Pizza Maker WPF Application

# **Explanation**

The Pizza Maker application is a program that allows a user to create a custom pizza with multiple ingredients from putting the pizza together to cooking the pizza and finalizing the pizza for pickup.

The application has three main parts that contribute to the whole: the pizza states, the ingredients, and the pizza objects. The pizza states handle the changing of the pizza as it is built and cooked. The ingredients are objects that can be added to the pizza object. The pizza objects are the glue that holds the ingredients and state information as well as a template to calculate the total cost of the pizza when all is said and done.

The WPF application attached is a crude, yet effective, way to test some of the functionality of the program. The window has 3 buttons, and each button tests a different design pattern in the program. The create button creates the pizza for the user. The add ingredients button adds the ingredients for a basic pepperoni pizza, and the process button moves the pizza through the different states from unfinished to cooked and then final.

NOTE: The intended application features are not fully implemented and require more sophisticated work with the wpf side of the project.

# Design Patterns

The three design patterns I chose to use in this project are the state, template, and factory patterns. The factory pattern is implemented into the creation of ingredients and pizza objects with the use of two separate factory classes. The state pattern is implemented to track the stage of the pizza making process that the pizza object is in. The template pattern is implemented in the pizza objects and handles the calculation of the cost of the pizza object.

# **Possible Alternative**

A possible alternative to using the template pattern and factory pattern could be the use of the decorator pattern to wrap the ingredients of the pizza onto the pizza object. In place of the state pattern, an observer pattern could have been implemented to update the pizza when it is moved through the making process.