

EXERCISE 1

NAME: MEHMOOD SHEIKH

ROLL NO: 21A-001-SE

Q1:

Entity...	Location...	Operation...
ATM_Customer	ATM_Queue	move for 0
ATM_Customer	ATM	wait E(5.0)

General Report (Normal Run - Rep. 1)	
General	LocationsLocation States MultiLocation States SingleEntity ActivityEntity StatesVariables
Lab 3_1_2 ATM System.MOD (Normal Run - Rep. 1)	
Name	Value
Run Date/Time	1/4/2025 12:34:00 PM
Model Title	ATM System - Ch 3 & Lab 3
Model Path/File	C:\Program Files (x86)\ProModel Corporation\ProModel\7.5\Models\Student\Lab 03\Lab 3_1_2 ATM System.MOD
Warmup Time (HR)	0
Simulation Time (HR)	980

General Report (Normal Run - Rep. 1)							
General	Locations	Location States Multi	Location States Single	Entity Activity	Entity States	Variables	
Lab 3_1_2 ATM System.MOD (Normal Run - Rep. 1)							
Name	Total Changes	Avg Time Per Change (MIN)	Minimum Value	Maximum Value	Current Value	Avg Value	
Average Time in Queue (obs-based)	11698.00	5.02	0.00	197.35	121.71	130.90	
Average Time in System (obs-based)	11698.00	5.02	2.44	202.35	126.61	135.83	

Q2:

The assumptions of the ProModel ATM system are:

1. **Infinite Capacity:** The ATM_Queue has infinite capacity, implying no limit to the number of entities waiting in the queue.
2. **FIFO Rule:** The queue follows a First-In-First-Out (FIFO) rule, where entities are served in the order they arrive.

Assessment of Realism:

- The **infinite capacity** assumption is unrealistic for an actual ATM queue, as space is limited in real life.
- The **FIFO assumption** is reasonable, as most queues operate on this principle.

To Improve Realism:

- Set a finite capacity for the ATM_Queue to reflect physical space constraints (e.g., 5 or 10 entities).
- Consider adding priority-based rules or abandoning behavior to simulate real-world scenarios where people might leave if the queue is too long.

Q3:

Arrivals							
Entity...	Location...	Qty Each...	First Time...	Occurrences	Frequency	Logic...	Disable
ATM_Customer	ATM_Queue	1	0	inf	E(7.0)	Time_in_Queue = Clock	No

General Report (Normal Run - Rep. 1)							
General	Locations	Location States Multi	Location States Single	Entity Activity	Entity States	Variables	
Lab 3_1_2 ATM System.MOD (Normal Run - Rep. 1)							
Name		Value					
Run Date/Time		1/4/2025 12:48:40 PM					
Model Title		ATM System: Ch 3 & Lab 3					
Model Path/File		C:\Program Files (x86)\ProModel Corporation\ProModel\7.5\Models\Student\Lab 03\Lab 3_1_2 ATM System.MOD					
Warmup Time (HR)		0					
Simulation Time (HR)		980					

General Report (Normal Run - Rep. 1)							
General	Locations	Location States Multi	Location States Single	Entity Activity	Entity States	Variables	
Lab 3_1_2 ATM System.MOD (Normal Run - Rep. 1)							
Name		Total Changes	Avg Time Per Change (MIN)	Minimum Value	Maximum Value	Current Value	Avg Value
Average Time in Queue (obs-based)		8459.00	6.95	0.00	12.61	11.16	10.85
Average Time in System (obs-based)		8459.00	6.95	2.44	17.58	16.16	15.77