

## Example: An airport security system

- The passenger security process at one terminal of a medium sized airport works as follows:
- Between 8am and 10am, one passenger arrives every half-minute (on average, according to an exponential distribution) at the security area.
- Arriving passengers immediately enter a single line (with a large capacity).
- After waiting in line, each passenger goes through one of two inspection stations, which involves walking through a metal detector and running any carry-on baggage through a scanner. The amount of time for this inspection can be approximated by a normal distribution with a mean of 1 minute and a standard deviation of .1 minutes.

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- After completing this inspection, 10% of the passengers are randomly selected for an additional inspection, which typically involves a more thorough search of the person's carry-on baggage.
- There are two stations for this additional inspection; the amount of time for it can be approximated by a normal distribution with a mean of 5 minutes and a standard deviation of 1 minute.
- We need a new element in SimQuick to model this system.

## **Process Flow Map: An airport security system**