



Quarter Programming Project

Quarter Project: “Logistics Application”

Phase 2 Requirements

- Phase 2: Order & Order Processing (**4 Weeks: 5/4 – 6/1**) – **Final Submission of All Functionality**
 - Load Orders, Process Orders, Generate Order Outputs, Generate Final Outputs
 - In this phase, you must fully implement the following:
 - a. Create the Order File (offline process)
 - b. Load the Order File and create internal representation of Orders & Related Order Items
 - c. Fully implement Order Processing functionality
 - d. Generate Order & Facility Output
 - Mandatory Orders: Your application *must* successfully process the following 6 test orders:

Order Id: TO-001 Order Time: Day 1 Destination: Miami, FL Order Items: <ul style="list-style-type: none">▪ Item: ABC123, Qty: 180▪ Item: CR2032, Qty: 320	Order Id: TO-002 Order Time: Day 1 Destination: Boston, MA Order Items: <ul style="list-style-type: none">▪ Item: PL132-C, Qty: 5▪ Item: XLK200B, Qty: 120	Order Id: TO-003 Order Time: Day 4 Destination: Seattle, WA Order Items: <ul style="list-style-type: none">▪ Item: XTP202, Qty: 100▪ Item: E241i, Qty: 105
Order Id: TO-004 Order Time: Day 10 Destination: Phoenix, AZ Order Items: <ul style="list-style-type: none">▪ Item: CR2032, Qty: 200▪ Item: SR71-D, Qty: 85	Order Id: TO-005 Order Time: Day 7 Destination: Chicago, IL Order Items: <ul style="list-style-type: none">▪ Item: XLK200B, Qty: 120▪ Item: RX100-3, Qty: 200▪ Item: SN-241-L, Qty: 60	Order Id: TO-006 Order Time: Day 1 Destination: Denver, CO Order Items: <ul style="list-style-type: none">▪ Item: CT1928, Qty: 120▪ Item: MM35P, Qty: 200

- You **must** submit your project with a “Main” class with a “main” method that generates the following output:
 - 1) Facility Status Output for all Facilities *before* processing orders. (Same output format as in the 1st implementation)
 - 2) Order Output for all 6 Orders (described on the next page).
 - 3) Facility Status Output for all Facilities *after* processing orders. (Same output format as #1)



- Required Order Output Format Example:

Order #1

Order Id: TO-001

Order Time: Day 1

Destination: Miami, FL

List of Order Items:

1) Item ID: ABC123, Quantity: 180

2) Item ID: CR2032, Quantity: 320

Processing Solution:

Total Cost: \$94,355

1st Delivery Day: 3

Last Delivery Day: 16

Order Items:

	Item ID	Quantity	Cost	# Sources Used	First Day	Last Day
1)	ABC123	180	\$67,705	4	4	16
2)	CR2032	320	\$26,650	1	3	6

NO late submissions will be accepted for this project phase at all – no exceptions.

The due date is the last day of class. NO late submissions will be accepted.

No exceptions.

If you are not done with the assignment at that time, then you should submit whatever you have completed.



Appendix A: Expected Order Solution Output

Order #1

Order Id: T0-001
Order Time: Day 1
Destination: Miami, FL

List of Order Items:

1) Item ID: ABC123, Quantity: 180
2) Item ID: CR2032, Quantity: 320

Processing Solution:

ABC123:

	Facility	Quantity	Cost	Arrival Day
1)	Fargo, ND	25	\$18,187.50	11
2)	St. Louis, MO	70	\$42,750.00	11
3)	Chicago, IL	60	\$37,800.00	12
4)	Denver, CO	25	\$18,000.00	10
	TOTAL	180	\$116,737.50	[10 - 12]

CR2032:

	Facility	Quantity	Cost	Arrival Day
1)	New York City, NY	132	\$36,508.57	14
2)	Nashville, TN	188	\$54,170.00	28
	TOTAL	320	\$90,678.57	[14 - 28]

Total Cost: \$207,416.07

Order #2

Order Id: T0-002
Order Time: Day 1
Destination: Boston, MA

List of Order Items:

1) Item ID: PL132-C, Quantity: 5
2) Item ID: XLK200B, Quantity: 120

Processing Solution:

PL132-C:

	Facility	Quantity	Cost	Arrival Day
1)	Seattle, WA	5	\$6,387.50	9
	TOTAL	5	\$6,387.50	[9]

XLK200B:

	Facility	Quantity	Cost	Arrival Day
1)	Norfolk, VA	14	\$12,900.00	4
2)	San Francisco, CA	8	\$11,260.00	10
3)	Fargo, ND	82	\$73,752.50	19
4)	Nashville, TN	16	\$22,770.00	30
	TOTAL	120	\$120,682.50	[4 - 30]

Total Cost: \$127,070.00



Order #3

Order Id: T0-003
Order Time: Day 4
Destination: Seattle, WA

List of Order Items:

1) Item ID: XTP202, Quantity: 100
2) Item ID: E241i, Quantity: 105

Processing Solution:

XTP202:

	Facility	Quantity	Cost	Arrival Day
1)	Los Angeles, CA	32	\$13,500.00	10
2)	Chicago, IL	20	\$11,400.00	14
3)	Miami, FL	48	\$23,260.00	18
	TOTAL	100	\$48,160.00	[10 - 18]

E241i:

	Facility	Quantity	Cost	Arrival Day
1)	Los Angeles, CA	44	\$461,380.00	14
2)	Atlanta, GA	32	\$338,760.00	17
3)	Chicago, IL	29	\$306,970.00	17
	TOTAL	105	\$1,107,110.00	[14 - 17]

Total Cost: \$1,155,270.00

Order #4

Order Id: T0-004
Order Time: Day 10
Destination: Phoenix, AZ

List of Order Items:

1) Item ID: CR2032, Quantity: 200
2) Item ID: SR71-D, Quantity: 85

Processing Solution:

CR2032:

	Facility	Quantity	Cost	Arrival Day
1)	Santa Fe, NM	200	\$56,500.00	36
	TOTAL	200	\$56,500.00	[36]

SR71-D:

	Facility	Quantity	Cost	Arrival Day
1)	Detroit, MI	8	\$16,040.00	16
2)	Miami, FL	15	\$27,875.00	18
3)	San Francisco, CA	62	\$101,750.00	17
	TOTAL	85	\$145,665.00	[16 - 18]

Total Cost: \$202,165.00



Order #5

Order Id: T0-005
Order Time: Day 7
Destination: Chicago, IL

List of Order Items:

1) Item ID:	XLK200B,	Quantity: 120
2) Item ID:	RX100-3,	Quantity: 200
3) Item ID:	SN-241-L,	Quantity: 60

Processing Solution:

XLK200B:

	Facility	Quantity	Cost	Arrival Day
1)	Nashville, TN	120	\$109,750.00	43
	TOTAL	120	\$109,750.00	[43]

RX100-3:

	Facility	Quantity	Cost	Arrival Day
1)	Phoenix, AZ	18	\$14,731.00	14
2)	Austin, TX	35	\$25,020.00	13
3)	Atlanta, GA	90	\$63,040.00	21
4)	Los Angeles, CA	57	\$42,684.00	23
	TOTAL	100	\$145,475.00	[13 - 23]

SN-241-L:

	Facility	Quantity	Cost	Arrival Day
1)	Phoenix, AZ	22	\$17,640.00	16
2)	Austin, TX	35	\$25,300.00	16
3)	Miami, FL	3	\$5,235.00	14
	TOTAL	60	\$48,175.00	[16 - 18]

Total Cost: \$303,400.00

Order #6

Order Id: T0-006
Order Time: Day 1
Destination: Denver, CO

List of Order Items:

1) Item ID:	CT1928,	Quantity: 120
2) Item ID:	MM35P,	Quantity: 200

Processing Solution:

CT1928:

	Facility	Quantity	Cost	Arrival Day
1)	San Francisco, CA	46	\$45,210.00	9
2)	Detroit, MI	72	\$69,680.00	12
3)	Boston, MA	2	\$4,880.00	7
	TOTAL	120	\$119,770.00	[7 - 12]

MM35P:

	Facility	Quantity	Cost	Arrival Day
1)	Miami, FL	16	\$35,100.00	9



2)	Boston, MA	47	\$96,120.00	11
3)	Norfolk, VA	66	\$133,600.00	13
4)	New Orleans, LA	71	\$142,580.00	12
	TOTAL	200	\$407,400.00	[9 - 13]

Total Cost: \$527,170.00
