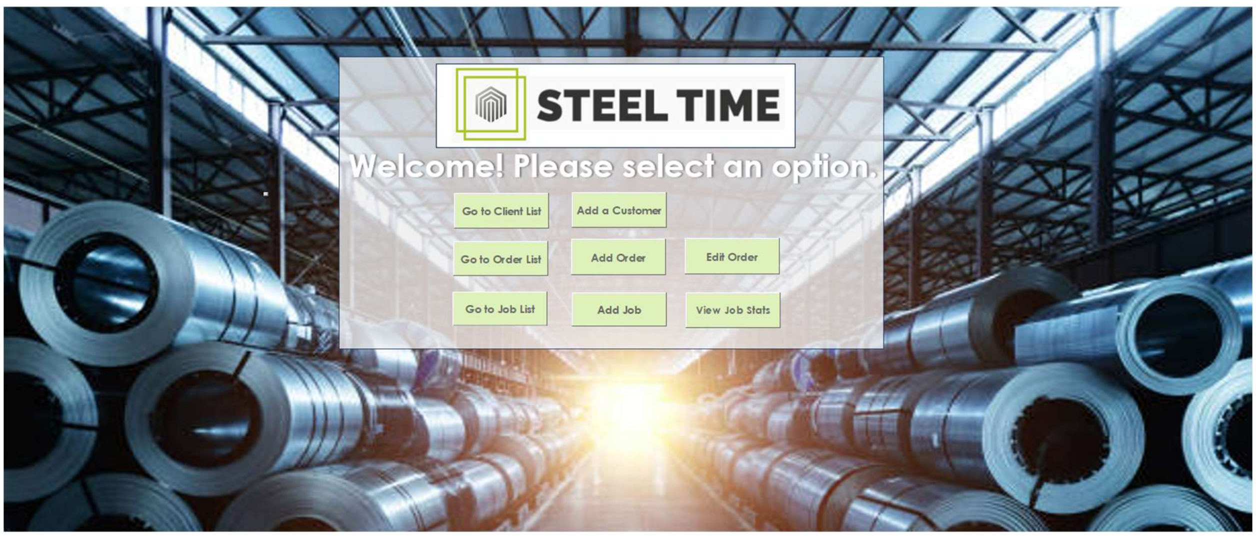
DSS (Decision Support Systems) Project User Guide & Lessons Learned

User Guide Overview:

This is the User Guide to utilizing the decision support system for the steel manufacturer, Steel Time. This manufacturer produces 7 different product families, and it is important to note that each product family has various metrics, such as sizes, styles, and materials. After selecting the required products, the user is presented with the total tons of steel required. Additionally, the DSS allows the user the option to outsource the materials or produce them in-house, based on differing costs as well as delivery date.



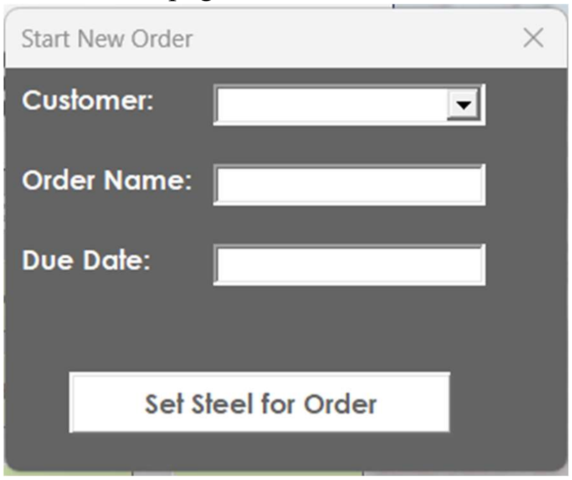
How To Operate

Task 1: Add a customer

- Once the program is launched, click on the "Add a Customer" button.
- Enter corresponding information for the customer you are adding.
  - Customer Name: "type" **Fill name**
  - Phone Number: "type" **Must be a valid number**
  - Address: "type" **Must be a valid address and in the US**
  - Email: type **Must have the @ character**
- Select the green checkmark to add the customer to the database
  - You will be redirected to the Client list, where the most recently added customer will be highlighted orange.
- Click "Return Home" to return to the homepage

Task 2: Add an order

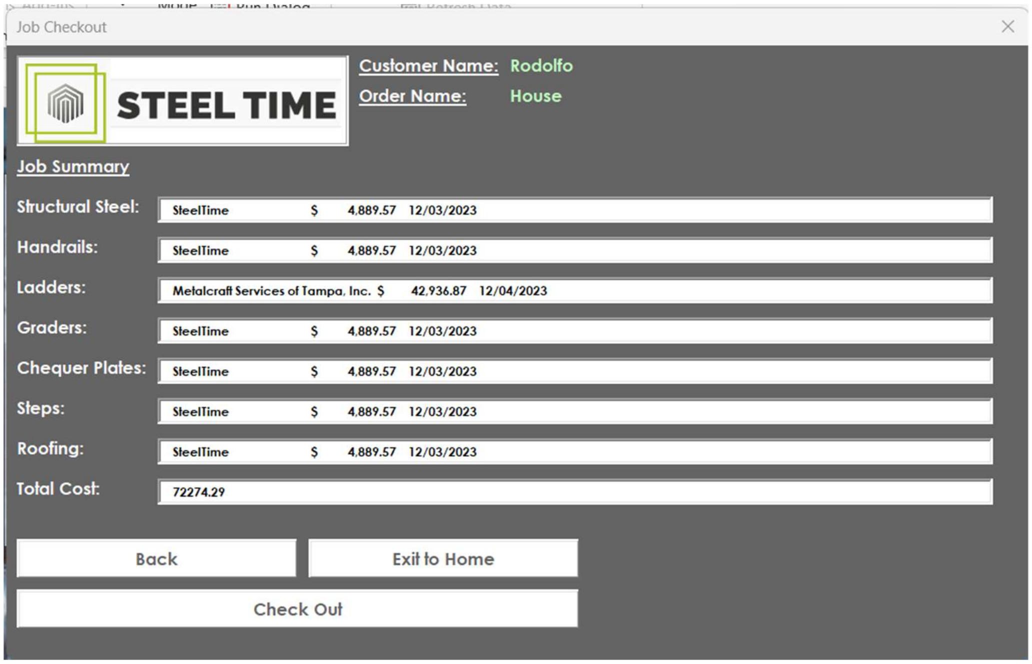
- On the homepage, click on the “Add Order” Button



- Enter corresponding information for the order you are adding.
  - Customer: From the dropdown, select the customer you will be making an order for. **Must be an existing customer**
  - Order Name: Type in the name of the structure the steel will be used for. For example, “House” **Fill Order Name**
  - Due date: Enter the date in which the project must be completed in MM/DD/YYYY format. For example, “12/31/2023” **Must be a valid date**
- Click on “Set Steel for Order”
  - You will be redirected to the “Set Order Steel Amount” form.
  - At the top, you can see the order name and customer name.
  - For each product family, there will be a text box and spin buttons.
    - You can click up/down on the spin buttons to increase/decrease the tons of steel needed for each family in increments of 5.
    - If you desire a more precise input, simply click on the textbox, and enter the desired tonnage of steel for each product family.
  - However, if you do not know the exact tonnage of steel you need for each product family, you can click on the “Free Edit” button.
    - After clicking this button, you may double click on any text box pertaining to a product family to trigger the “Guided Steel Editor” form.
    - This form allows the user to cycle though product family and input the details of their order, ranging from material, style, quantity, measurements, etc.
    - Once the user finalizes their inputs for each product family, click the back button to return to the ordersteelamount form to see a graph of the tonnage required for each product family.
  - Click on the create order button.
- You will be redirected to the client and order info page, where the most recently added order will be highlighted orange.
- Click “Return Home” to return to the homepage

<u>Task 3: Add a Job & Checkout</u>

- On the homepage, click on the “Add Job” button.
- The "Start New Job” form will appear. Enter the desired information.
    - Customer: **select from the dropdown.**
    - Order: **select from the dropdown.**
    - Product: **select from the dropdown.**
    - Minimum Quantity: **Use spin buttons to change. [1,10] default 6**
- After the previous information is entered, a list box will populate.
    - This list box presents the user with the following:
        - The manufacturer, the cost, as well as the delivery to site date.
        - This information is sorted by lowest cost. (Transportation costs are included.)
        - This list box automatically filters out manufactures not meeting the minimum quality numbers, as well as those not being delivered before the project due date.
        - The user can click on the view all button to view all manufacturers and remove all filters.
        - Once the user identifies the manufacturer they would like to work with, simply click on it to highlight it and then click the add to job button to save it.
            - This will clear the list box to let the user know the information was stored.
            - Customer name, order name, and minimum quantity are kept.
            - Repeat the process for all product families.
    - Once all product families are added to the job, click on the review job button.
    - This will trigger the "Job Checkout” form, which shows the user the product family, the manufacturer, the cost, and the delivery date.

  - 

  - Here the user may go back to edit their order, go to the home page, or check out.
  - Once the checkout button is clicked, the user can see a job list with the customer's name, order name, the product family, the cost, as well as the facility.
  - Click on return home to go back to the homepage.

<u>Additional Tasks:</u>

- The hierarchy of the data is Customer -> Orders -> Jobs. Each job is attached to an order and each order is attached to a customer. This means that each customer can (and likely will) have multiple orders, and each order can have multiple jobs. This guide outlines a linear path of task 1(add customer), 2(add order), and 3(add job). However, due to the nature of our support system, a user could decide to perform the tasks in a way such as: 1,2,2,2,3,1,2,3
  - If a user has existing data stored from previous uses, they could even do the steps in an order like: 3,3,2,1
- Click on Go to Client List to view the client list
- Click on Go to Order List to view the order list
- Click on Go to Job List to view the job list.
- Click on view job stats to view a comprehensive summary of orders
  - Using the dropdown, select the facility you would like to update the product distribution graph for and click on the product distribution graph.
  - Click on the update product graph button to see a bar graph showing each product family and the amount ordered from SteelTime vs other manufacturers.
  - Click on orders by facility to update the graph showing how many orders have been made to each manufacturer.
- Click return home to return to the homepage.

How to edit existing orders in the system:

- Click edit order button
- From the dropdown, select:
  - Customer
  - Order name
- If you want to edit the due date, click on the checkbox, and enter the new due date.
- Click continue
- The “Set Order Steel Amount” form will repopulate, and you can follow the steps from task 2 and task 3.

Important: Each time the DSS is opened, and the user clicks on add client, a message box pops up asking if they want to clear all previous data. Click this only if you are sure you would like to clear all data. If not, keep using the DSS as desired. It saves the information previously entered.

Lessons Learned

- What went well?
  - From the beginning, our team was focused. We met early on, and developed blueprints of the features we wanted as well as what we wanted the project to look like. Every team member knew what they had to do and finished their work before the deadline.
- What didn't go well?
  - At first, it was difficult to determine the best way to work on the project collectively. It was trial and error, and some work did not save. We got around this by making a Teams group as well as a group chat, letting each other know when we started and stopped working on the shared file to ensure maximum compatibility.
- What features were you not able to add to your DSS that you originally thought you would include?
  - We were able to include everything we wanted into our DSS. This includes, but is not limited to, factoring in transportation costs, being able to edit the system, having due dates, sorting by different factors, creating a logo and color scheme, and having multiple dynamic graphs.