

Bank Simulator user manual

Getting Started

- Launch the Bank Simulator application
- The main interface displays control panels on the left, visualization in the center, and statistics on the right (Figure 15)

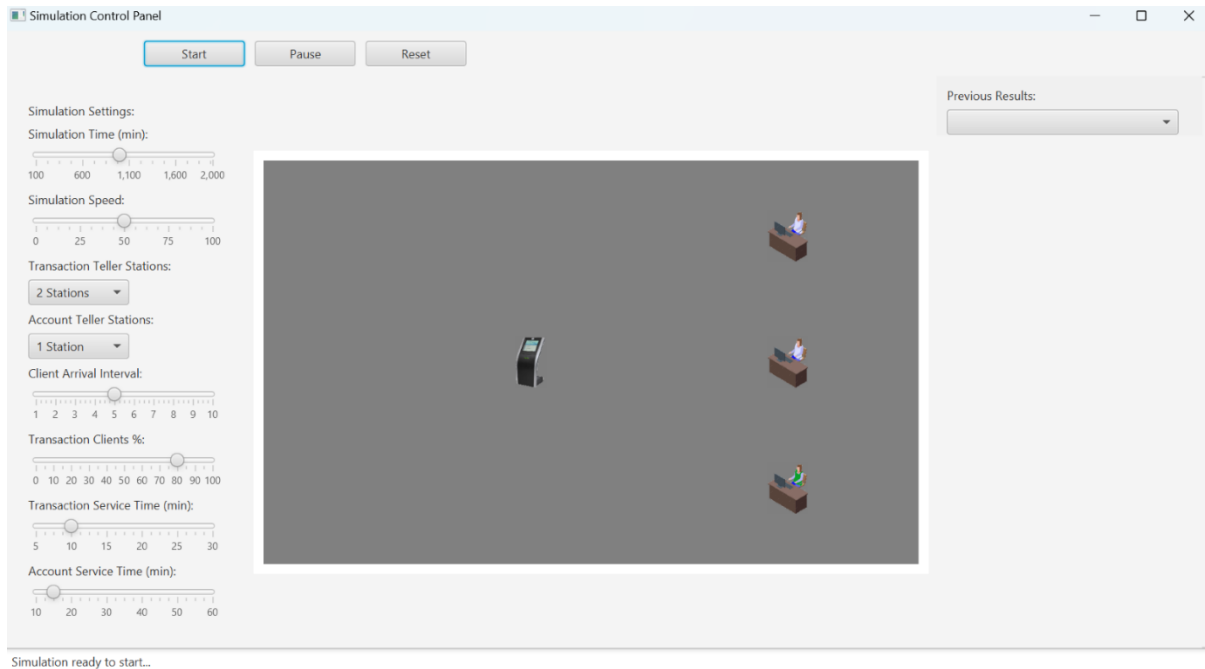


Figure 1. Application main interface

Configuration Settings

Basic Parameters

- Simulation Time: Slide to set duration (100-2000 minutes)(Figure 16)

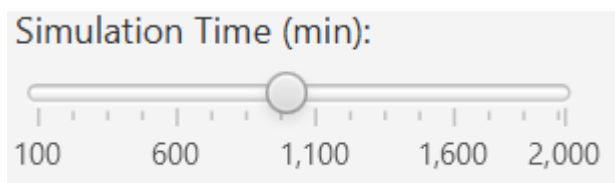


Figure 2. Simulation time slider

- Simulation Speed: Adjust simulation pace (0-100%) (Figure 17)

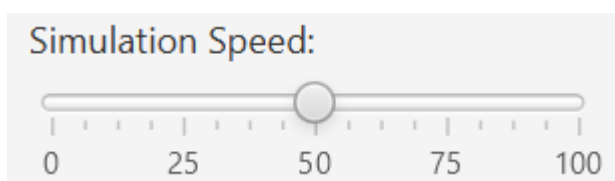


Figure 3. Simulation speed slider

- Client Distribution: Set ratio of transaction to account clients (0-100%)(Figure 18)

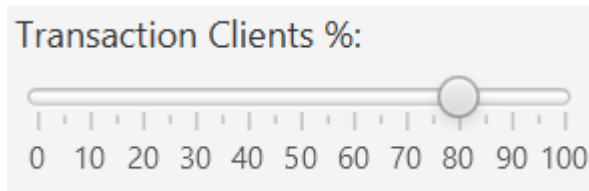


Figure 4. Transaction clients slider.

Service Points Setup

1. Transaction Tellers: Select number of stations (1-5)
2. Account Tellers: Select number of stations (1-5)
3. Total combined stations cannot exceed 6

Transaction Teller Stations:

2 Stations ▼

Account Teller Stations:

1 Station ▼

Figure 5.

Service Times

- Client Arrival Interval: Set time between arrivals (1-10 minutes) (Figure 19)

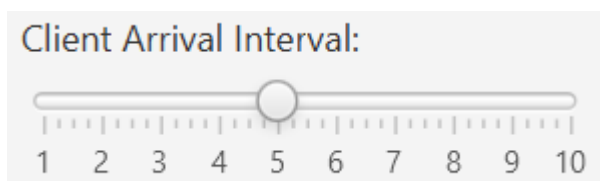


Figure 6. Client arrival slider.

- Transaction Service Time: Set duration (5-30 minutes)(Figure 20)

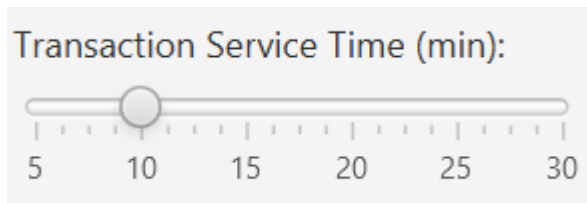


Figure 7. Transaction Service Time slider.

- Account Service Time: Set duration (10-60 minutes)(Figure 21)

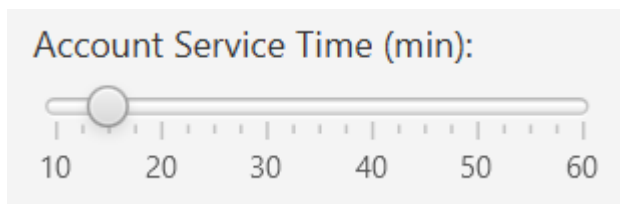


Figure 8. Account Service Time slider.

Running the Simulation

1. Configure desired parameters
2. Click "Start" to begin simulation
3. Use "Pause" to temporarily halt (click again to resume)
4. "Reset" returns to initial state

Visual Elements

Main Canvas

Dark blue figures: Transaction clients



Light blue figures: Account operation clients





Queue automat:

Service points (tellers):



Transaction teller:



Account teller:

Queue Display

Shows real-time queue lengths

Displays overflow indicators (+N) for long queues

Updates automatically as simulation runs (Figure 22)

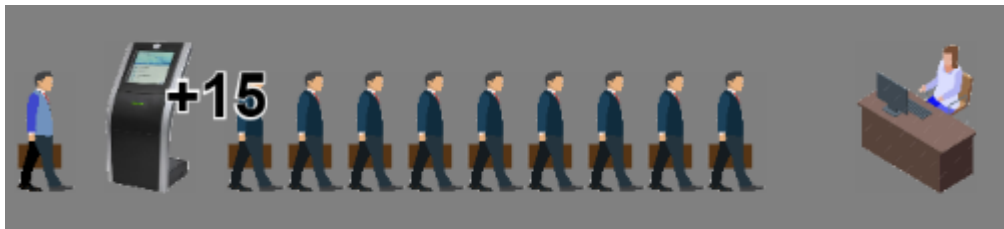


Figure 9. Example of overflow in transaction teller queue

Statistics Panel

Real-time Metrics

- Total customers served
- Current queue lengths
- Service point utilization

Final Results

- Average service times
- Queue statistics
- Customer flow rates

- Station efficiency metrics

Simulation Statistics

=== Simulation Settings ===

Number of Transaction Tellers: 2

Client Arrival Interval: 1.00 minutes

Transaction Service Time: 10.00 minutes

Account Service Time: 15.00 minutes

Client Distribution (Transaction/Account):
80.0% / 20.0%

=== Simulation Results ===

Simulation ended at: 1000.51 minutes

Total Customers Served: 191

Queue Automat Statistics:

Queue Automat:

Customers Served: 490

Average Service Time: 1.72 minutes

Average Queue Time: 94.72 minutes

Figure 10. Example of simulation statistics results

Historical Data

- Access previous simulation results from dropdown

- Compare different configuration outcomes
- Timestamp-based result storage

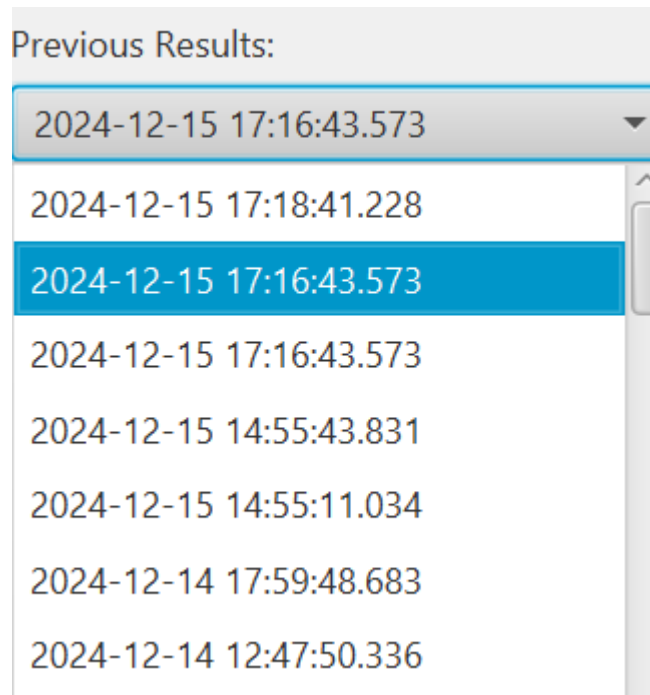


Figure 11. Historical data dropdown menu

Tips for Optimal Use

1. Start with default settings to understand basic flow
2. Adjust one parameter at a time to see its impact
3. Use pause function to analyze specific situations
4. Monitor statistics panel for performance insights

Performance Analysis

- Watch for queue buildups
- Monitor service point utilization
- Compare transaction vs account operation efficiency
- Use historical data to optimize settings
- This simulator provides valuable insights into bank operation efficiency and resource allocation.