

# Producer/Consumer Simulation Program

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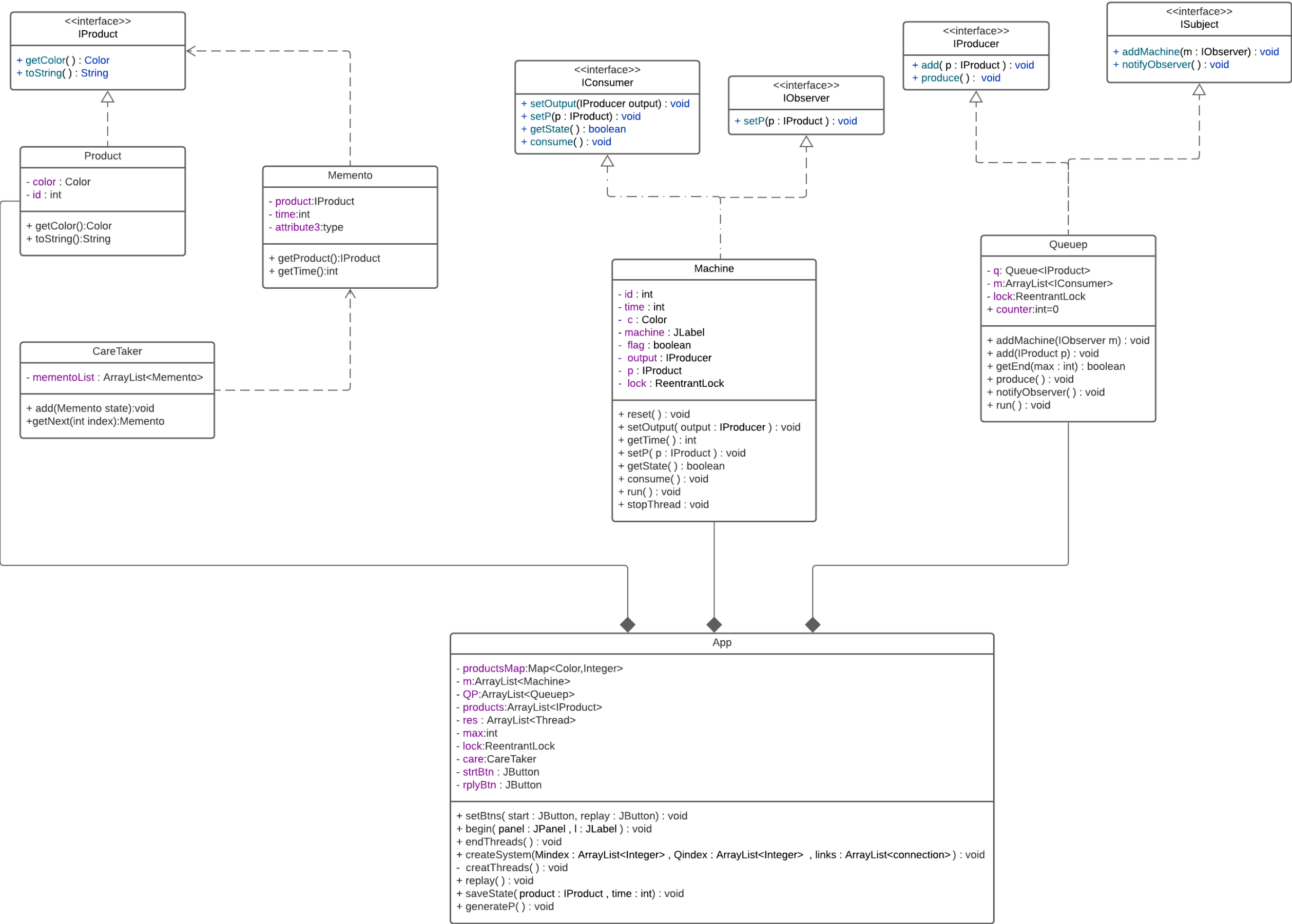
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## How to run project:

# UML class diagram:



# Design patterns:

## Producer/Consumer DP

- **Producer(queue):** add products to queue. Production and consumption of objects are asynchronous.
- **Consumer(machine):** holds the produce products from the Queue, If the Queue is empty it waits.

## Observer DP

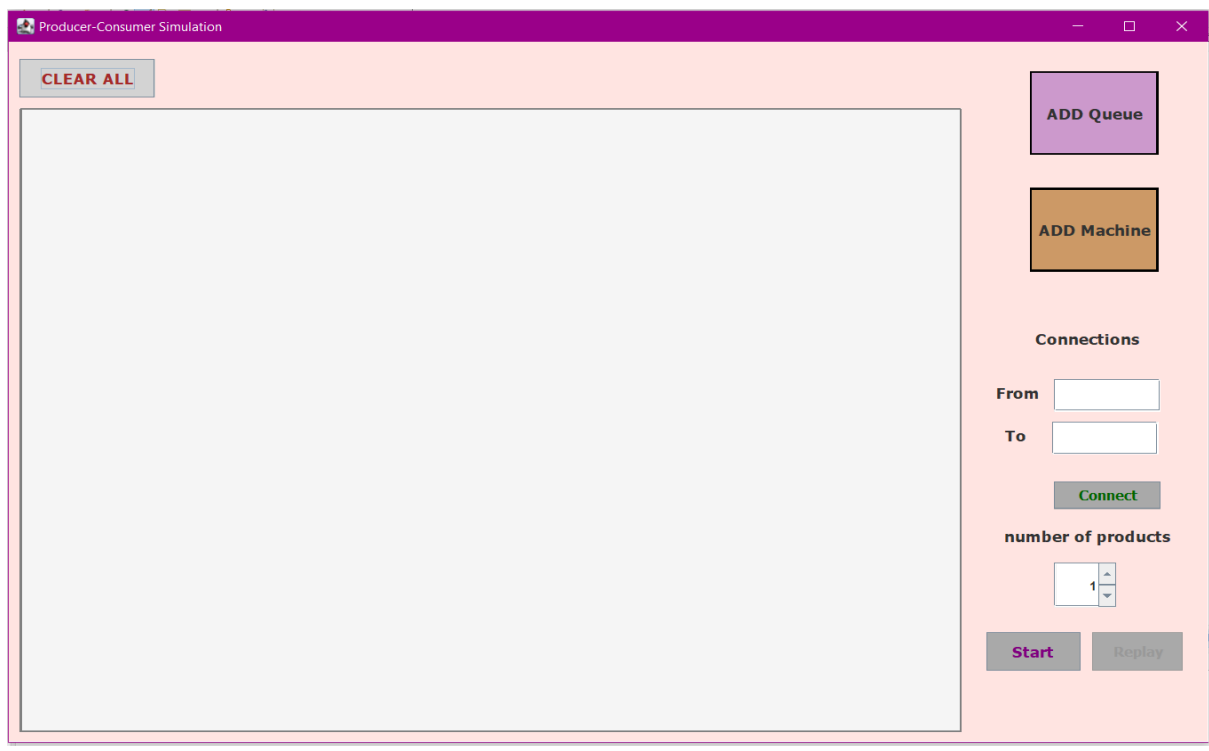
- *Each machine has a random service time and can serve one product at a time. Once completed, check the queue if waiting products need to be consumed.*

## Snapshot DP

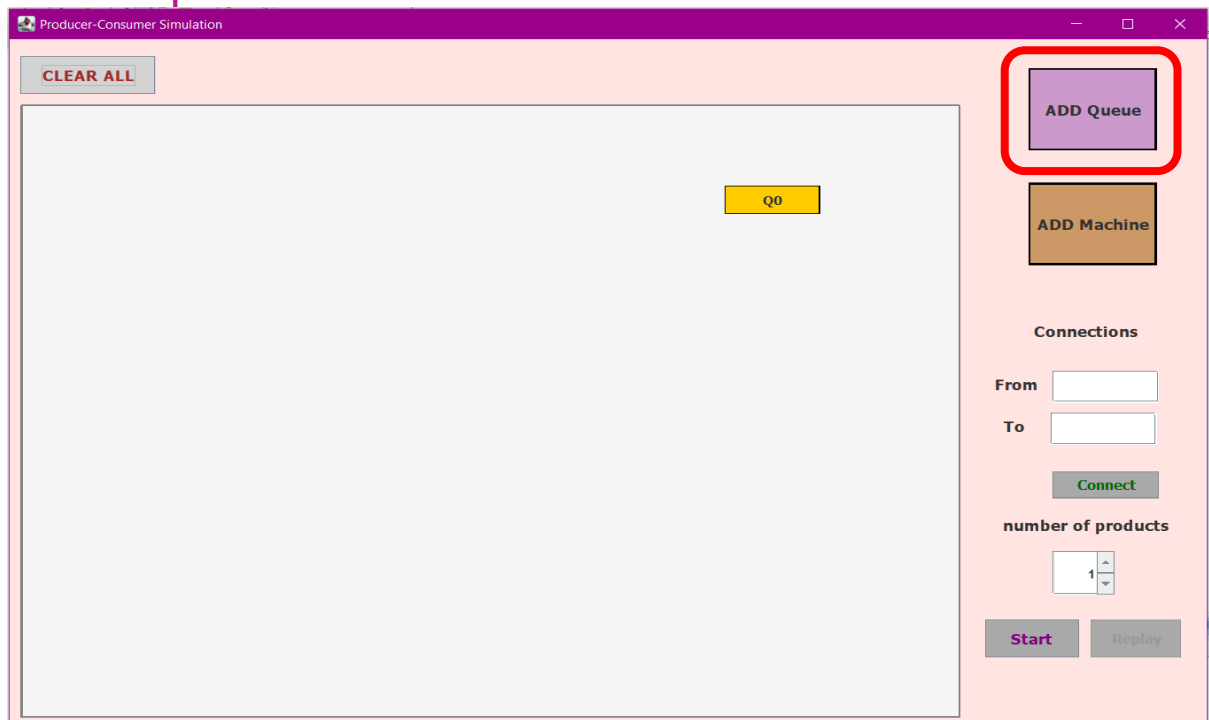
- *After any simulation ends, the user can start a new simulation or replay the previous simulation.*

# Sample runs:

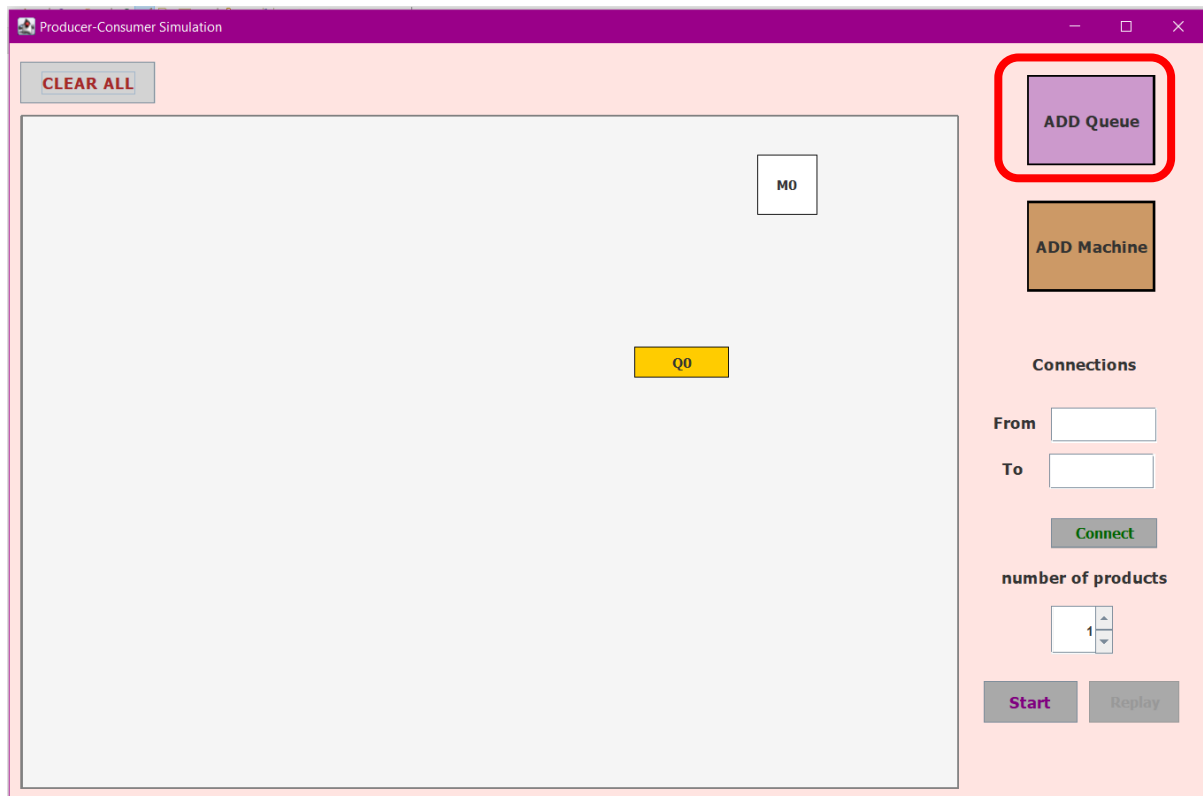
## 1/ main window



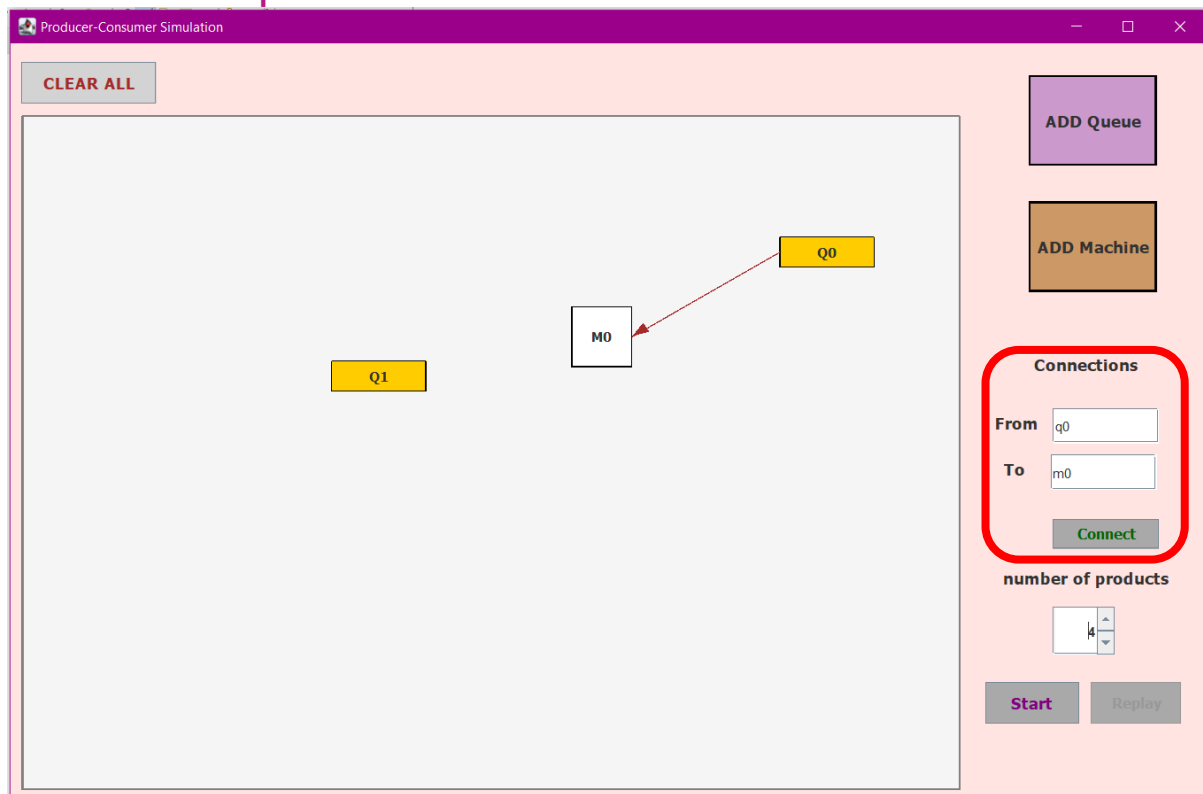
## 2/ add queue



### 3/ add machine



### 4/ connect queues with machines



5/ enter the size of products then start system

