

TALLINN UNIVERSITY OF TECHNOLOGY
School of Information Technologies

Application for ordering sheet metal components
Web Applications Project

Author: Oskar Koit
Supervisor: Andres Käver

Tallinn 2024

I hereby certify that I am the sole author of this thesis. All the used materials, references to the literature and the work of others have been referred to. This thesis has not been presented for examination anywhere else.

Author: Oskar Koit

07.03.2024

1. Introduction

Ordering application for sheet metal components is a platform where it is possible to order any component that you have a 3D model for. Additional information is required about material and tolerances, a drawing with required information is also sufficient.

The purpose of this platform is initially to manage and supply small-scale or low-volume orders for existing clients across Europe, mainly to supply into western Europe while manufacturing the components in the eastern region.

1.1 Problem

Eastern European metal processing companies usually have a low turnover, which gives them the advantage to be flexible and compete for various small scale and project based or small series projects. However continuously winning small projects and maintaining the full production capacity can be challenging and occasionally drives overhead and management costs higher. This cycle can lead to partial layoffs or manufacturing at near zero profit margins. Finding new clients for a small-scale company that focuses on today rather than next year is usually out of their comfort zone and can be challenging.

1.2 Solution

Our platform offers an opportunity to the smaller manufacturers to focus on their main value generator – manufacturing. We offer them an opportunity to receive actual orders with one click. There is no need to go through the whole sales process, which might take up to a year for an actual order. Also there is no need to send us quotations, the fixed price is shown to the suppliers. Our price strategy for suppliers is that prices should be at a comfortable level. That way we ensure that most of our pending orders will be accepted by suppliers relatively quickly. This provides shorter lead times for our clients. For our advantage, we are not entitled to provide work for our suppliers.

Also our platform is a good way for suppliers to fill workloads for certain operations or to cash out idle materials that are no longer needed for bigger projects.

2. Scope of work

Scope for Web Application project does not include the 3D model to data parser. The data which determines the price will be entered manually by the client after which the price is calculated. Lead time for desired quantity will be determined by the capacity of our suppliers. Also the scope is further narrowed down to independent sheet metal parts. Also the scope does not cover the stock and goods movement in between Client-Application-Supplier.

2.1 Clients

Clients can insert products where they choose material type, thickness, weight of the part and operations needed to manufacture it. Finally PDF drawing will be attached. Price will be calculated instantly. Client can choose lead time from the calendar. First available date will be calculated from our suppliers capacity pool.

Client will receive an invoice after we have supplied the goods.

2.2 Suppliers

Suppliers only see these open order rows that their material range and operation pool covers, these orders have fixed price at which the supplier can choose to manufacture it. As an alternative solution supplier can enter their own adjusted price. This price can either be ignored or accepted by our employees. If accepted, the supplier is entitled to manufacture parts for the desired deadline.

Suppliers can add and remove both operations and materials that they are capable of processing. They can also change capacity of their operations, for example suppliers laser cutting can be available on our platform 10 hours each week.

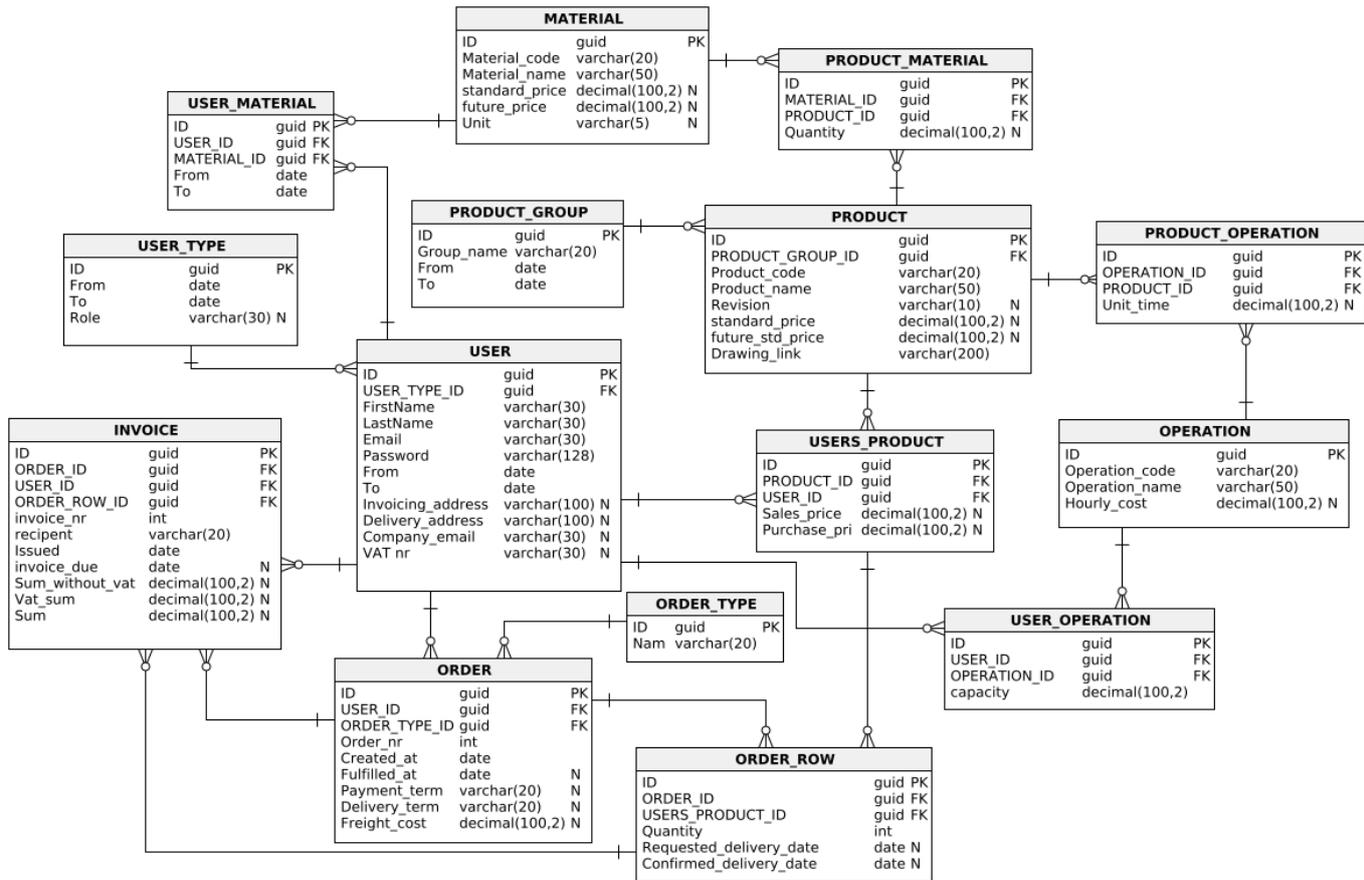
2.3 Application managers

Users who manage the application can set theoretical prices to work centers from which the sales price is calculated. These users also set theoretical material prices and change their future and standard prices based on the market situation. Application managers can also accept increased prices that are offered by suppliers. In this case, the open order will be bound to that supplier and it will disappear from the open orders list.

2.4 Prices

Firstly for each part our own prices are calculated. For the standard price we calculate what it would cost on the market to manufacture it. Future standard price determines what the part would cost in the future. For all cases the higher price will be used to calculate the sales price to our client.

3. ERD Scheme



4. Screen Sketches

4.1 Login

Join / Sign In

CREATE ACCOUNT Get a **\$5.00** Welcome Bonus*

Email Address*

Create Password*

Confirm Password*

Local Language Support

English ▼

I'm not a robot 
reCAPTCHA
[Privacy](#) - [Terms](#)

Sign Up

By creating an account, you agree to the [Terms of Service](#) and [Privacy Policy & Agreement](#)
Uploading weapons or parts subject to export control regulations such as [ITAR](#), [EAR](#) beyond [EAR99](#), or [EU Dual Use](#) is a violation of our [terms of use](#)

SIGN IN

Email Address*

Password *

Keep me signed in [Forgot password?](#)

Sign In

OR

 **Connect with Facebook**

4.2 Adding a product for quotation

* Quantity: + Add another quantity

Design Units: mm inch cm

* Material:

Aluminum **Stainless steel** Brass Copper Titanium Mild steel Alloy steel Tool steel

Spring steel ABS Polycarbonate (PC) Nylon Polypropylene (PP) POM PTFE (Teflon)

PMMA (Acrylic) Polyethylene (PE) PEEK Bakelite FR4 Rubber

Type of Stainless steel

Stainless steel 304 **Stainless steel 316/316L** Stainless steel 303 Stainless steel 430

Stainless steel 201

* Color: **Silver**

<p>Selected material</p>  <p>Stainless steel 316/316L Show material description</p>	<p>Surface finish - 22 options ⚠ Discrepancy warning</p>  <p>Powder coat - Matt(PANTONE Green U) <input type="text" value="Green U"/> <input type="button" value="x"/></p>
---	---

Technical drawing: Please note that your 3D file and part specifications selected on this screen (eg. surface finish) will take priority over your technical drawing. Please ensure your technical drawing is up-to-date.

* Threads and Tapped Holes: **Do your parts need to tap threads?**
Please specify if your part has any internal or external threads. PCBWay will not bear any assembly risk if it is a non-standard thread, unless all assembly parts are produced and assembled here. [e.g.](#)

No Yes

* Inserts: Please specify the standard inserts in your part. [e.g.](#)

No Yes

* Tolerance: Tolerances will be controlled with **ISO 2768-1**. For other tighter tolerances, technical drawing will be required to indicate critical dimensions.

No tighter tolerances required (ISO 2768-1)

Tighter tolerances required

* Surface Roughness: Surface roughness will be controlled into **250uin/6.3um Ra** unless you have other surface roughness required. [e.g.](#)

250uin/6.3um Ra 125uin/3.2um Ra 63uin/1.6um Ra 32uin/0.8um Ra

Part Marking: Silkscreen
 Laser engraving

* Parts assembly: **No** Assembly test Ship in assembly

Finished appearance: **Standard**
Normal processing traces or scratches caused during production, or subtle traces left after surface finish. [e.g.](#)

Premium (Extra charges)
Higher appearance requirements, the surface is clean and smooth without obvious flaws. (Except for the inherent anodizing rack marks). Photos will be sent to confirm before shipment. [e.g.](#)

Inspection: The inspection report will not be sent out with your parts unless you need it.

Standard Inspection (No report)

- No extra fee
- PCBWay will do the dimension and surface feature inspections based on the drawings provided by the customer.

Standard Inspection with Formal Report

- \$50 Pay extra
- 2D technical drawings are required.

4.3.1 Client and supplier general view

My Account | Orders List | Delivery Address | Help Center | Account Settings

ORDERS

- Under Review(0)
- Awaiting Payment (0)
- Uncompleted Payment (0)
- Production Status (0)
- Delivery (0)
- Completed (0)
- Manage Feedback
- Refunds & Disputes (0)
- Wish List (0)

SPECIALS

- Message Center
- Notifications
- Gift Shop



Hi, Dear
user ID: W662441A
[My community](#)

Dashboard

Balance (USD)
\$ 0.00

Commission for shared PCB
\$0.00 (+0.00)

Recently added
+0.00

Discount Balance
\$0.00 (+0.00)

My Coupons (1)

My Beans: (0) Redeem Electronic Module

Unread Messages: 0

0
Under Review

0
Awaiting Payment

0
Production Status

0
Engineering Question

0
Delivery

0
Awaiting Feedback

4.3.2 Client and supplier Payments page

My Account | PCB Instant Quote | Get Assembly Quote | CNC | 3D Printing | Orders List | Delivery Address | Help Center | Account Settings

ORDERS

- Under Review(0)
- Awaiting Payment (0)
- Uncompleted Payment (0)
- Production Status (0)
- Delivery (0)
- Completed (0)
- Manage Feedback
- Refunds & Disputes (0)
- Wish List (0)

SPECIALS

- Message Center
- Notifications
- Gift Shop
- My Coupons
- PCBWay Rewards
- Connect (Suggestions)

My Orders

0
Under Review

0
Awaiting Payment

0
Uncompleted Payment

0
Production Status

0
Engineering Question

0
Delivery

S Uncompleted Payment

Order ID/Product No.: PCB file Name: PO Number: Search

Product	Product Action	Order Status	Order Action
Your search didn't match any listings.			

4.4 User account page

Basic Information [Change Password](#) [Notification settings](#) [Change registered email](#)

 Filling in the following information will help you get more accurate service, and you'll get coupons up to **35USD**. The more complete information you fill in, the bigger amount of coupon you'll get. (Coupons are only issued once on the first submission.)

Information integrity  20%

Basic Information



Upload Picture

Maximum 500Kb or 1:1 in size.

User ID W662441A

Email oska*****@gmail.com [Verify Email](#) | [Change registered email](#)

* First name * Last name

* Customer Type

* Industries
[+ Add an industry](#)

* Order Preference Prototyping Small Batch Bulk Order Multiple choices

How do you hear about us?

Contact Information

* Country/Region

Gender Male Female Secrecy

Telephone No.