Peyton Wolf

4/12/2025

Cst-250 Programming in C# ||

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Activity 4

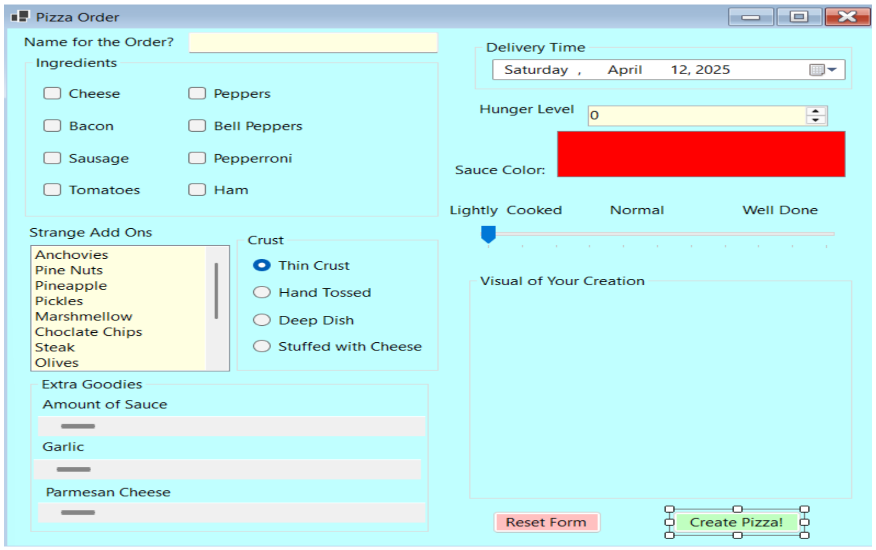
## ***Loom Videos***

https://www.loom.com/share/6aed66a4067b44b9aa49a85e3d9c5941?sid=a1fbe514-db66-48a5-be95-3a12b4649729

## ***GitHub Videos***

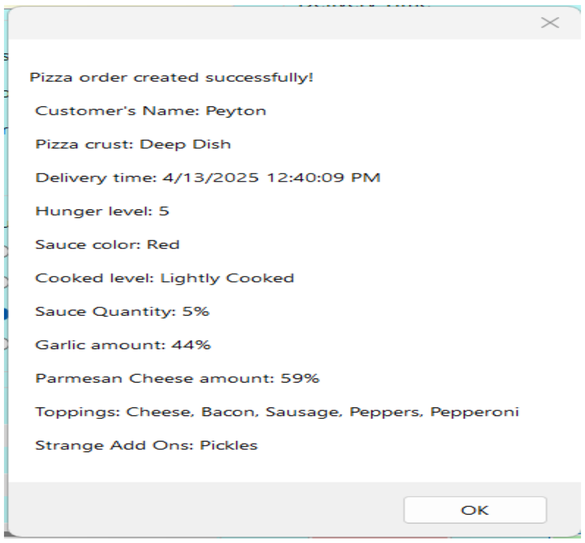
https://github.com/KnoxHighStax/CST250/tree/main/Activity4/PizzaOrder

## ***Creating Pizza Ordering Form***



In this screenshot we are demonstrating the GUI creation of the Pizza Ordering application. Here we have added a variety of tools (labels, list boxes, group boxes, radio buttons, track bars, H-Scrollers, and much more). This will be the main page that any user will be seeing and interacting with to create the pizza that they want. The end goal for this will be to use back-end logic with all these front-end tools to create and display a visual representation of the pizza a user is looking to order.

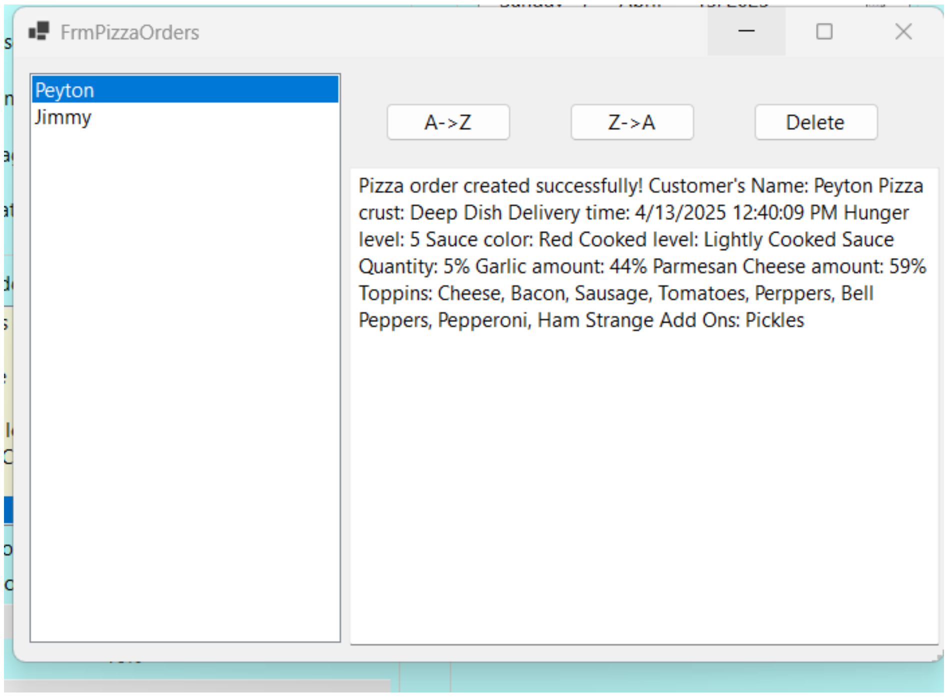
## ***Create Pizza Button Status Message***



```
Pizza order created successfully!
 Customer's Name: Peyton
 Pizza crust: Deep Dish
 Delivery time: 4/13/2025 12:40:09 PM
 Hunger level: 5
 Sauce color: Red
 Cooked level: Lightly Cooked
 Sauce Quantity: 5%
 Garlic amount: 44%
 Parmesan Cheese amount: 59%
 Toppings: Cheese, Bacon, Sausage, Peppers, Pepperoni
 Strange Add Ons: Pickles
```

In this screenshot we are demonstrating how we have added functionality to the "Create Pizza!" button to create a new instance on a Pizza for the Orders. We built various status summary messages to be displayed for the user to help make it very easy to view everything that they have input for their order. The idea with this was to give the user essentially a type of "receipt" for the PizzaOrder that was just placed.

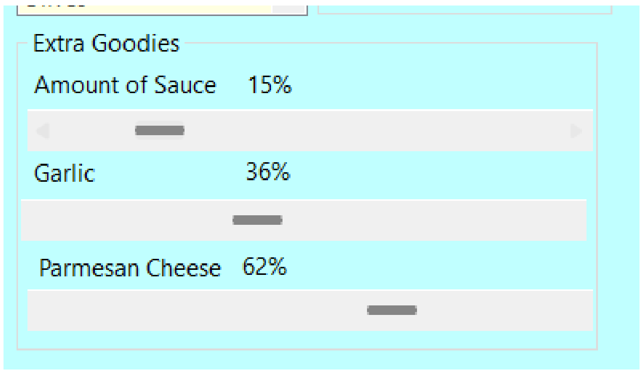
***Pizza List Form Showing List of Orders***



```
Pizza order created successfully! Customer's Name: Peyton Pizza
crust: Deep Dish Delivery time: 4/13/2025 12:40:09 PM Hunger
level: 5 Sauce color: Red Cooked level: Lightly Cooked Sauce
Quantity: 5% Garlic amount: 44% Parmesan Cheese amount: 59%
Toppins: Cheese, Bacon, Sausage, Tomatoes, Perppers, Bell
Peppers, Pepperoni, Ham Strange Add Ons: Pickles
```

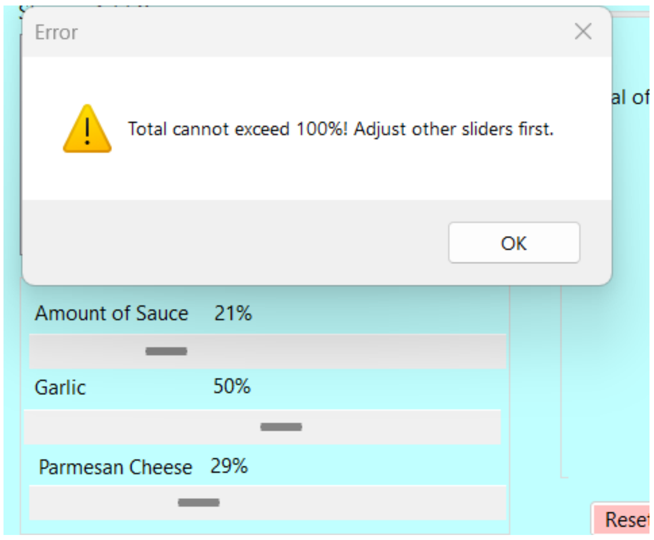
In this screenshot we have created a second form, which will generate automatically when the “Create Pizza!” button has been clicked on. The backend logic when clicked, will start by creating a new pizza order then gathering everything that has been input by the user; to then be able to store the data and add them to a new list on FrmPizzaorders in the listbox “listPizzas”. It will then display a confirmation message for the user to see and be able to verify to then open the FrmPizzaOrders form with the newly created pizza order. The name for the order will be displayed and the user can select the item and then the selectedItem being Name will display the order detail in the txtPizzaorders.

***Dynamic Labels on Sliders***



In this screenshot we are demonstrating how we have implemented dynamic labels for the horizontal sliders for ensuring the sauce quantity, garlic quantity and the parmesan quantity values are displayed right next to their respective labels. We start by having the initial values of the sliders set to 0 and the corresponding labels updated to display these values with a percentage sign, essentially showing how much extra of these items they would like. We have event handlers that are attached to the scroll events of each slider, they will dynamically update the label text whenever teh silder moves, ensuring the displayed percentage reflects the current slider position.

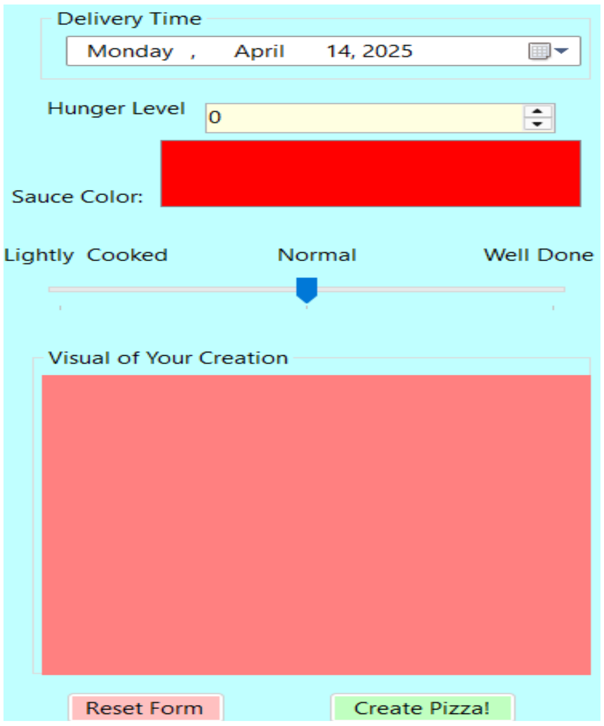
## ***Slider Limits***


Error

Total cannot exceed 100%! Adjust other sliders first.

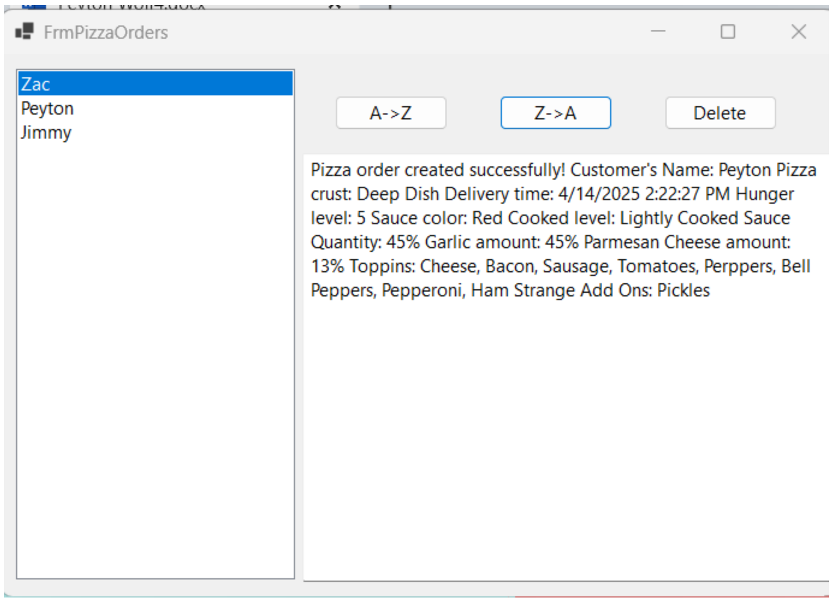
For the horizontal slides for sauce garlic, and parmesan cheese quantities will now no longer exceed a combined value of 100%. When the user adjusts a slider, the system checks the new total in real-time before applying the changes. If moving a slider would push the total over 100%, it will block the change and revert the slider to its previous position and give the user an error message to confirm. This will help in preventing multiple popups or lockouts, but we instead retain full control to change the values freely.

## ***Color Chooser***



In this screenshot we are demonstrating the ability for a user to be able to change the color of the sauce. The color chooser is triggered by clicking in the “listColor” control. When clicked, a standard Windows color dialog appears, allowing the user to select any color. When the color is confirmed, the selected color immediately updates the “pictureBoxPizza” background, providing clear confirmation. The color will be saved as a named value or RGB string to the current “PizzaOrder” object’s “SauceColor” property. The dialog will only appear once per click, and no color will be shown in “pictureBoxPizza” until the first selection has been made.

## ***<u>Sortable List</u>***



Pizza order created successfully! Customer's Name: Peyton Pizza crust: Deep Dish Delivery time: 4/14/2025 2:22:27 PM Hunger level: 5 Sauce color: Red Cooked level: Lightly Cooked Sauce Quantity: 45% Garlic amount: 45% Parmesan Cheese amount: 13% Toppins: Cheese, Bacon, Sausage, Tomatoes, Perppers, Bell Peppers, Pepperoni, Ham Strange Add Ons: Pickles

In the screenshot above we are demonstrating two sorting methods for a list of pizzas. The “btnZtoA_Click” methos sorts the list in descending order by the pizza names using “OrderByDescending(p => p.Name), while the “btnAtoZ_Click” method sorts the list in ascending order using “OrderBy(p => p.Name). both methods convert teh sorted result back to a list with “ToList()” and update the data source to reflect the changes.

1. What was challenging?
   I would have to say that the most challenging aspect of this project was ensuring proper data binding and synchronization between the UI and the underlying data structures, particularly when sorting or deleting orders. Managing the “BindingSource” and keeping the “List<PizzaOrder>” updated required careful attention to avoid inconsistencies. Additionally, validating slider inputs to ensure the combined sauce, garlic, and parmesan values didn’t exceed 100%.
2. What did you learn?
   Through this project I have leanred how to effectively use Windows Forms controls liek “ListBox, TrackBar, and HScrollBar”, as well as how to implement data binding with “BindingSource” for dynamic updates. I also gained experience in structing a multi-form application and using dialog boxes for user feedback.
3. How would you improve on the project?
   I have to say a way to improve this project would be to refactor the code and reduce any redundancies that we may have. Adding persistence would make the application more practical. A more dynamic UI like real-time previews of pizza customization could also improve user experience.

4. How can you use what you learned on the job?
   The skills learned here are highly transferable to real-world scenarios. Data binding and Ui synchronization are essential for enterprise applications, while input validation and event handling are critical for robust software. The experience with “IComparable” is collections can be applied to sorting/filtering data in business applications, and the multi-form navigation pattern is common in workflow-based systems.