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Milestone 3

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The artifact chosen is from my CS-250 Software Development Lifecycle Course, created in September 2021. During the course, I worked on a top five vacation destinations slide show that was created using java; the code itself is a simple java swing application that creates a slideshow of images with brief descriptions.

I selected this artifact as it allowed me to incorporate enhancements in both the dataset and algorithm categories, allowing me to showcase my skill in both categories. Specifically, the original artifacts had no algorithm in place and merely had the entire slide show on one page. One of my enhancements incorporated the initComponent() feature, which allows for initializing graphical user interface (GUI) components, including setting up panels, buttons, labels, and attributes. It also creates a loop to add slide and text labels to the pane and textPane panels. The following enhancement was also made to the original artifact, goPrevious(): This method is called when clicking the "Previous" button. It uses the CardLayout object card to move to the previous slide and cardText to move to the previous text description.

goNext(): This method is called when the "Next" button is clicked. It uses the CardLayout object card to move to the next slide and cardText to the following text description. getResizeIcon(int i): This method returns a string containing an HTML <img> tag that displays an image stored in the project's resources folder. The i parameter specifies which image to display. The method constructs the appropriate string based on the value of i. getTextDescription(int i): This method returns a string containing a text description of a slide based on the value of i. It is not currently present in my given code, but it is implied to exist and be used in the initComponent() method.

Regarding the data structure enhancements made, two data structures were implemented into the enhanced artifact the getResizeIcon and getTextDescription methods. The getResizeIcon method stores image and image sizing data and retrieves the image for a given slide number. It uses if-else statements to determine which image to display based on the slide number. The getTextDescription method stores text descriptions for each slide and is used to retrieve the text for a given slide number. It also uses if-else statements to determine which text to display based on the slide number. Both methods are called in a for loop in the initComponent method, where they populate the slide and text panels with the appropriate content for each slide. In my previous version, I needed to correctly utilize these data structures or algorithms, which resulted in a weak presentation lacking multiple slides and UI capabilities.

This artifact meets all course objectives in module one; based on the suggested plan, I aim to further refine this program, making enhancements in each category due to limited access to course material while traveling.

Enhancing and modifying my java slideshow regarding the algorithms and data structures to improve its functionality and performance was more complex than I had thought. One of the critical challenges in the process was selecting suitable algorithms and data structures for a given task. Initially, I thought I would try to implement some robust sorting algorithm but opted out due to time constraints. Another challenge I faced was optimizing the algorithms and data structures to ensure the program ran as designed. As I navigated through these challenges, I learned much about algorithms and data structures and how they can be applied in different contexts. For one example, I learned a bit about graph algorithms and how they can be used to optimize image transitions, this would have been a great addition to my slideshow. Enhancing and modifying my slideshow was an excellent opportunity to learn more about algorithms and data structures and how they can be applied in practical programming scenarios. Overcoming the challenges and implementing new features and improvements allowed me to develop my skills and knowledge as a programmer and create a more effective and engaging user experience for my stakeholders and targeted audience.