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There are two types of objects, Passenger and Bus. The passenger objects generate exponentially distributed values to serve as the time at which a Passenger arrive to one of the four stations in a circular route, with a mean lambda of 5, so The nextarrival=-5\*ln (r), where r is the standard random number call. The bus object also generates a value that 50% of the time is 15, and the other 50% of the time is a value between 20 and 40.

Repeat for 10,000 departures:

Passenger Object{

Generates arrival time

If arrival time is less than next Bus Arrival:

Passeneger object updates clock and gets added to stop queue

Create another Passenegr object

If arrival time is greater than next Bus Arrival:

Bus Object arrives at next stop

Passenegr Objects that get off at station:

Updates clock by 1 second

Passenegr Objects at next station’s queue board bus:

Updates clock by 2 seconds

Randomly Generates an int value from 1-3(determines how many stop the passenger object rides)

After all passengers at station queue board, or Bus Object reaches capacity:

Decreases number of stops by 1 as the bus until the value is 0 (so every passenger gets off before the station they entered on)

}

Bus Object{

Generates arrival to next stop (Bus Arrival)

Bus Object Updates clock to Bus Arrival Time

Passenger that must get off the bus depart:

Passenegr Objects get removed from Bus array

Passengers at the station Queue enter the bus by the amount of Vacant seats

Updates the next stop

}