the maximum or minimum width of the horizontal row will now grow unless specified. Lastly, I will align the children's center-left and allow my text field to grow and fill the horizontal space.

The key features of JavaFX VBox are stacking its child nodes into a vertical column with custom spacing, alignment, margins, and growth. Almost the same code as the last example, except I use different values for the spacing, inner padding, the alignment is centered, and the margins are closer together. The difference between the child node vgrow is the priority classes we can use, like ALWAYS, SOMETIMES, and NEVER, which set the preference of growing the nodes of your VBox to fill any available space. I had set both my VBox and HBox to ALWAYS.

In conclusion, HBox and VBox are wonderful tools with JavaFX to create a layout panel for UI design by creating a horizontal or vertical alignment. I covered how both are aligned and how a programmer can customize the buttons or text field to their preference, or fill the available space if the end-user adjusts the application window. Also, I shared some troubleshooting issues but provided clear guidance on downloading JavaFX onto your JDK. I found many videos and resources for these two topics that can help any programmer create key layout properties for both buttons and text fields for the open-source application they are writing. The video content helped me the most by visualizing how each made their JavaFX programs with two different JDK applications. The HBox video used a common JDK program that reads the script and outputs the application. In contrast, the VBox video uses a program that allows more interactive customization instead of adjusting the code associated with each change. It was clever to see how some programs will create a user-friendly way to become a master programmer.

References

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