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Optimization and Its Applications in Industry 4 Era

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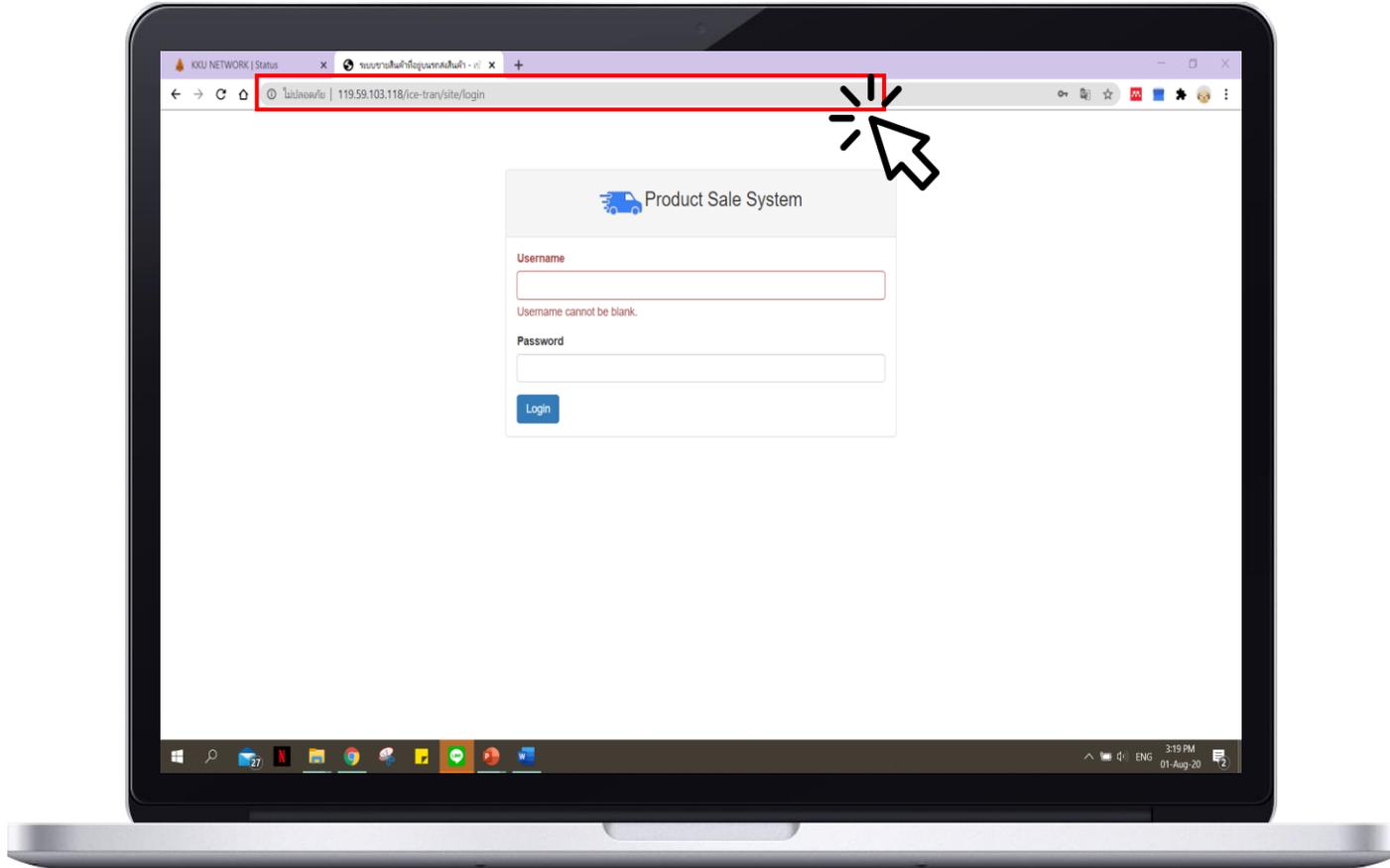


Curriculum Development
of Master's Degree Program in
Industrial Engineering for Thailand Sustainable Smart Industry

Download the application with android system

(Google drive: [ice-tran-mobile-0.0.2.zip](#))





Go to Link

["http://119.59.103.118/ice-tran"](http://119.59.103.118/ice-tran)

and login

Username: admin

Password: 123456

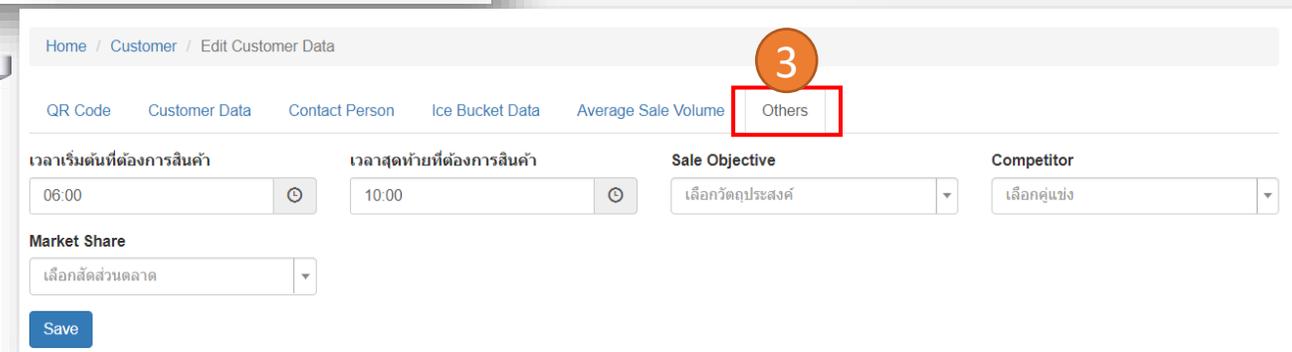
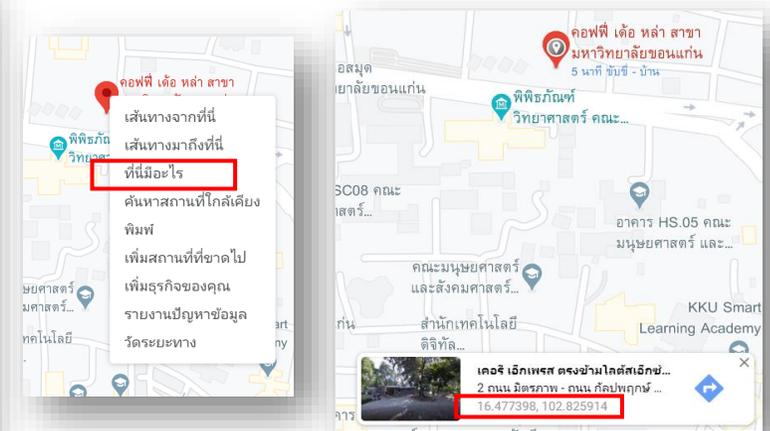
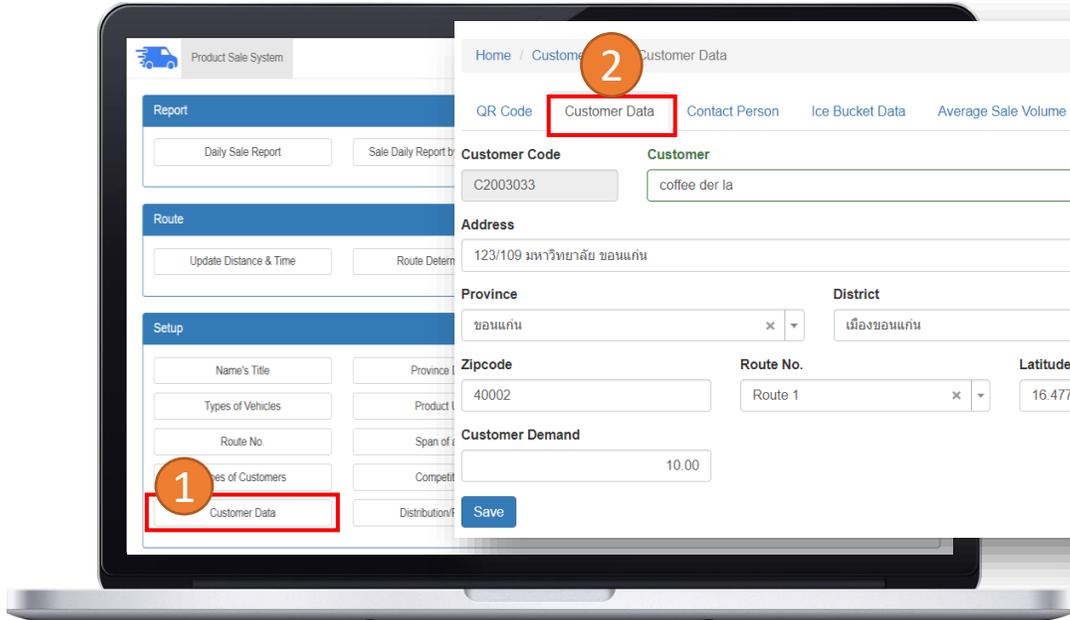
- Before making use of the demonstrated software, users must fill all required vehicle data in the software :

The screenshot displays the 'Product Sale System' interface. On the left, a sidebar menu has the 'Vehicles' option highlighted with a red box and a circled '1'. The main area shows a 'Vehicle' table with columns for '#', 'Vehicle license', 'Vehicle Type', 'Route No.', 'Edited By', and 'Date of update'. A circled '2' and a red box highlight a '+' icon in the top right corner of the table, with a red arrow pointing to the 'Create Vehicle' form on the right.

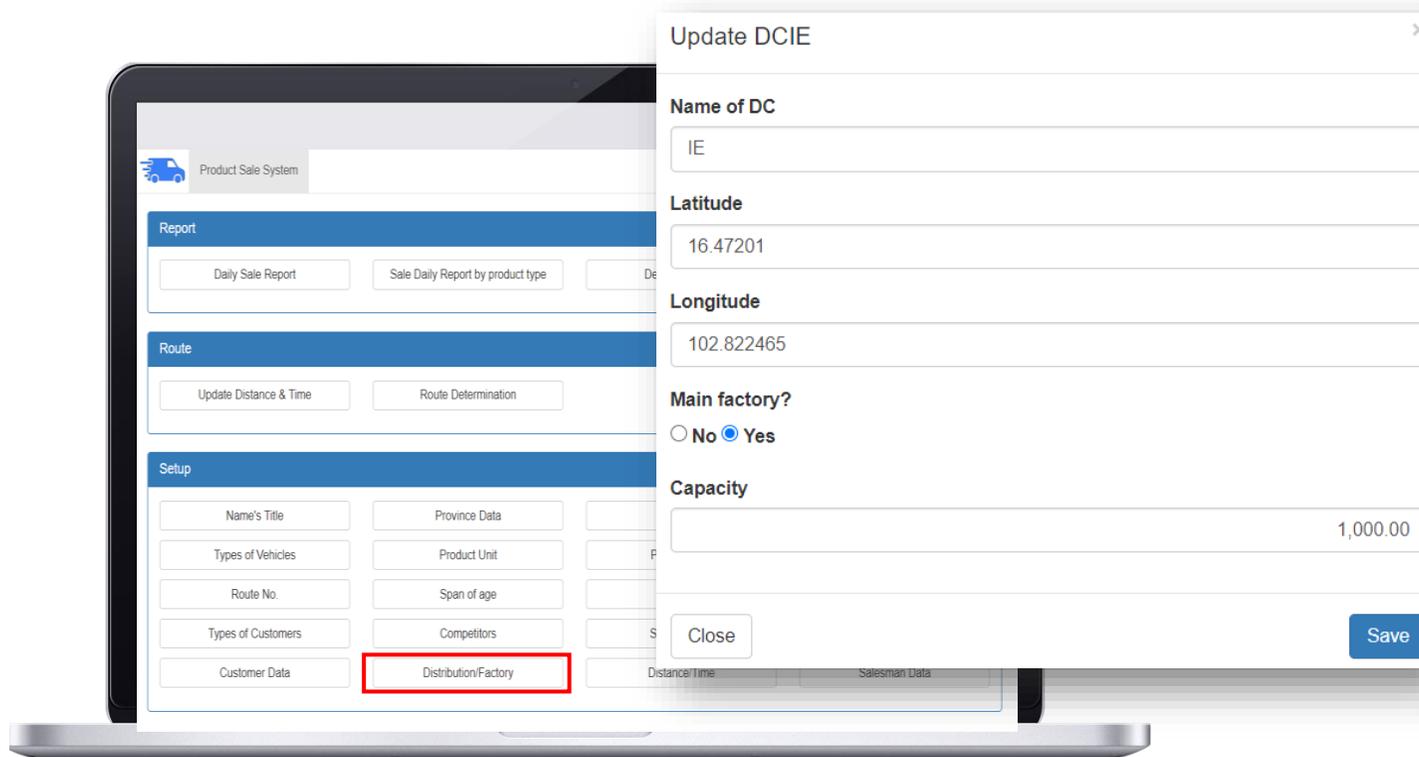
The 'Create Vehicle' form contains the following fields:

- Vehicle license:** A123
- Vehicle Type:** Ice Truck
- Route No.:** Route 1
- Maximum Capacity (Sack):** 300
- Fuel Consumption (Baht/Kilometer):** 7.50

Buttons for 'Close' and 'Save' are located at the bottom of the form.

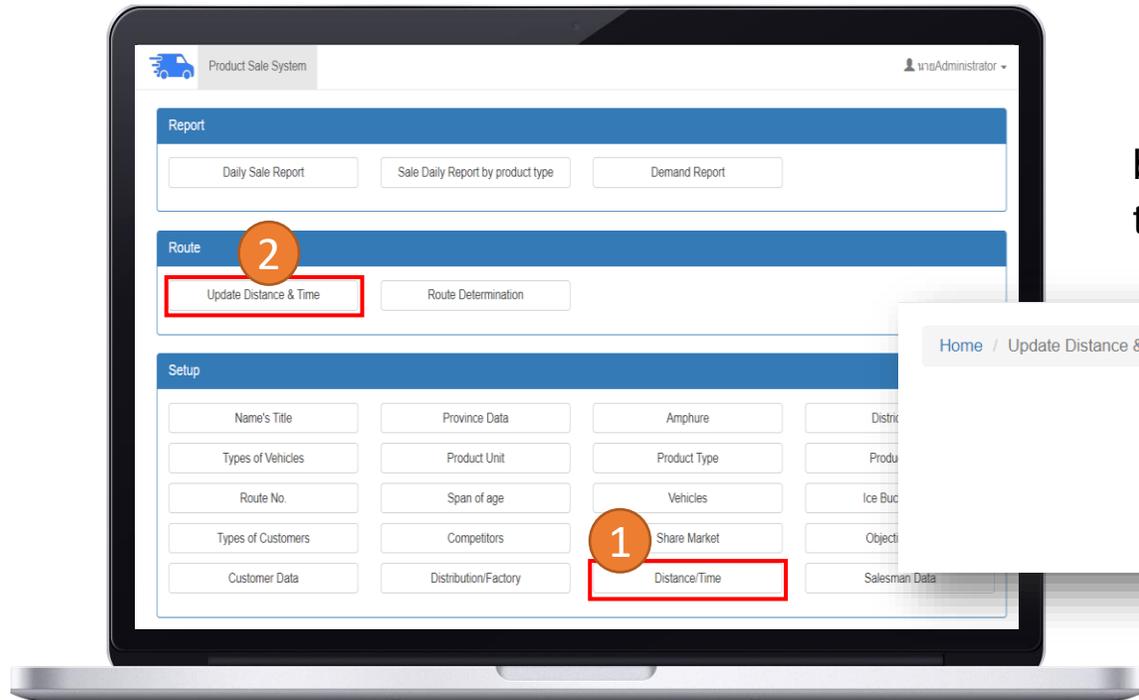


- Customer data which included the following :
 - a. Customer's name
 - b. Rout number
 - c. Latitude
 - d. Longitude
 - e. Earliest time to receive goods
 - f. Latest time to receive goods

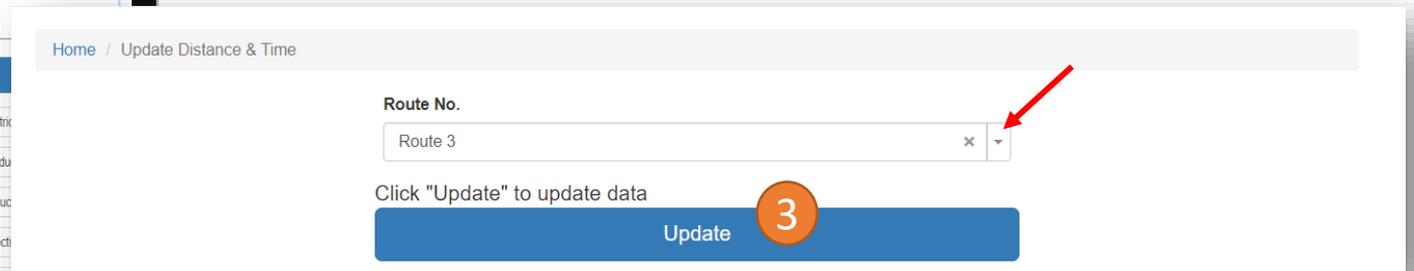


- Distribution center data which are factory and DCs.
- In case there is no DC, please fill the factory as the main distribution unit.

- Distance and time used from point to point (i.e., between DCs, between DC and customer, and from customer to customer)
 - Input directly through the menu of **“Distance/Time data”**



- In case there is any new/update customer or DCs, we have to update the data in **“Update Distance/Time data”** menu.

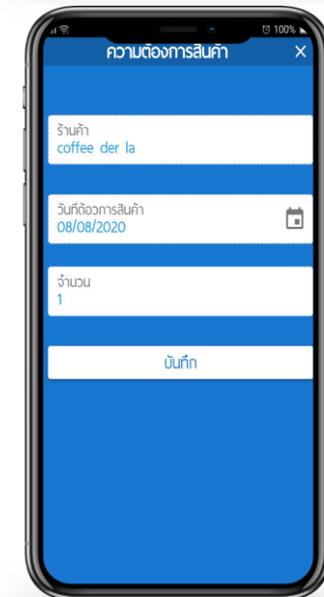


- Demand data. We can input this data through 2 ways:
 - a. Via the menu “Demand report” .

The screenshot shows a web application interface. On the left, a 'Report' menu has three buttons: 'Daily Sale Report', 'Sale Daily Report by product type', and 'Demand Report', which is highlighted with a red border. An inset window shows a table titled 'Demand' with columns: '#', 'Date of Request', 'Route no.', 'Customer', 'Qty Required', and 'Actions'. A red arrow points from the 'Demand Report' button to a 'Create Demand' modal form on the right. The modal form has fields for 'Customer' (with a dropdown menu), 'Date of Request' (with a calendar icon), and 'Qty Required' (with a numeric input field). There are 'Close' and 'Save' buttons at the bottom of the modal.

- b. Via the mobile application.

The screenshot shows a mobile application interface. At the top, there is a breadcrumb trail: 'Home / Customer / Edit Customer Data'. Below this, there is a horizontal menu with several items: 'QR Code', 'Customer Data', 'Contact Person', 'Ice Bucket Data', 'Average Sale Volume', and 'Others'. The 'QR Code' item is highlighted with a red border.



To determine the route:

- Select "Route No."
- Select "Date to send product"
- Click "Calculate"

Product Sale System

Report

Daily Sale Report Sale Daily Report by product type

Route

Update Distance & Time **Route Determination**



For user who develop their own algorithm, all data can be exported using "Export" menu. The data will be exported as Excel file shown in the Figure.

The software can also display the route obtained from user's algorithm by importing the route (in Excel format) using "Browse files" menu. Route must be written in a specific format of "Name of DC : Customer code 1 : Customer code 2 : ... : Name of DC"

	A	B	C	D	E	F	G	H
1	#	le	C2008006	C2008007	C2008008	C2008009	C2008010	C2008011
2	IE	0	3.9	4.69	7.32	7.71	9.04	14.32
3	C2008006	4.25	0	1.9	3.34	3.73	5.03	10.31
4	C2008007	4.59	0.88	0	3.23	3.62	5.33	9.84
5	C2008008	7.59	4.04	2.73	0	0.39	2.18	7.02
6	C2008009	7.98	4.43	3.12	0.39	0	1.79	6.63
7	C2008010	9	5.49	4.19	2.2	1.8	0	5.28
8	C2008011	13.87	10.32	9.7	6.14	5.75	4.39	0
9								
10								
11								
12								
13								
14								

Export

เลือกไฟล์ ไม่ได้เลือกไฟล์ใด

A	B	C	D	E
vehicle_id	routes	distance	duration	profit
44	DDD:C2003015:C2003016:DDD	20	25	120





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Thank You



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