The degree of success with this project is about 100%. The main method that I take to handle this project is that I learn how to run the program in multiple thread process , how to use mutex and condition variable to safely manipulate the elements like space count, in pointer, serial count, donut count, out pointer. Then I try to figure out how to utilize thread creating function, and how to count the serial number of the donut of each flavor, how to use “in” and “out” pointer in ring buffer, how to print out the donuts serial number consumed by consumer etc. After I finish the main frame of my project, I finish the detailed code of this program.

I experiment with the relationship between the queue size and deadlock probability, the relationship between the dozens collected and deadlock probability. I find something interesting, the deadlock probability keeps decreasing when queue size increases, and the distribution of my result is linear, the 50% deadlock queue size is 600. When the dozens collected range from 100 to 300 gradually, the deadlock probability keeps increasing, the distribution of my results is also linear.

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