| | |
|---|---|
| **Student Name** | |
| **Project title** | Bank Office |
| **Team Name** | Test |
| **Program** | IS |

| Team Member | |
|---|---|
| **No.** | **Student Name** |
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| 2 | Hisham Mahmoud Khiralah |
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Learning Management System

The Process Modeling Library allows you to create flexible models, collect basic and advanced statistics, and effectively visualize the process you are modeling to validate and present your model.

In this tutorial we will create a simple service system of a bank department, consisting of an automatic teller machine and teller lines. ATM provides people with a quick self-service for cash. More complex transactions, e.g. paying bills, are completed by tellers, allowing customers more time without inconveniencing those customers looking for quick cash.

# *1)Flow chart*
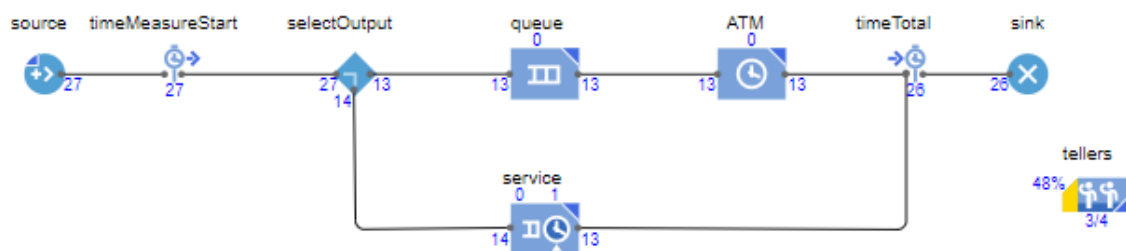


# *Component:*

1. Source
2. Select Output
3. Queue
4. Delay (ATM)
5. Sink
6. Service
7. Time Measure Start
8. Time Measure End

# Creating Model Animation

Although the flowchart is animated, you may want to see the actual bank department layout animated. That is also possible! For each model you can create an animation to visually represent your model. You can create any animation you want. Now we will draw the layout consisting of the ATM and a queue. Then we will animate clients standing in the queue and using the ATM. We also want to visualize the current status of the ATM.

Now we will draw the layout of our bank. You draw the layout on the same diagram where you draw a flowchart. However, if you have existing image of the layout, you can simply import this picture as the bank layout instead of drawing it by yourself.
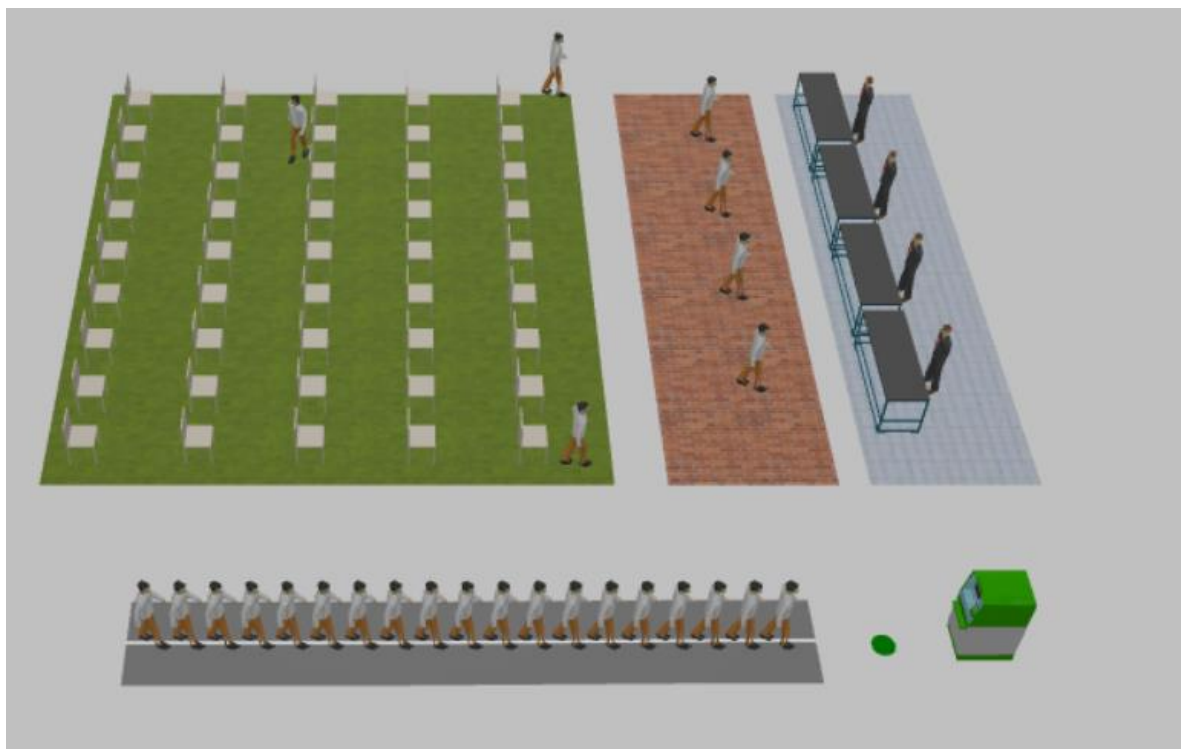
# *3)ATM Utilization*

## Add a bar chart to indicate mean ATM utilization

1. Set the data item's **Title**: `ATM utilization`.
2. Type `ATM.statsUtilization.mean()`

   as the **Value** of the data item. `ATM` is the name of the 🕐 **Delay** block we created. Each 🕐 **Delay** block has a `statsUtilization` data set that collects statistics on the object utilization. The `mean()` is the function that returns the mean value measured. You can use other functions to get statistical values, such as `min()` and `max()`.
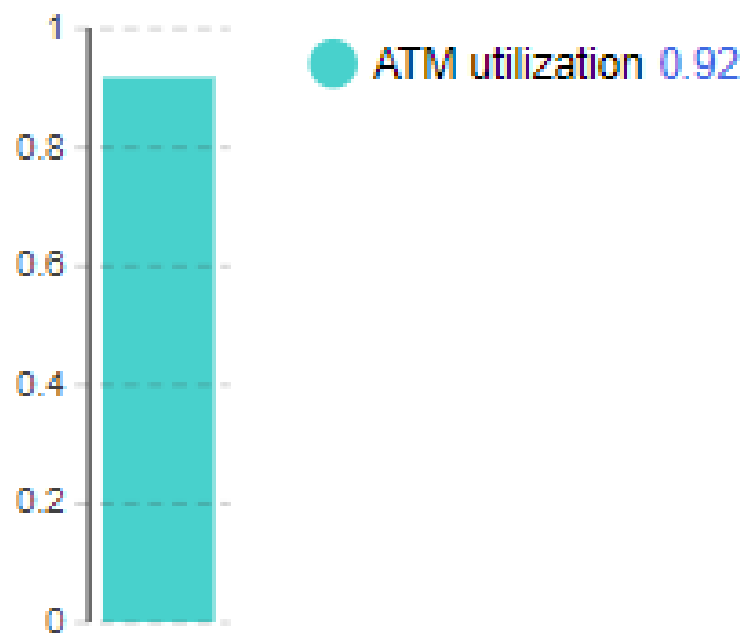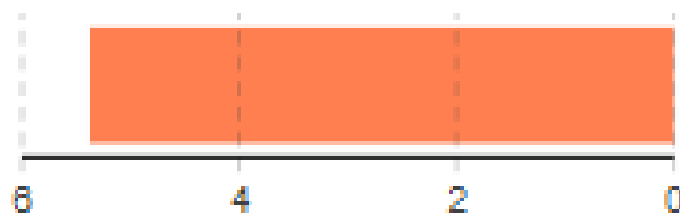
# 4)Queue length

## Add a bar chart to indicate mean queue length
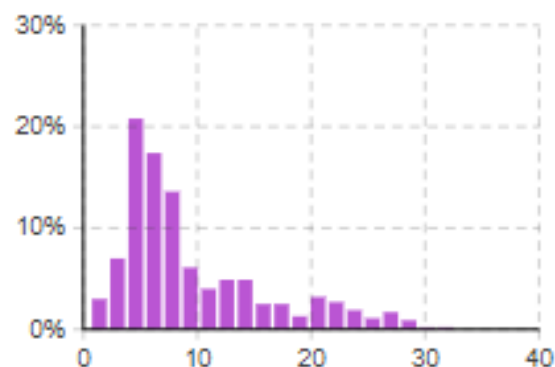
Set the **Title**: `Queue length`
and **Value**: `queue.statsSize.mean()`
. Here `statsSize` is the data set of type `StatisticsContinuous` that collects the statistics on the **Queue** size.



# 5)Histogram

# *The Code:*

https://drive.google.com/file/d/1MTFZoZ1uHURSp_4M3Cu-vILG0WmE7j8c/view

Run the model and observe the ATM utilization and mean queue length with new created charts