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12/3/20

CST 317 Project description

Our primary objective for this program is to write successful threads that inserts no more than 20 customers in the waiting queue in accompaniment with halting generating customers if the queue is full to prevent additional customers from entering the queue. We are also trying to accomplish creating messages that clearly indicates the status of the operation i.e("There are now ",..., "customers in line."), etc. In addition, we have also attempted to ensure that in regards for the counter, one teller is assigned to one customer and vice versa. With the code at hand, we mainly divided the program into numerous significant operations that are intended to accomplish multiple goals. The goals are; generate separate threads (one for the teller and the other for the customer); creating a new buffer to assist with threads; create efficient traffic that makes certain that only a fixed number of customers are in queue, generated, and are assisted by tellers.

We will start explaining the buffer process (process \_data function). While creating the buffer class, we divided it into two parts using boolean values to indicate if the buffer is empty or not(line 23-43). In this case the program, with the addition of boolean values, determines whether the buffer is empty and available for additional customers, or is not empty and only sends customers to an available empty counter.Line 37 displays which counter is helping a specific customer that was once in the line.

Another function of the buffer process is how the system let’s the user know when all of the customers have been serviced at any available counter. The print statement advises the system that all the counters are closed after there are no remaining customers. Next, the buffer class uses the exitFlag variable to notify the threads for when it’s time to exit "exitFlag = 1" (line 78). Once all the threads are completed, the final print statement notifies the system that “All counters are closed. Please come back tomorrow.”

**Roles**

Malik - Project description

Alan - Source code writer

James - Revisions, screenshots



