Service Engineering Winter 2014

Homework 6 – SEEStat

Part 1 (To be done by 19.12.13, No need to submit it)

Go through **SEEStat 3.0 Tutorial**:

http://ie.technion.ac.il/serveng2014W/Homeworks/SEEStat_workshop_8_2012.pdf

Make sure you follow carefully all the tutorial instructions and produce all the required graphs

Part 2 (To be submitted by 19.12.13)

Question 1: Undesirable Service Level

Figures 1 and 2 below show the abandons proportions and the average waiting time, for two different queues – Telesales and Consumer Loans, respectively. Both graphs present a clear peak on October 2001. Analyze these peaks, while showing all the relevant graphs that you use in your analysis, and explaining the information you deduce from each graph.

Note: The analysis you are requested to perform is at the level of the system parameters that caused the above peaks, including reference to the relevant times. An example of such an analysis could be: "the service time grew to 300 sec, and the number of agents decreases to 250 agents on 04.07.03 between 10:00-14:30". Moreover, check whether these peaks also occurred to others performance measures, such as waiting time and delay probability, and refer to it in your answer.

Question 2: Service Levels and Priority Queues

Retail and Premier calls enjoy the same service type, but the Premier calls are considered VIP calls. Despite the fact that the agents of Retail and Premier services have the same skills, the agents defined as "Retail agents" are not qualified to serve Premier calls, but "Premier agents" are qualified to serve Retail calls.

The marketing manager of the call center claims that service levels are not satisfactory on July 2001. Explain the reasons for the marketing manager claim and draw the graphs to support your explanation. What is the reason for the unsatisfactory service levels? Suggest a way to solve the problem.

Figure 1: Abandonment rate of Telesales calls

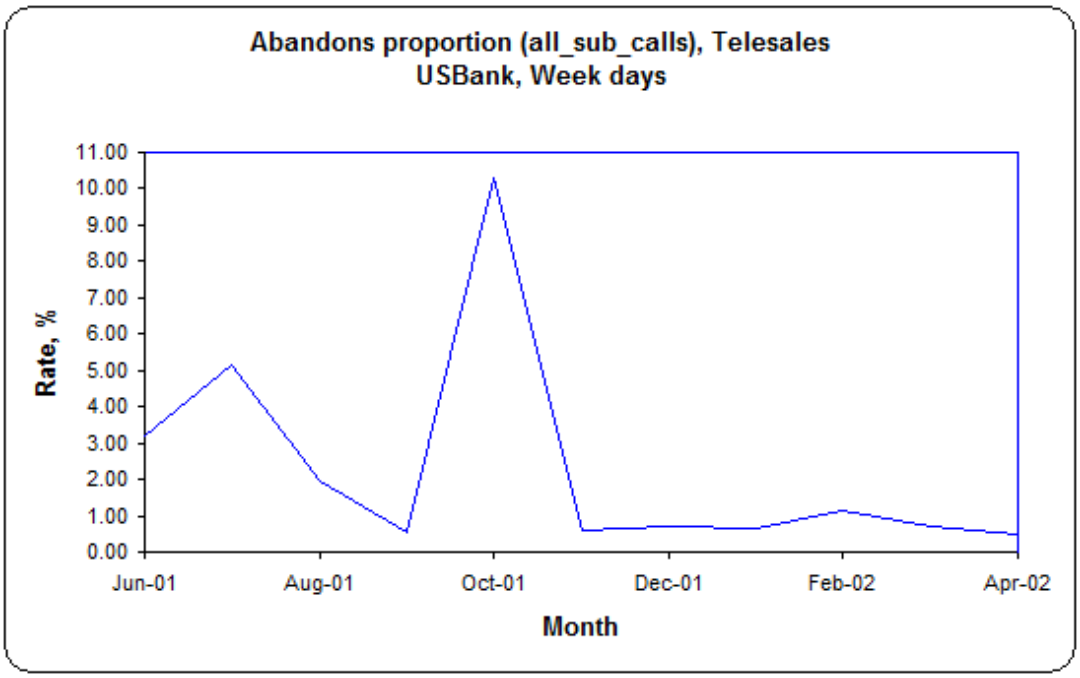
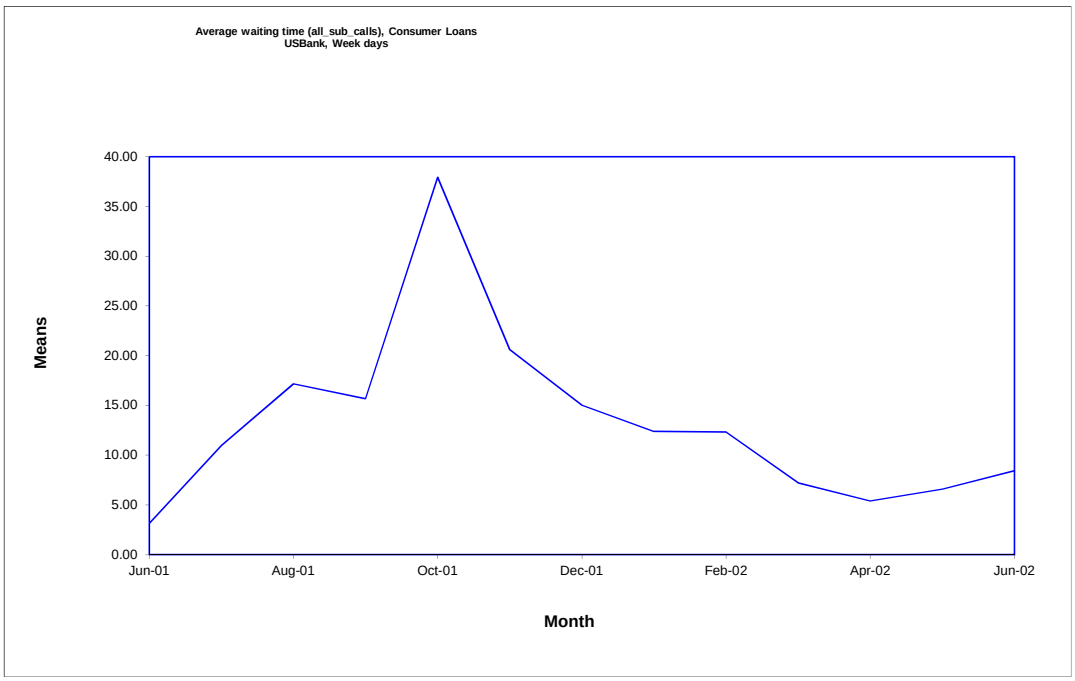


Figure 2: Average waiting time of Consumer Loans calls



Part 3 (To be submitted by 2.1.14)

Connect to **SEEGraphView** on the Technion SEELab Server.

Choose two or three animations available under **SEEGraphView** and provide your observations to each one of them. You may indicate patterns or interesting phenomena, and explain how each animation can help in analyzing or understanding the characteristic of the animated system. Try to propose additional viewpoints, features, GUI enhancement, etc.

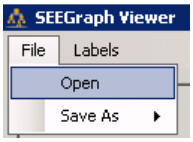
Remarks:

- Guidelines for connection to the SEELab server are available on **SEEStat 3.0 Tutorial**, pages 4-7.
- The next page contains an explanation on how to run the animations in **SEEGraphView** as well as some basic features that can be used while running the animations.

SEEGraphView User Guide

Opening an animation file:

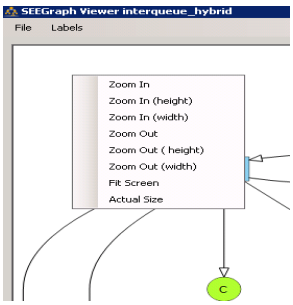
Click ‘File -> Open’ and choose the desired animation out of the available animations.



Press the ‘Play’ button on the left bottom side of the screen to run the animation.

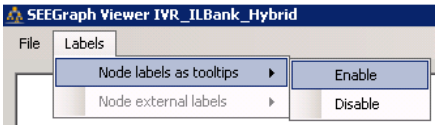
Zooming:

Right click on the screen will open the following dialog box, chose the desired option.



Labels:

In order to see better the nodes labels Click ‘Labels -> Node labels as tooltips -> Enable’.



Sampling time interval:

In the Network (structural) animations, each frame in is based on an aggregation of all the events that occurred during a specific time interval. In the Process-Mining (flow) animations, the OR (queuing perspective) animations and the Hybrid animations each frame represent the system state by the end of a specific time interval. For all cases, the time intervals length can be modified using the ‘Sampling time interval’ adjustment bar.

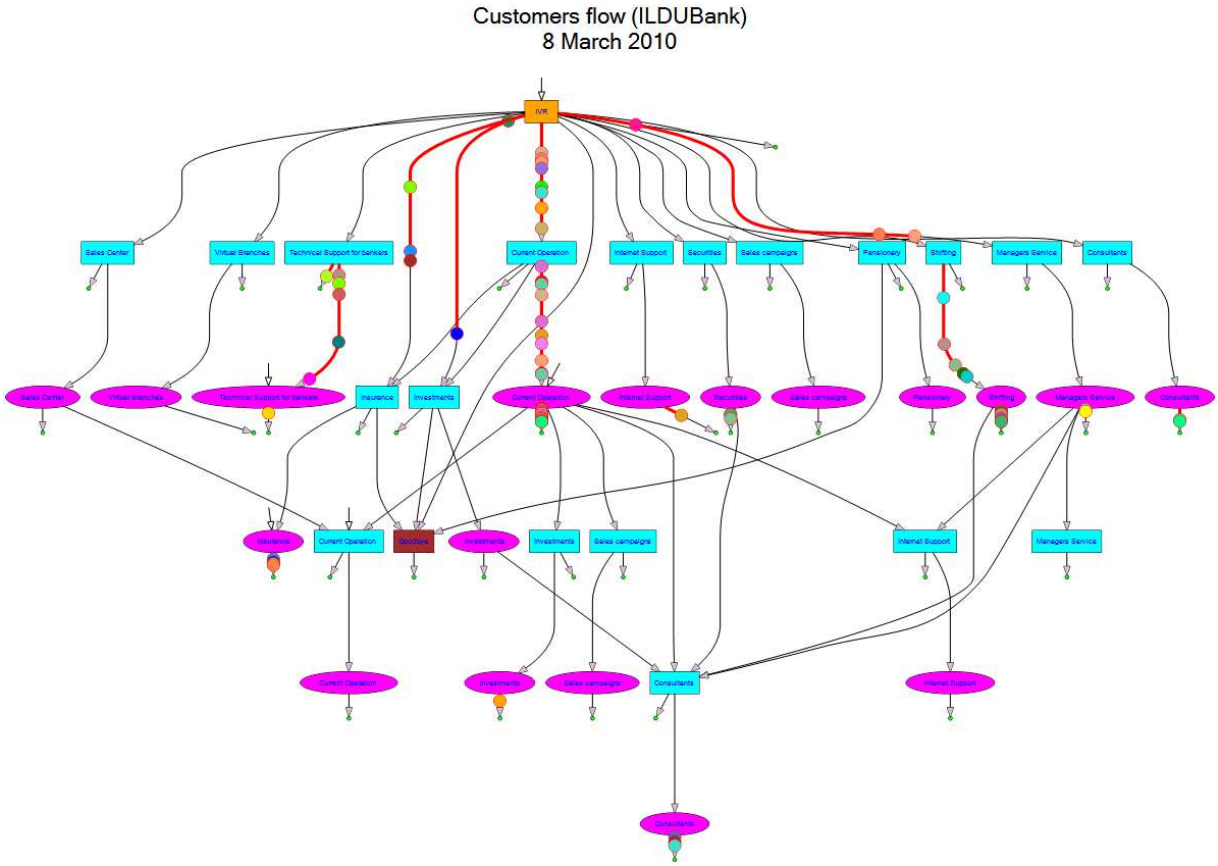
Display time interval

This adjustment bar controls the time between displays of one animation frame to the next. Increased (decreased) 'Display time interval' value makes the animation run slower (faster).

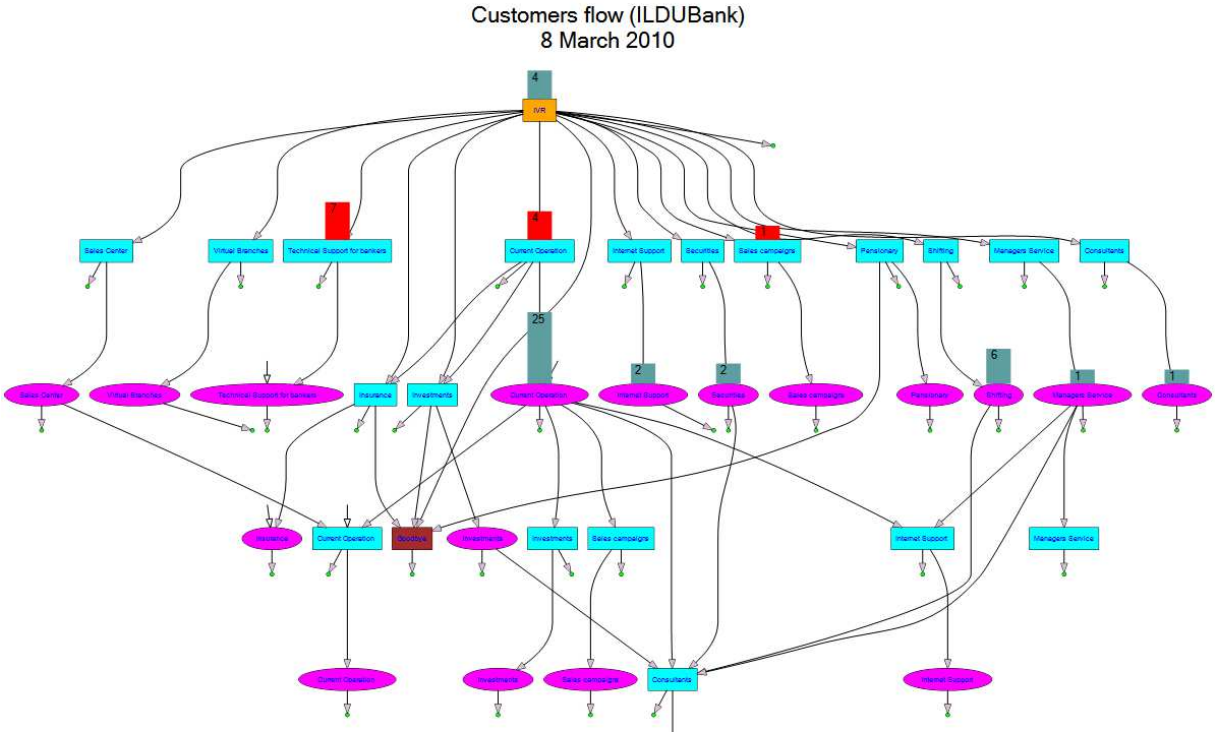
Examples

For your convenience we provide four basic animation screenshots, to further explain the different views, available in SEEGraphView:

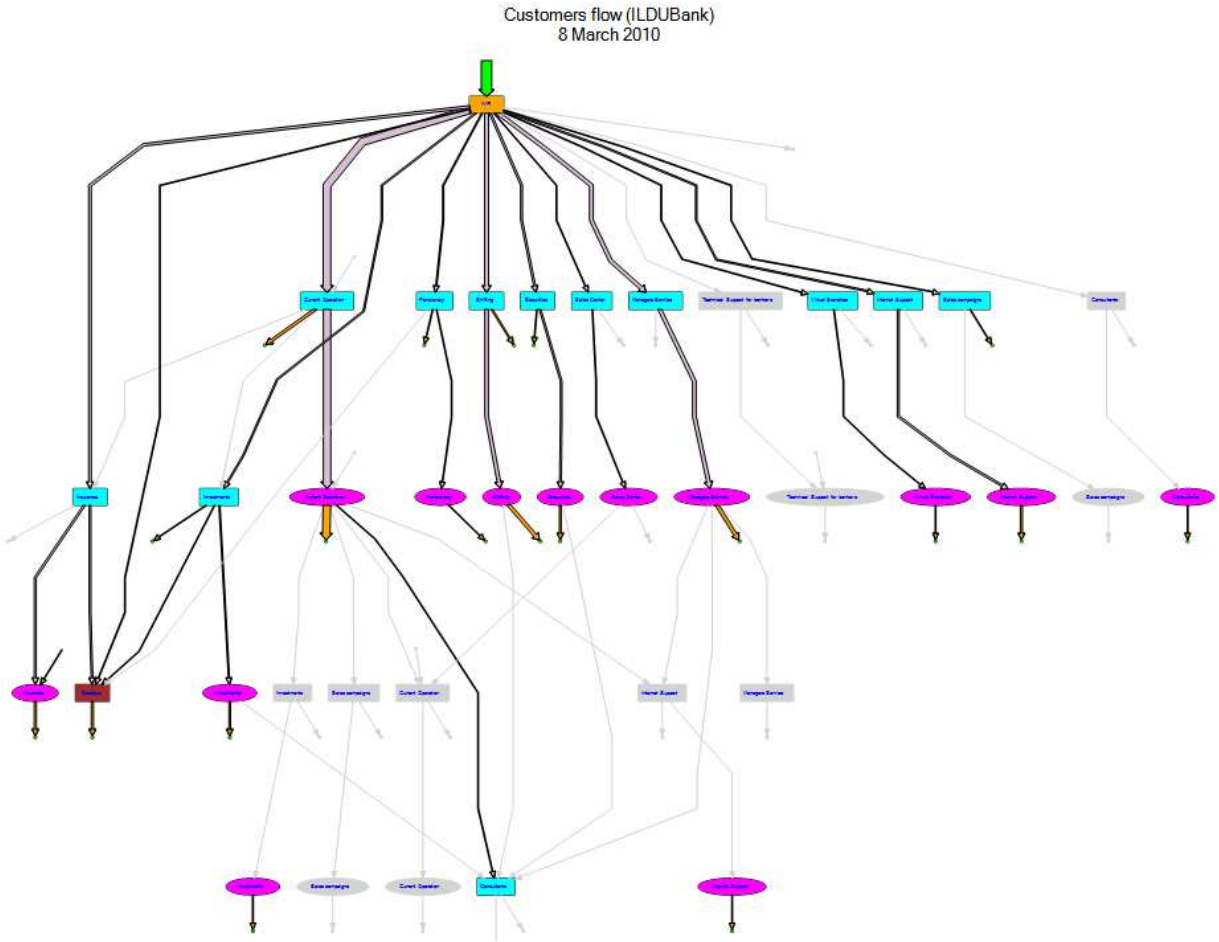
1. The Process Mining (Flow) view:



2. The Operations Research (or queueing) view:



3. The network (structure) view:



4. The hybrid (Process Mining + Operations Research) view: