University of Science – Vietnam National University
Faculty of Information Technology

CS423 – Software Testing
HW01 Report

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A. Environment Description

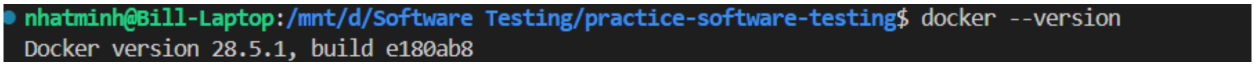
1. Hardware

- CPU: Intel(R) Core(TM) i7-8650U CPU @ 1.90GHz (2.11 GHz)
- RAM: 16.0 GB (15.9 GB usable)
- OS: Windows 11 Pro (Version 24H2)

2. Software

2.1 Container/Orchestration

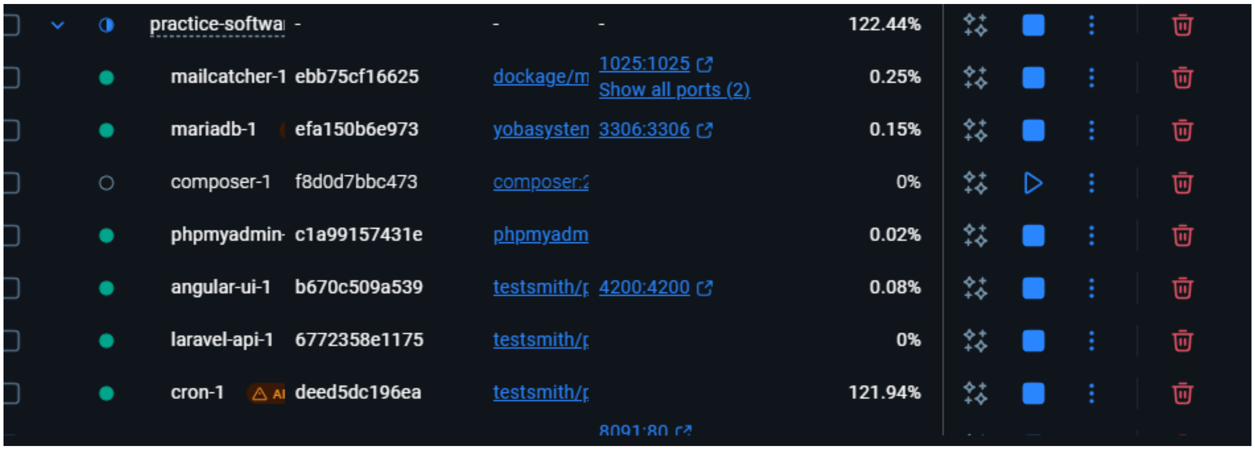
- Docker Desktop 4.47.0
- Engine Version: 28.5.1, build e180ab8
- Docker Compose v2



```
nhatminh@Bill-Laptop:/mnt/d/Software Testing/practice-software-testing$ docker --version
Docker version 28.5.1, build e180ab8
```

2.2 Application Stack (Managed by Docker)

- Frontend: Angular
  - ○ Served via `ng serve` on port 4200
- Backend: Laravel (PHP)
  - ○ Running in the `laravel-api` container
- Database: MariaDB (MySQL-compatible)
  - ○ Running in the `mariadb` container
- Web Layer: `web` service
  - ○ Maps ports 8091:80 and 8000:81
  - ○ Image: `testsmith/practice-software-testing-web`

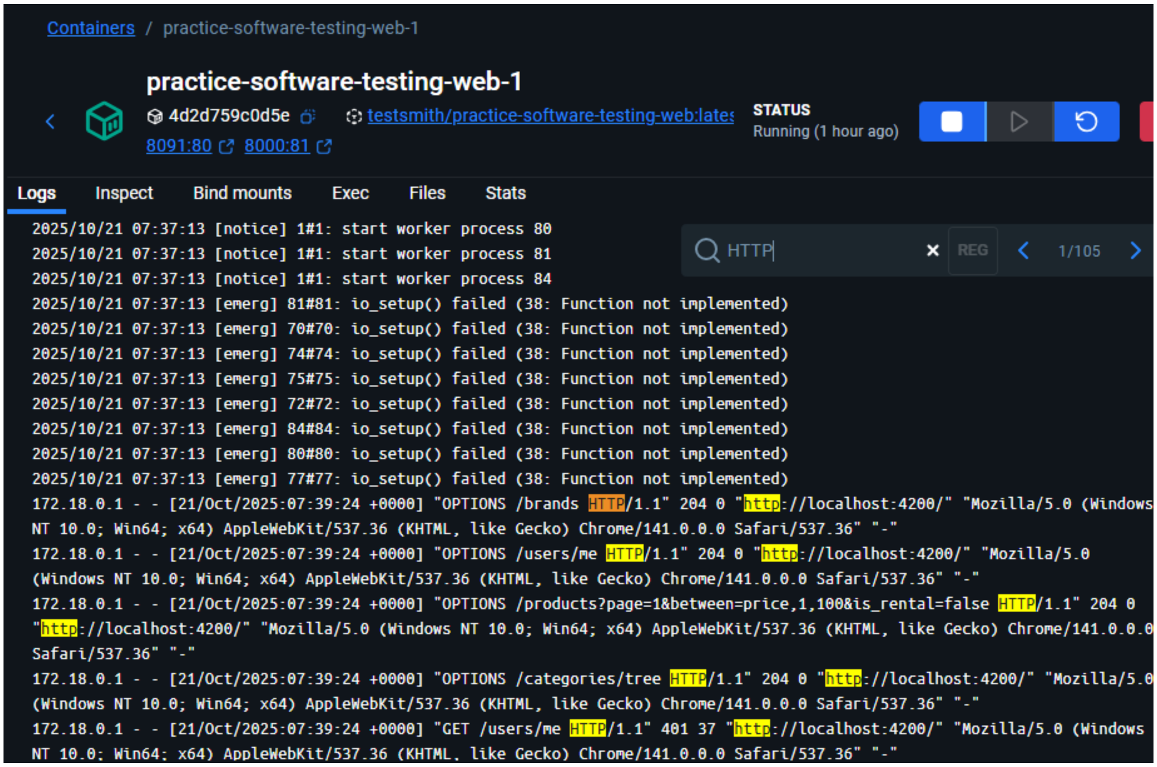


◑	practice-softwa	-	-	-	122.44%
●	mailcatcher-1	ebb75cf16625	dockage/m	1025:1025 Show all ports (2)	0.25%
●	mariadb-1	efa150b6e973	yobasysten	3306:3306	0.15%
○	composer-1	f8d0d7bbc473	composer:2		0%
●	phpmyadmin-	c1a99157431e	phpmyadm		0.02%
●	angular-ui-1	b670c509a539	testsmith/p	4200:4200	0.08%
●	laravel-api-1	6772358e1175	testsmith/p		0%
●	cron-1 ⚠ AI	deed5dc196ea	testsmith/p		121.94%
				8091:80	

2.3 Protocol & Behavior

- Serves HTTP/1.1 traffic
  - ○ Handles CORS preflight OPTIONS requests from Angular frontend (`localhost:4200`)

- Responds with standard HTTP codes:
  - `200 OK` for GET requests
  - `204 No Content` for OPTIONS requests
- Traffic originates from Docker bridge network (`172.18.0.1`)
- Supports RESTful API endpoints:
  - `/users`, `/brands`, `/products`, `/categories`, `/invoices`



Containers / practice-software-testing-web-1

practice-software-testing-web-1

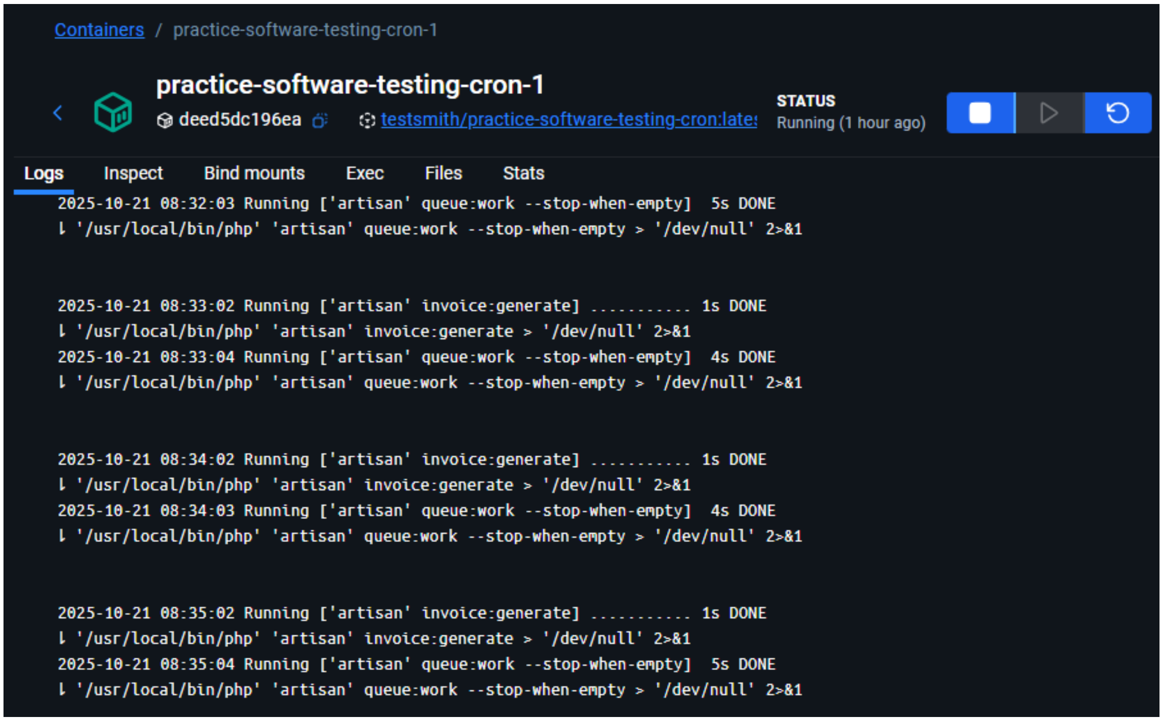
4d2d759c0d5e testsmith/practice-software-testing-web:lates
8091:80 8000:81

STATUS
Running (1 hour ago)

```
2025/10/21 07:37:13 [notice] 1#1: start worker process 80
2025/10/21 07:37:13 [notice] 1#1: start worker process 81
2025/10/21 07:37:13 [notice] 1#1: start worker process 84
2025/10/21 07:37:13 [emerg] 81#81: io_setup() failed (38: Function not implemented)
2025/10/21 07:37:13 [emerg] 70#70: io_setup() failed (38: Function not implemented)
2025/10/21 07:37:13 [emerg] 74#74: io_setup() failed (38: Function not implemented)
2025/10/21 07:37:13 [emerg] 75#75: io_setup() failed (38: Function not implemented)
2025/10/21 07:37:13 [emerg] 72#72: io_setup() failed (38: Function not implemented)
2025/10/21 07:37:13 [emerg] 84#84: io_setup() failed (38: Function not implemented)
2025/10/21 07:37:13 [emerg] 80#80: io_setup() failed (38: Function not implemented)
2025/10/21 07:37:13 [emerg] 77#77: io_setup() failed (38: Function not implemented)
172.18.0.1 - - [21/Oct/2025:07:39:24 +0000] "OPTIONS /brands HTTP/1.1" 204 0 "http://localhost:4200/" "Mozilla/5.0 (Windows
NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/141.0.0.0 Safari/537.36" "-"
172.18.0.1 - - [21/Oct/2025:07:39:24 +0000] "OPTIONS /users/me HTTP/1.1" 204 0 "http://localhost:4200/" "Mozilla/5.0
(Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/141.0.0.0 Safari/537.36" "-"
172.18.0.1 - - [21/Oct/2025:07:39:24 +0000] "OPTIONS /products?page=1&between=price,1,100&is_rental=false HTTP/1.1" 204 0
"http://localhost:4200/" "Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/141.0.0.0
Safari/537.36" "-"
172.18.0.1 - - [21/Oct/2025:07:39:24 +0000] "OPTIONS /categories/tree HTTP/1.1" 204 0 "http://localhost:4200/" "Mozilla/5.0
(Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/141.0.0.0 Safari/537.36" "-"
172.18.0.1 - - [21/Oct/2025:07:39:24 +0000] "GET /users/me HTTP/1.1" 401 37 "http://localhost:4200/" "Mozilla/5.0 (Windows
NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/141.0.0.0 Safari/537.36" "-"
```

2.4 Cron Jobs

- `cron` service runs scheduled Laravel tasks
- Executes artisan commands such as:
  - `invoice:generate`
  - `queue:work --stop-when-empty`
- Cron runs inside the same Laravel code volume (`laravel-app-code`) as backend



practice-software-testing-cron-1

deed5dc196ea testsmith/practice-software-testing-cron:lates

STATUS
Running (1 hour ago)

```
2025-10-21 08:32:03 Running ['artisan' queue:work --stop-when-empty]  5s DONE
↓ '/usr/local/bin/php' 'artisan' queue:work --stop-when-empty > '/dev/null' 2>&1


2025-10-21 08:33:02 Running ['artisan' invoice:generate] ........... 1s DONE
↓ '/usr/local/bin/php' 'artisan' invoice:generate > '/dev/null' 2>&1
2025-10-21 08:33:04 Running ['artisan' queue:work --stop-when-empty]  4s DONE
↓ '/usr/local/bin/php' 'artisan' queue:work --stop-when-empty > '/dev/null' 2>&1


2025-10-21 08:34:02 Running ['artisan' invoice:generate] ........... 1s DONE
↓ '/usr/local/bin/php' 'artisan' invoice:generate > '/dev/null' 2>&1
2025-10-21 08:34:03 Running ['artisan' queue:work --stop-when-empty]  4s DONE
↓ '/usr/local/bin/php' 'artisan' queue:work --stop-when-empty > '/dev/null' 2>&1


2025-10-21 08:35:02 Running ['artisan' invoice:generate] ........... 1s DONE
↓ '/usr/local/bin/php' 'artisan' invoice:generate > '/dev/null' 2>&1
2025-10-21 08:35:04 Running ['artisan' queue:work --stop-when-empty]  5s DONE
↓ '/usr/local/bin/php' 'artisan' queue:work --stop-when-empty > '/dev/null' 2>&1
```

3. Network / Hosting

- Deployment: Localhost via Docker
- Exposed Ports:
  - 4200: Frontend (Angular Application)
  - 8091: Backend (REST API)
  - 8000: PHPMyAdmin (Database Admin)
  - 1080: MailCatcher (Email Client)
  - 3306: MariaDB (Database)

B. Setup & Deployment Steps

The following steps were executed from a clean clone of the repository on the environment described in Section A.

1. Clone Repository

The system under test (SUT) was cloned from GitHub:

```
git clone https://github.com/testsmith-io/practice-software-testing.git
```

2. Navigate to Project Directory

```
cd practice-software-testing
```

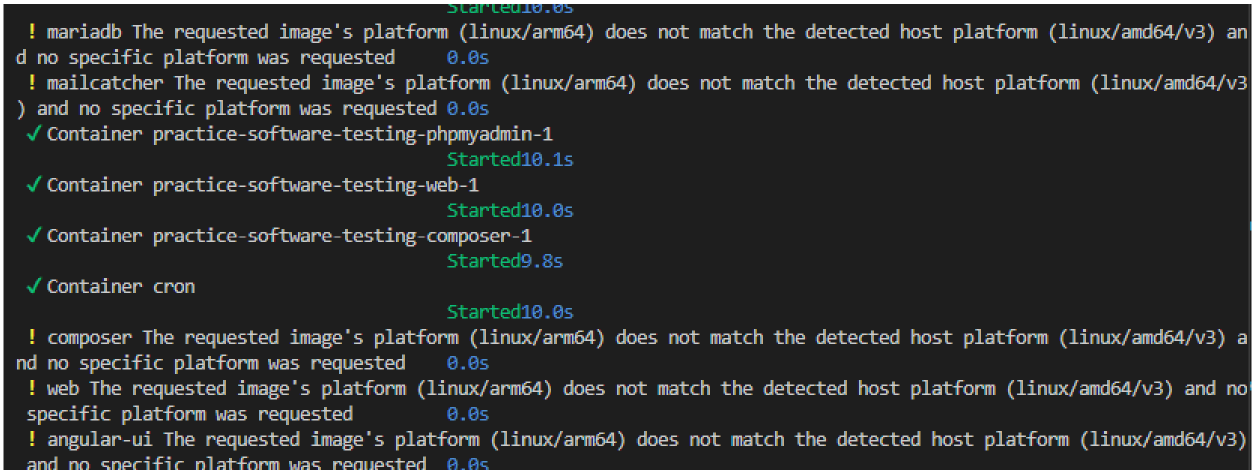
3. Build and Run Containers

The application containers were built and started using the `--build` flag to force a clean build and resolve dependency issues:

```
docker compose up-d –build
docker compose-f docker-compose.yml up –d
```

The second command is for bare minimum set up

Observed Warnings (from a clean machine):



```
                                                  Started10.0s
 ! mariadb The requested image's platform (linux/arm64) does not match the detected host platform (linux/amd64/v3) an
d no specific platform was requested     0.0s
 ! mailcatcher The requested image's platform (linux/arm64) does not match the detected host platform (linux/amd64/v3
) and no specific platform was requested 0.0s
 ✓ Container practice-software-testing-phpmyadmin-1
                                                  Started10.1s
 ✓ Container practice-software-testing-web-1
                                                  Started10.0s
 ✓ Container practice-software-testing-composer-1
                                                  Started9.8s
 ✓ Container cron
                                                  Started10.0s
 ! composer The requested image's platform (linux/arm64) does not match the detected host platform (linux/amd64/v3) a
nd no specific platform was requested    0.0s
 ! web The requested image's platform (linux/arm64) does not match the detected host platform (linux/amd64/v3) and no
 specific platform was requested         0.0s
 ! angular-ui The requested image's platform (linux/arm64) does not match the detected host platform (linux/amd64/v3)
 and no specific platform was requested  0.0s
```

Note: The images from the GitHub repository are built for `linux/arm64` (likely MacOS architecture). Running them on `linux/amd64` (current host) may lead to reduced performance due to emulation. However, *basic web application functionality, connections, and usage remain operational and smooth in our testing.*

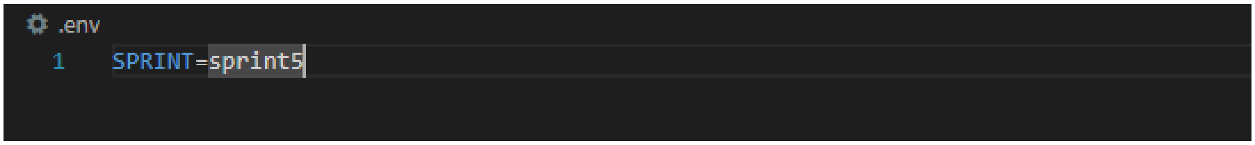
4. Production Setup

To use prebuilt Docker images for production:

```
docker compose-f docker-compose.prod.yml up--pull missing-d
```

Environment variables:

.env file sets `*SPRINT=sprint5*` by default

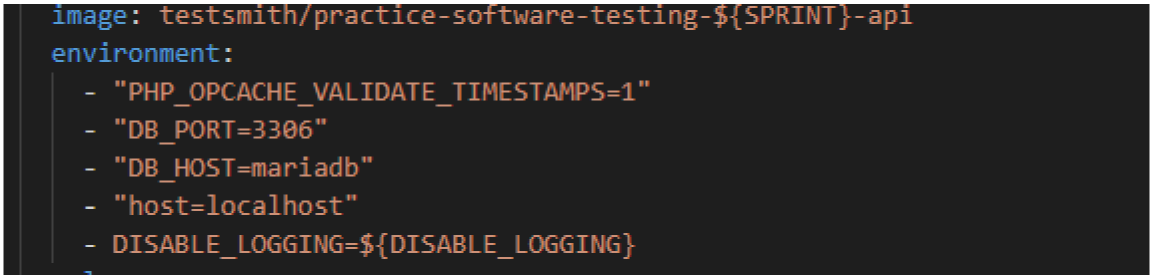


```
⚙ .env
  1    SPRINT=sprint5
```

`*DISABLE_LOGGING*` is not set by default and can be assigned for testing purposes

Observed Warnings:

WARN[0000] The "DISABLE_LOGGING" variable is not set. Defaulting to a blank string.



```
    image: testsmith/practice-software-testing-${SPRINT}-api
    environment:
      - "PHP_OPCACHE_VALIDATE_TIMESTAMPS=1"
      - "DB_PORT=3306"
      - "DB_HOST=mariadb"
      - "host=localhost"
      - DISABLE_LOGGING=${DISABLE_LOGGING}
```

WARN[0000] /mnt/.../docker-compose.yml: the attribute `version` is obsolete; it will be ignored

WARN[0001] Found orphan containers ([cron, phpmyadmin, mailcatcher]); use --remove-orphans to clean

Notes:

- The `version: 2` attribute in `docker-compose.yml` is obsolete; consider commenting it out to avoid future debugging issues.
- Orphan containers are leftover from previous Compose projects and can be removed with `*--remove-orphans*`.

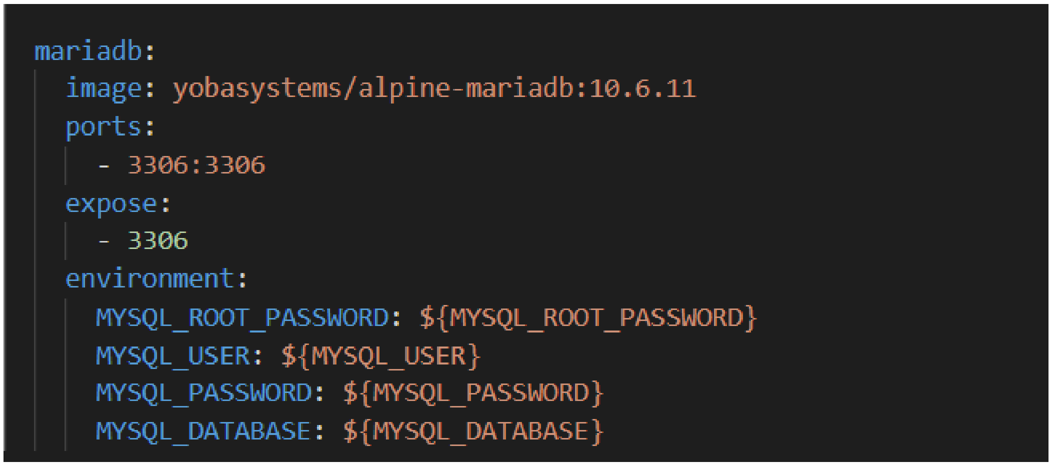
5. Run Database Migrations & Seeding

- Initialize and populate the backend database with sample data:

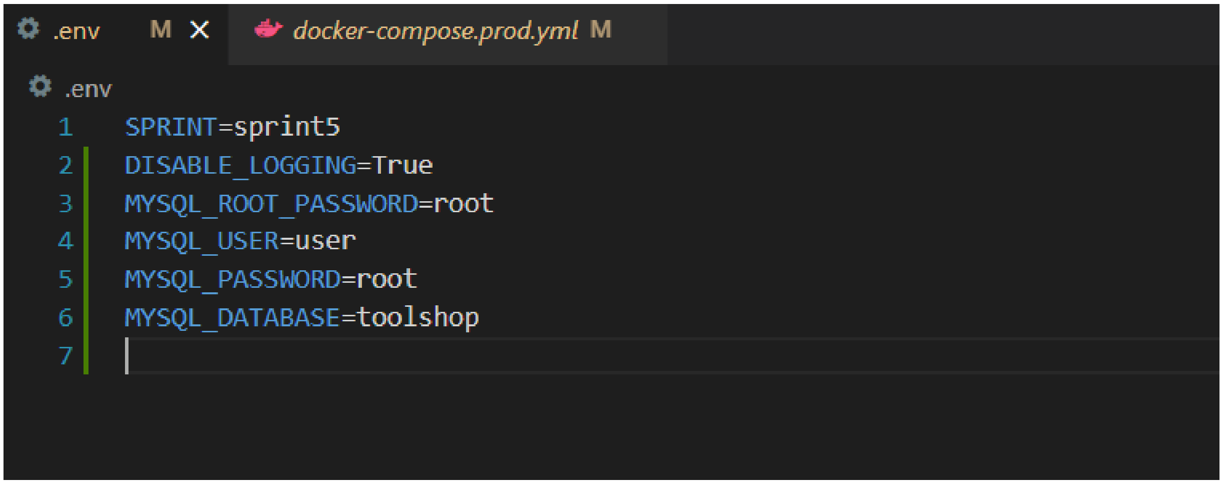
```
docker compose exec laravel-api php artisan migrate:fresh--seed
```

- No manual `.env` or environment variable changes were required
- All necessary configuration (e.g., database host, username, password) is pre-set in `docker-compose.yml` and used internally by the containers

To securely manage sensitive database information, such as passwords and user credentials, it is recommended to store these values in a separate .env file rather than directly in the docker-compose.yml file. The .env file contains key-value pairs for all sensitive and configurable parameters:



```
mariadb:
  image: yobasystems/alpine-mariadb:10.6.11
  ports:
    - 3306:3306
  expose:
    - 3306
  environment:
    MYSQL_ROOT_PASSWORD: ${MYSQL_ROOT_PASSWORD}
    MYSQL_USER: ${MYSQL_USER}
    MYSQL_PASSWORD: ${MYSQL_PASSWORD}
    MYSQL_DATABASE: ${MYSQL_DATABASE}
```



```
SPRINT=sprint5
DISABLE_LOGGING=True
MYSQL_ROOT_PASSWORD=root
MYSQL_USER=user
MYSQL_PASSWORD=root
MYSQL_DATABASE=toolshop
```

- Initial migration failed:

  Fatal error: Failed opening required '/var/www/vendor/autoload.php'

Cause: PHP dependencies (`vendor` folder) were not installed in the `laravel-api` container

Resolution: Stop all services (`docker compose down`) and rebuild containers with `--build`. This ensures `composer install` runs correctly during build.

- Manual dependency installation attempts (e.g., `composer install`) failed

Cause: Container build state was incomplete

Resolution: Complete rebuild of containers solved the issue and generated the required `vendor` folder

C. Evidence of a Successful Deployment (Screenshots)

Each screenshot below verifies the operational status of the SUT, clearly showing the page content, the browser URL, and the system timestamp.

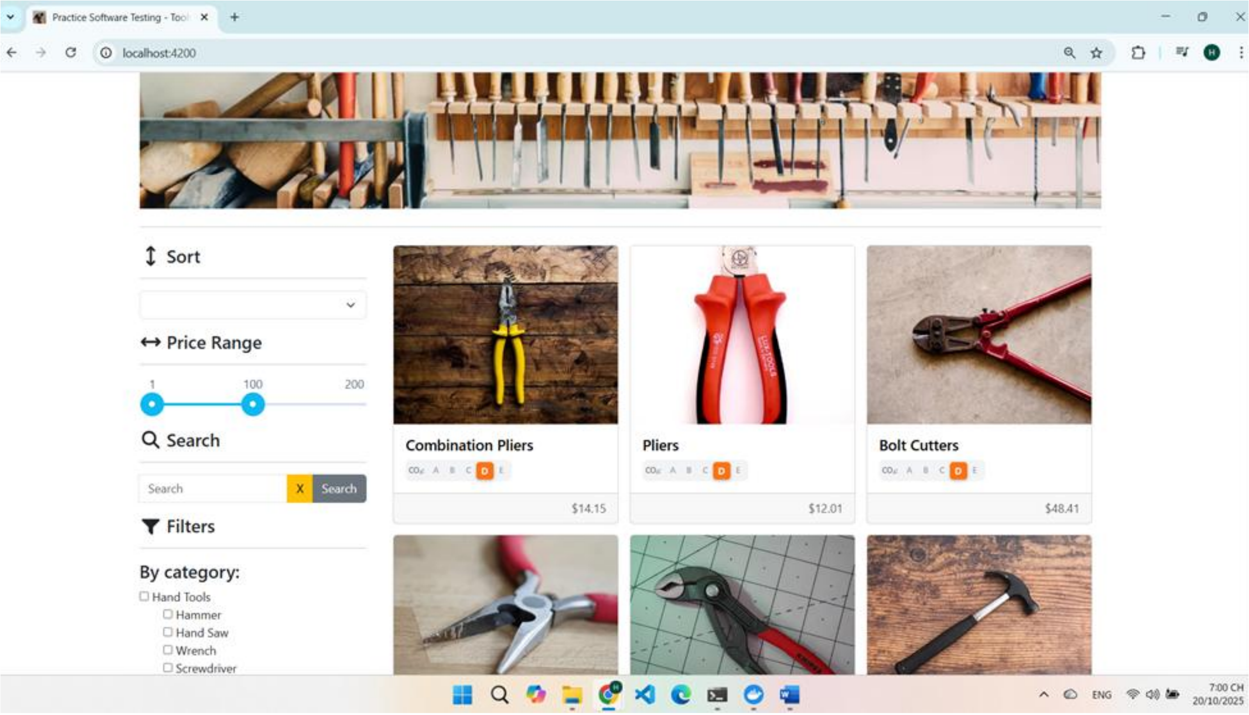
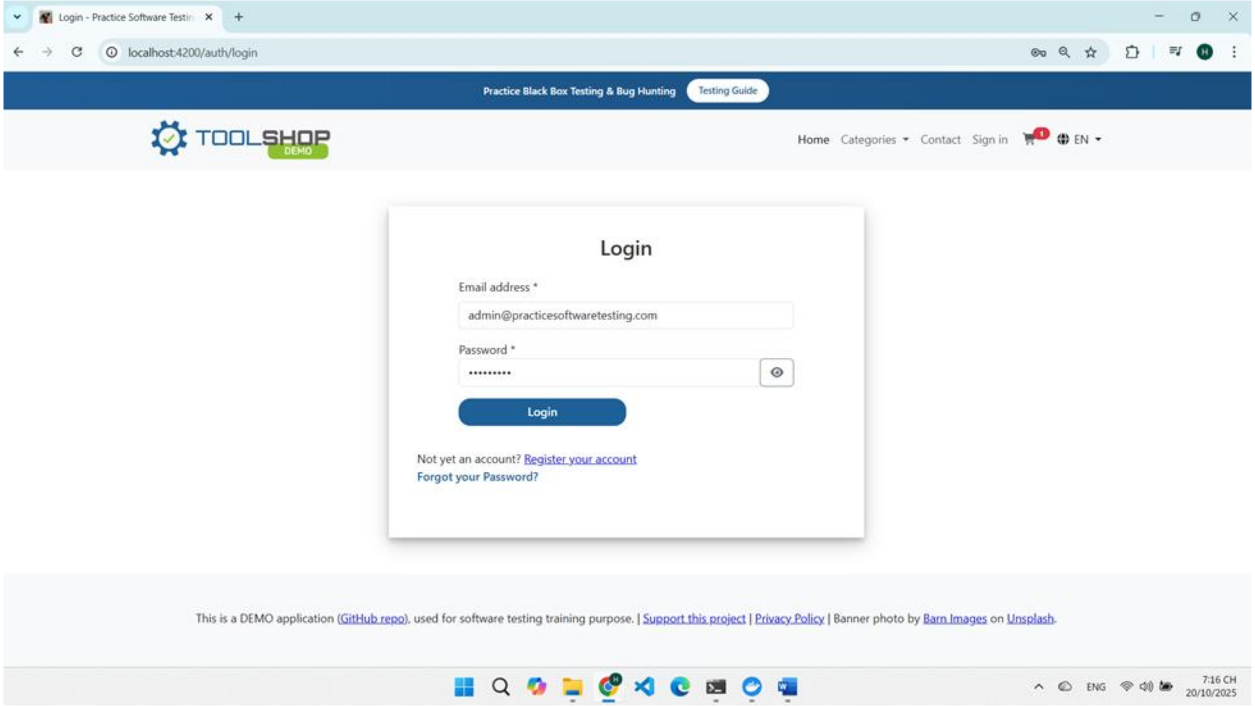


Figure 1: Home/Landing Page

SUT Homepage: Products successfully loaded, showing visible URL (localhost:4200) and system timestamp.


Login - Practice Software Testin
localhost:4200/auth/login
Practice Black Box Testing & Bug Hunting
Testing Guide
TOOLSHOP
DEMO
Home
Categories
Contact
Sign in
EN
Login
Not yet an account? Register your account
Forgot your Password?
ENG
7:16 CH
20/10/2025

Login

Email address *

admin@practicesoftwaretesting.com

Password *

•••••••••

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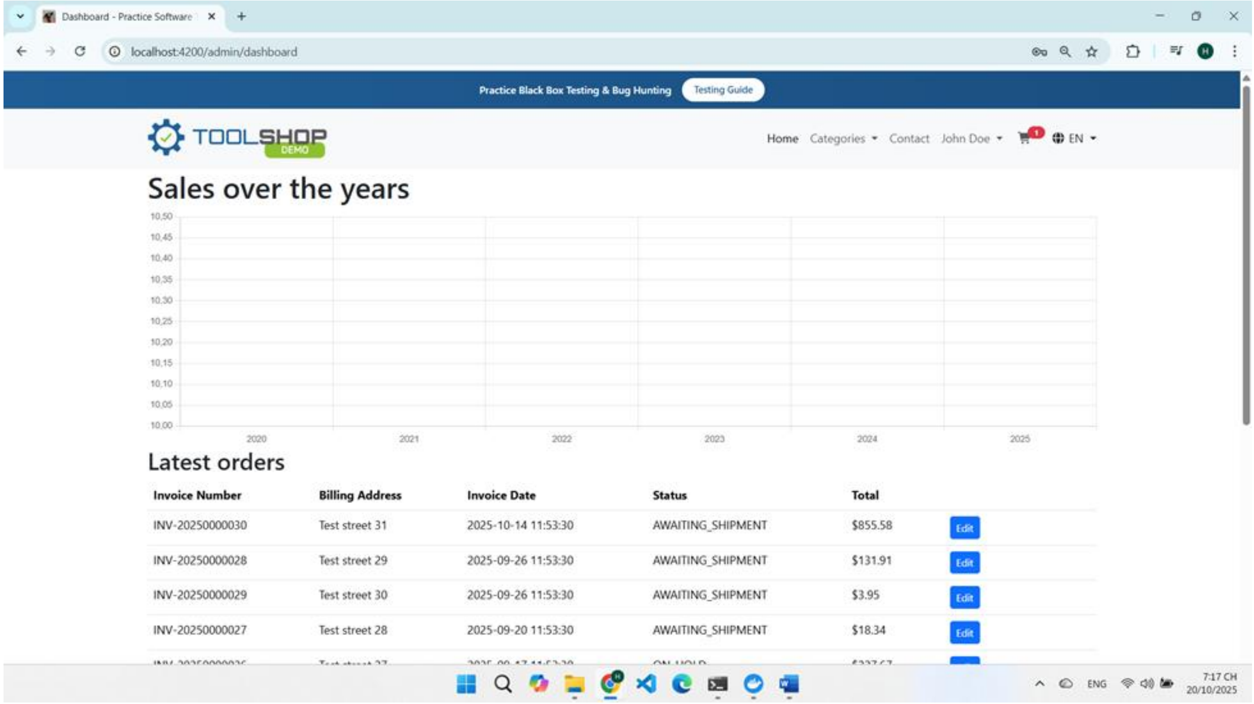
Figure 2: Login/Auth Page

Authentication Page: Login interface confirming the availability of user entry points.

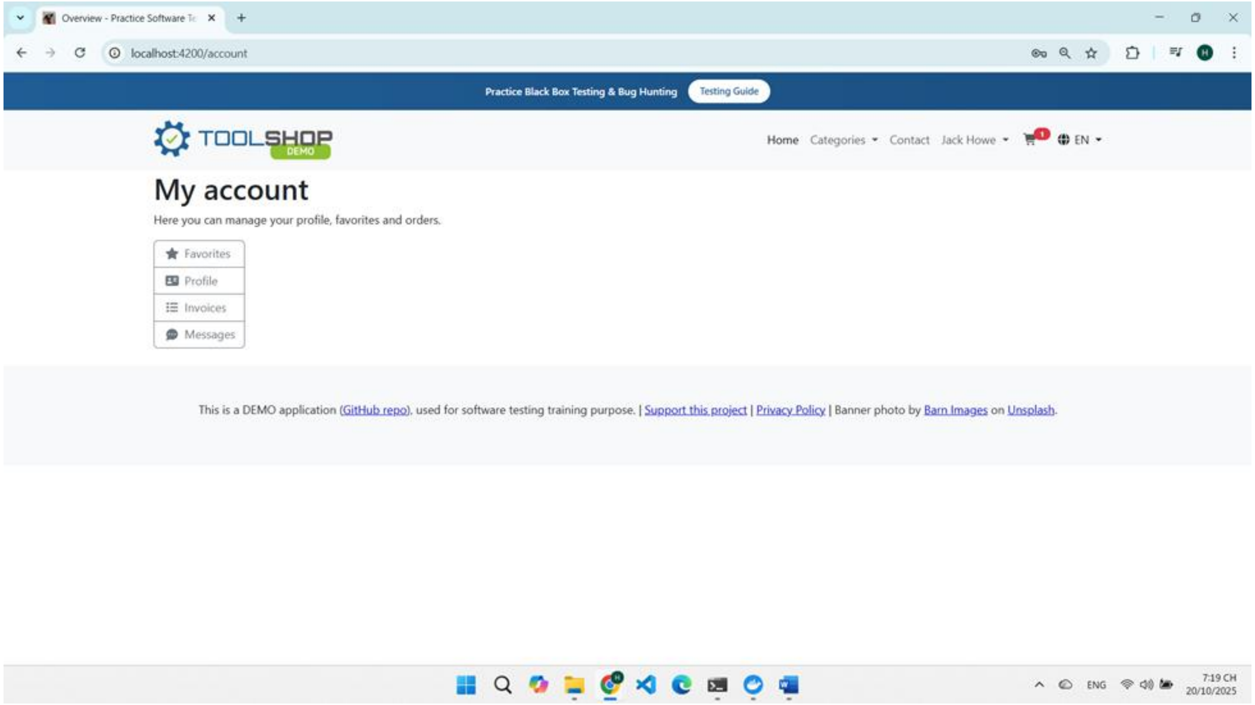


Latest orders

Invoice Number	Billing Address	Invoice Date	Status	Total	
INV-20250000030	Test street 31	2025-10-14 11:53:30	AWAITING_SHIPMENT	$855.58	Edit
INV-20250000028	Test street 29	2025-09-26 11:53:30	AWAITING_SHIPMENT	$131.91	Edit
INV-20250000029	Test street 30	2025-09-26 11:53:30	AWAITING_SHIPMENT	$3.95	Edit
INV-20250000027	Test street 28	2025-09-20 11:53:30	AWAITING_SHIPMENT	$18.34	Edit

Figure 3: Admin Dashboard

Admin Main Screen: Dashboard overview (Sales over the years/Latest orders) accessible post-login.



My account

Here you can manage your profile, favorites and orders.

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Figure 4: Customer Main Screen

Customer Main Screen: The My Account area or main shop interface accessible by a standard user.

D. Roles & Available Functions

The Software Under Test (SUT) supports three main user roles: Admin, Customer (User), and Guest (Unauthenticated).

1. **Role: Admin**

   Role's Purpose: To manage, maintain, and configure the critical operations of the store. This role is responsible for Business Asset Management (overseeing the Catalog); Operational Oversight (processing Orders and providing direct user support via Messages); and System Administration (managing Users, analyzing Reports, and configuring System Settings).

   Accessible Functions/Features:

   - View products
   - See products' details
   - Sort, search, filter products
   - Add products to cart
   - View cart's products
   - Remove products from cart
   - Check out products
   - Change the language
   - Access contact page and send messages
   - Add products to favourites

- View “Dashboard” page to see sales over year and manage latest orders (view orders’ info and update status of them)
- View “Brands” page, search/add/edit/delete brands
- View “Categories” page, search/add/edit/delete categories
- View “Products” page, search/add/edit/delete products
- View “Orders” page, search/add/edit/delete orders
- View “Users” page, search/add/edit/delete users
- View “Messages” page, view detail of messages, change status and reply to them
- Access “Settings” page and change some general features
- View reports of Statistics, Average sales per month/week (can change the year)

Or we can summarize the functions as:

- **Catalog Management (CRUD):** Full management (search/add/edit/delete) of *Brands, Categories,* and *Products*.
- **Order Fulfillment:** View all *Orders*, manage order information, and update the status of orders.
- **System Administration:** Full management (search/add/edit/delete) of *Users*.
- **Reporting & Strategy:** View the *Dashboard* overview, and access detailed *Reports* (Statistics, Average sales, etc.).
- **System Configuration:** Access *Settings* to change general features (e.g., payment endpoints, sustainability options).
- **Customer Support:** View, manage status, and reply to *Messages* sent by users via the contact page.

Credentials: We used the admin account given from the Github repository.

2. **Role: User**

Role’s purpose: The Customer role's purpose is to browse the catalog, make purchases, manage personal profile information, and track all related transactions.

Accessible Functions/Features:

- View products
- See products’ details
- Sort, search, filter products
- Add products to cart
- View cart’s products
- Remove products from cart
- Check out products
- Change the language
- Access contact page and send messages
- Add products to favourites
- Access “My account” page

- Access "My favourites" page and remove products
- Access "My profile" page, update profile information, change password and add two-factor authentication
- Access "My invoice" page and view detail of invoices
- Access "My messages" page, view detail of messages and reply to them

Or we can summarize the functions as:

- **Browsing & Search:** View products on the Home page, use Sort, Search, and Filter functions.
- **Shopping Flow:** Add/Remove products from cart, View cart, and Check out products.
- **Personalization:** Add/Remove products to the Favourites list.
- **Account Management:** Access My account, update My profile (including password and two-factor authentication), and view My messages.
- **Transaction History:** Access My invoice page to view and track transaction details.

Credentials: We used the user account given from the Github repository.

3. **Role: Guest**

Role's purpose: The Guest role's purpose is to explore the public-facing content and product catalog without needing to create an account.

Accessible Functions/Features:

- Access the "Sign in" and "Register" pages
- Sign in or register a new account
- Go to forgot password page
- View products
- See products' details
- Sort, search, filter products
- Add products to cart
- View cart's products (but need to log in to check out)
- Remove products from cart
- Change the language
- Access contact page and send messages

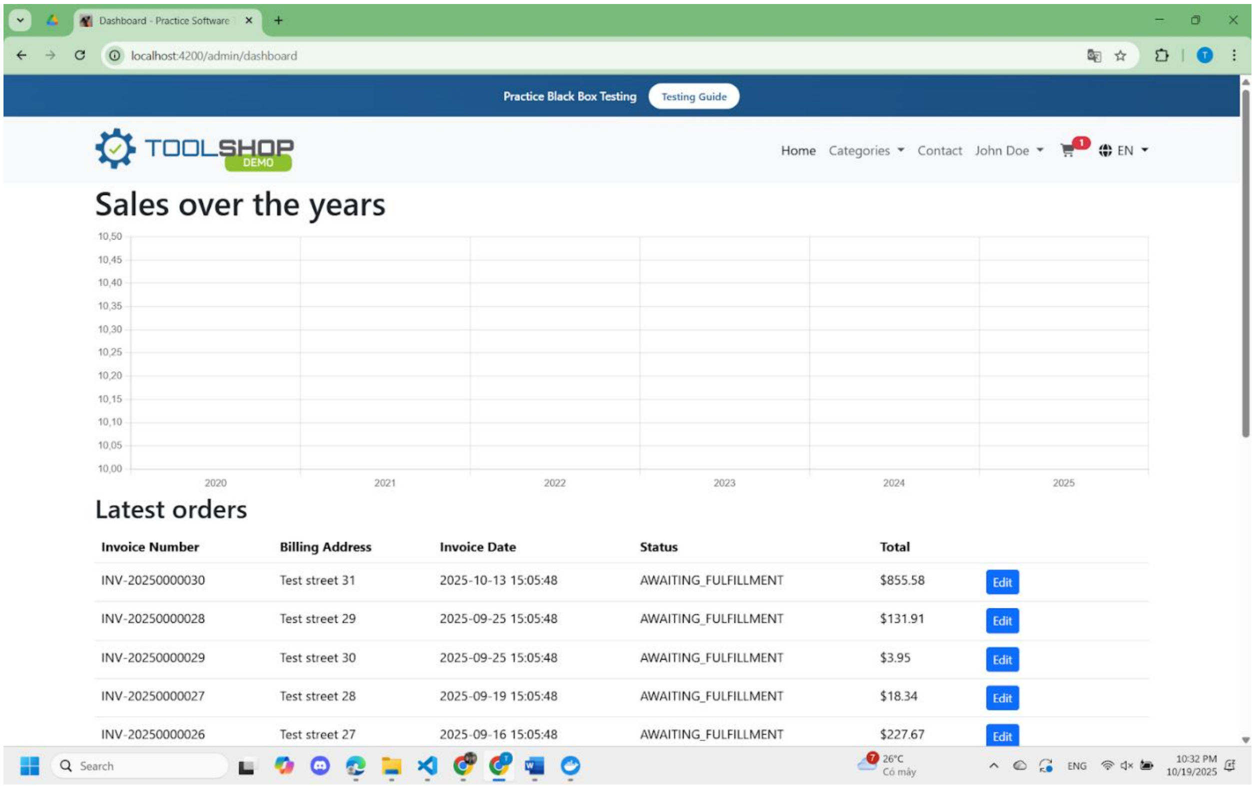
Or we can summarize the functions as

- **Browsing & Discovery:** View products, Sort, search, and filter the product catalog, and see product details.
- **Pre-Authentication:** Access the Sign in, Register, and Forgot password pages.
- **Cart Interaction:** Add/Remove products from cart and view cart contents (Checkout is blocked until authenticated).
- **Communication:** Use the public Contact form to send messages.

Credentials: No authentication is required.

E. Main Screens per Role (Screenshots)

1. Admin

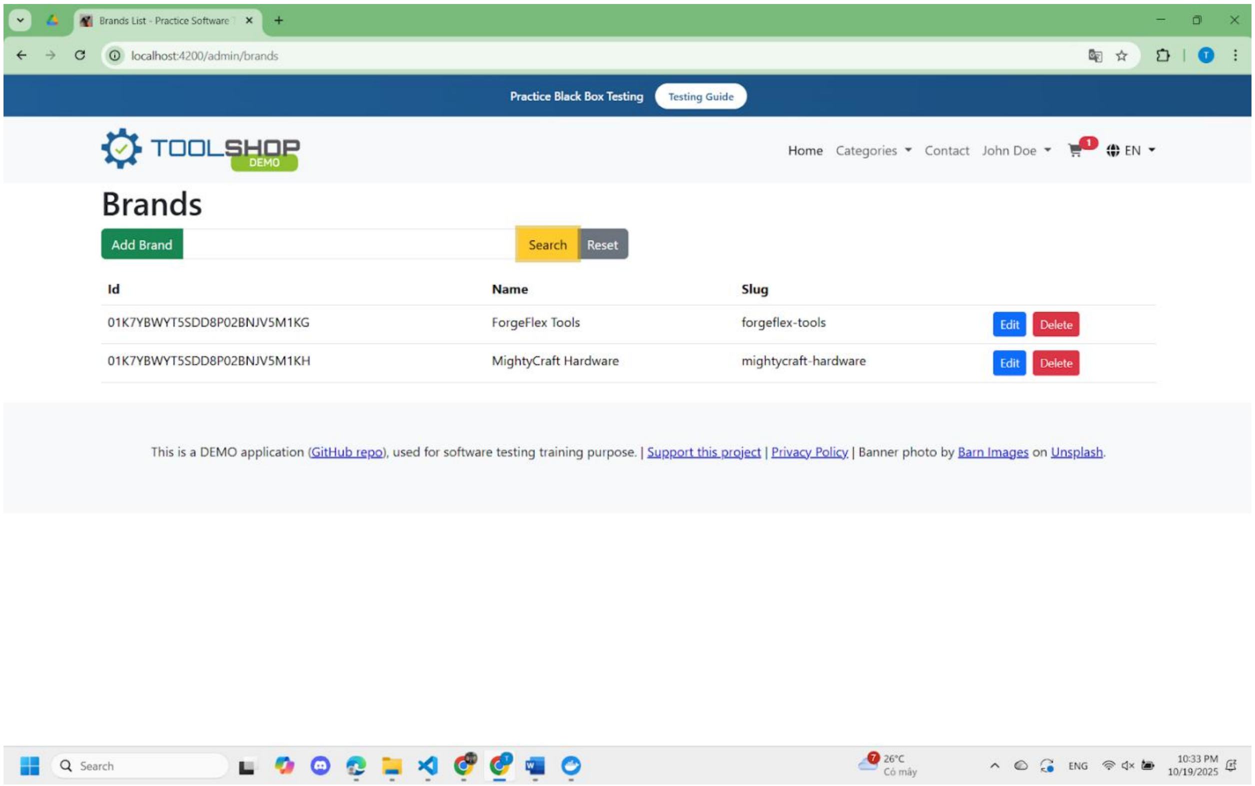


Sales over the years

Latest orders

Invoice Number	Billing Address	Invoice Date	Status	Total	
INV-20250000030	Test street 31	2025-10-13 15:05:48	AWAITING_FULFILLMENT	$855.58	Edit
INV-20250000028	Test street 29	2025-09-25 15:05:48	AWAITING_FULFILLMENT	$131.91	Edit
INV-20250000029	Test street 30	2025-09-25 15:05:48	AWAITING_FULFILLMENT	$3.95	Edit
INV-20250000027	Test street 28	2025-09-19 15:05:48	AWAITING_FULFILLMENT	$18.34	Edit
INV-20250000026	Test street 27	2025-09-16 15:05:48	AWAITING_FULFILLMENT	$227.67	Edit

Figure 5: View "Dashboard" page to see sales over year and manage latest orders (view orders' info and update status of them)



Brands

Id	Name	Slug	
01K7YBWYT5SDD8P02BNJV5M1KG	ForgeFlex Tools	forgeflex-tools	Edit Delete
01K7YBWYT5SDD8P02BNJV5M1KH	MightyCraft Hardware	mightycraft-hardware	Edit Delete

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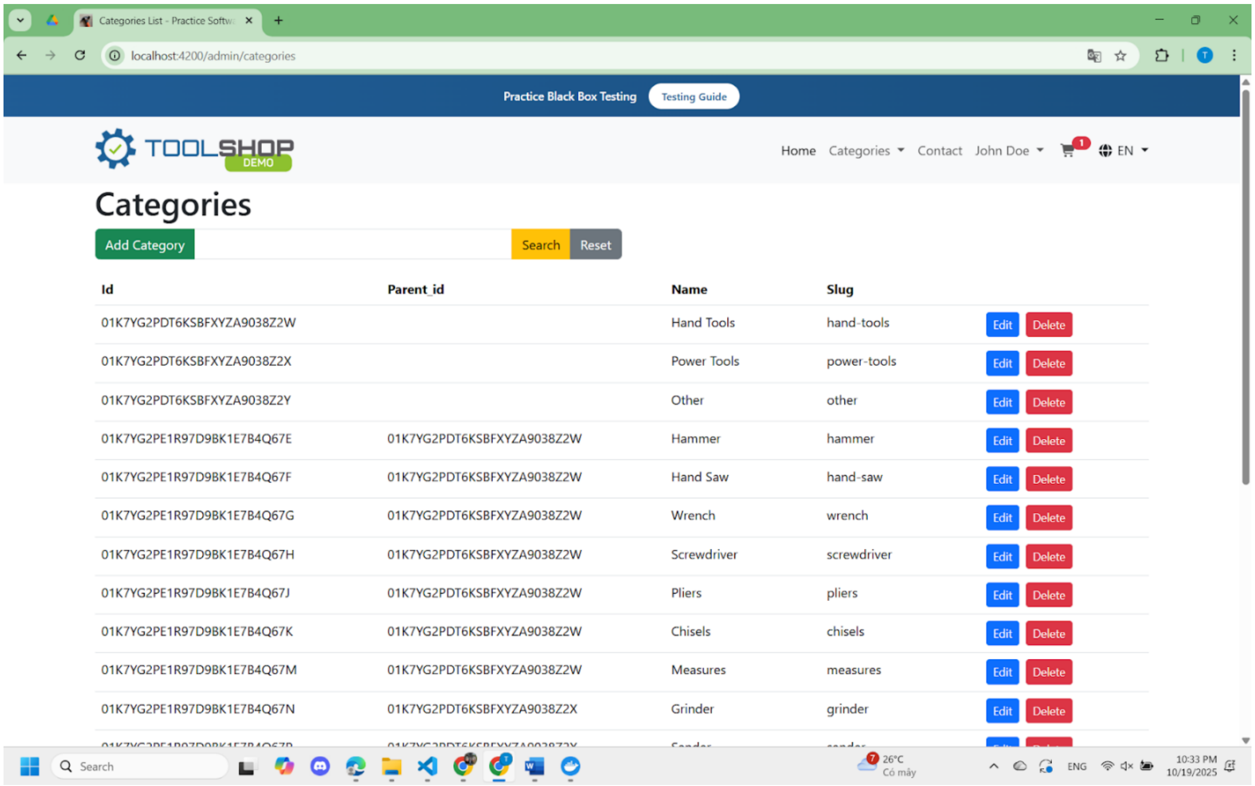
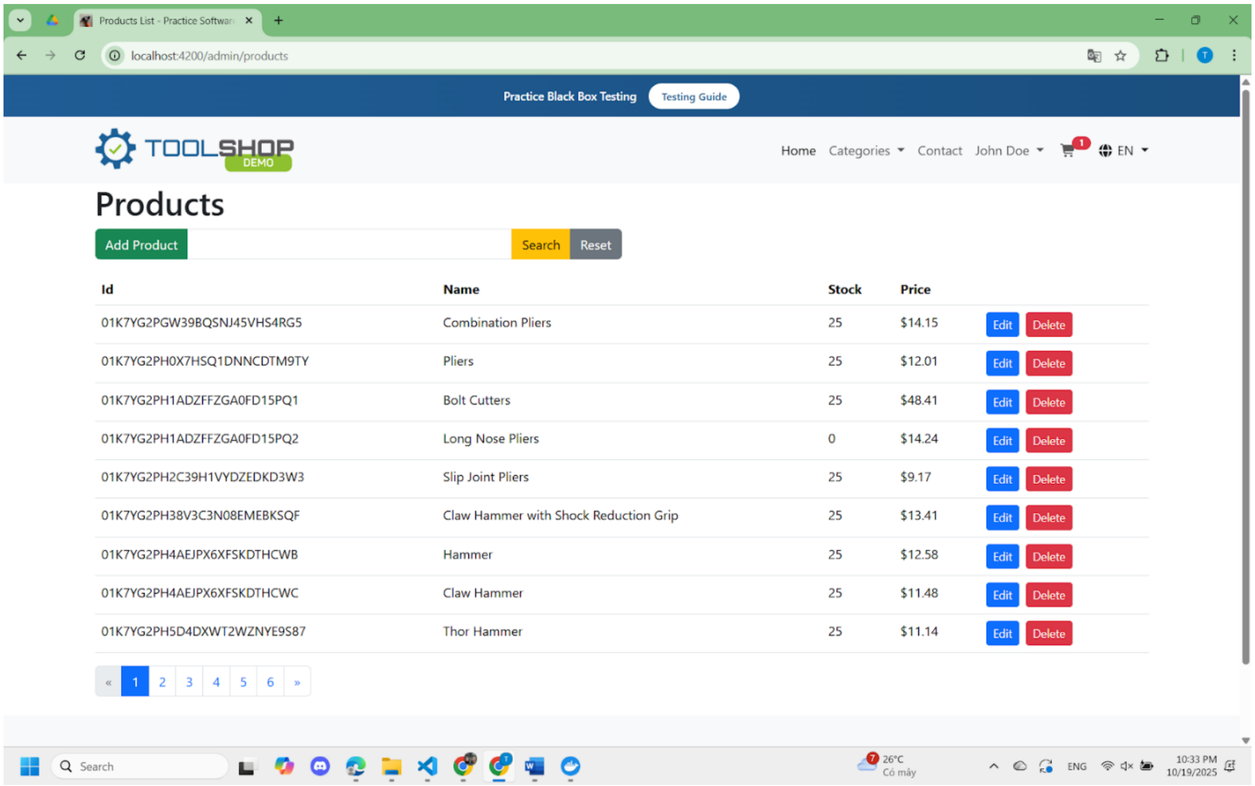
Figure 6: View "Brands" page, search/add/edit/delete brands



Categories

Id	Parent_id	Name	Slug	
01K7YG2PDT6KSBFXYZA9038Z2W		Hand Tools	hand-tools	Edit Delete
01K7YG2PDT6KSBFXYZA9038Z2X		Power Tools	power-tools	Edit Delete
01K7YG2PDT6KSBFXYZA9038Z2Y		Other	other	Edit Delete
01K7YG2PE1R97D9BK1E7B4Q67E	01K7YG2PDT6KSBFXYZA9038Z2W	Hammer	hammer	Edit Delete
01K7YG2PE1R97D9BK1E7B4Q67F	01K7YG2PDT6KSBFXYZA9038Z2W	Hand Saw	hand-saw	Edit Delete
01K7YG2PE1R97D9BK1E7B4Q67G	01K7YG2PDT6KSBFXYZA9038Z2W	Wrench	wrench	Edit Delete
01K7YG2PE1R97D9BK1E7B4Q67H	01K7YG2PDT6KSBFXYZA9038Z2W	Screwdriver	screwdriver	Edit Delete
01K7YG2PE1R97D9BK1E7B4Q67J	01K7YG2PDT6KSBFXYZA9038Z2W	Pliers	pliers	Edit Delete
01K7YG2PE1R97D9BK1E7B4Q67K	01K7YG2PDT6KSBFXYZA9038Z2W	Chisels	chisels	Edit Delete
01K7YG2PE1R97D9BK1E7B4Q67M	01K7YG2PDT6KSBFXYZA9038Z2W	Measures	measures	Edit Delete
01K7YG2PE1R97D9BK1E7B4Q67N	01K7YG2PDT6KSBFXYZA9038Z2X	Grinder	grinder	Edit Delete

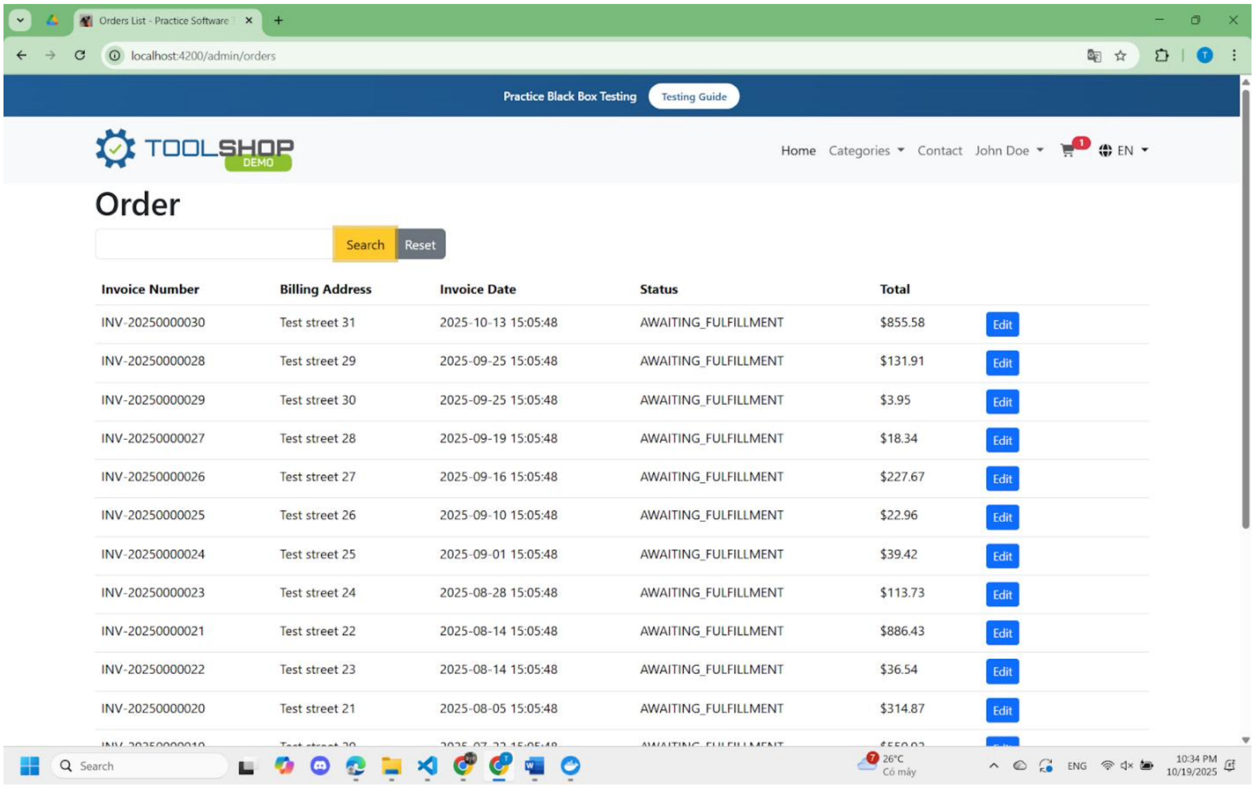
Figure 7: View “Categories” page, search/add/edit/delete categories



Products

Id	Name	Stock	Price	
01K7YG2PGW39BQSNJ45VHS4RG5	Combination Pliers	25	$14.15	Edit Delete
01K7YG2PH0X7HSQ1DNNCDTM9TY	Pliers	25	$12.01	Edit Delete
01K7YG2PH1ADZFFZGA0FD15PQ1	Bolt Cutters	25	$48.41	Edit Delete
01K7YG2PH1ADZFFZGA0FD15PQ2	Long Nose Pliers	0	$14.24	Edit Delete
01K7YG2PH2C39H1VYDZEDKD3W3	Slip Joint Pliers	25	$9.17	Edit Delete
01K7YG2PH38V3C3N08EMEBKSQF	Claw Hammer with Shock Reduction Grip	25	$13.41	Edit Delete
01K7YG2PH4AEJPX6XFSKDTHCWB	Hammer	25	$12.58	Edit Delete
01K7YG2PH4AEJPX6XFSKDTHCWC	Claw Hammer	25	$11.48	Edit Delete
01K7YG2PH5D4DXWT2WZNYE9S87	Thor Hammer	25	$11.14	Edit Delete

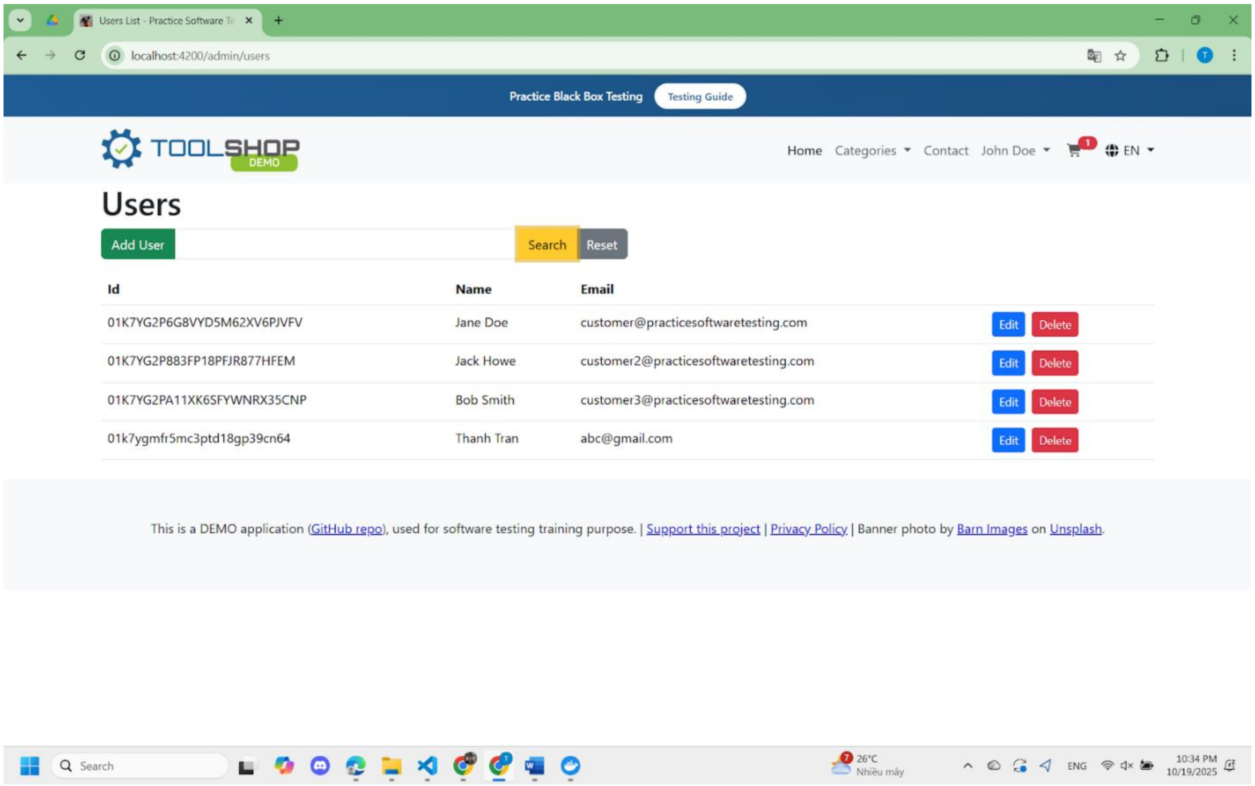
Figure 8: View “Products” page, search/add/edit/delete products


Orders List - Practice Software
localhost:4200/admin/orders
Practice Black Box Testing
Testing Guide
TOOLSHOP DEMO
Home
Categories
Contact
John Doe
EN
Search
Reset

Order

Invoice Number	Billing Address	Invoice Date	Status	Total	
INV-20250000030	Test street 31	2025-10-13 15:05:48	AWAITING_FULFILLMENT	$855.58	Edit
INV-20250000028	Test street 29	2025-09-25 15:05:48	AWAITING_FULFILLMENT	$131.91	Edit
INV-20250000029	Test street 30	2025-09-25 15:05:48	AWAITING_FULFILLMENT	$3.95	Edit
INV-20250000027	Test street 28	2025-09-19 15:05:48	AWAITING_FULFILLMENT	$18.34	Edit
INV-20250000026	Test street 27	2025-09-16 15:05:48	AWAITING_FULFILLMENT	$227.67	Edit
INV-20250000025	Test street 26	2025-09-10 15:05:48	AWAITING_FULFILLMENT	$22.96	Edit
INV-20250000024	Test street 25	2025-09-01 15:05:48	AWAITING_FULFILLMENT	$39.42	Edit
INV-20250000023	Test street 24	2025-08-28 15:05:48	AWAITING_FULFILLMENT	$113.73	Edit
INV-20250000021	Test street 22	2025-08-14 15:05:48	AWAITING_FULFILLMENT	$886.43	Edit
INV-20250000022	Test street 23	2025-08-14 15:05:48	AWAITING_FULFILLMENT	$36.54	Edit
INV-20250000020	Test street 21	2025-08-05 15:05:48	AWAITING_FULFILLMENT	$314.87	Edit
INV-20250000019	Test street 20	2025-07-22 15:05:48	AWAITING_FULFILLMENT	$550.02	

Figure 9: View "Orders" page, search/add/edit/delete orders


Users List - Practice Software Te
localhost:4200/admin/users
Practice Black Box Testing
Testing Guide
TOOLSHOP DEMO
Home
Categories
Contact
John Doe
EN
Add User
Search
Reset

Users

Id	Name	Email		
01K7YG2P6G8VYD5M62XV6PJVFV	Jane Doe	customer@practicesoftwaretesting.com	Edit	Delete
01K7YG2P883FP18PFJR877HFEM	Jack Howe	customer2@practicesoftwaretesting.com	Edit	Delete
01K7YG2PA11XK6SFYWNRX35CNP	Bob Smith	customer3@practicesoftwaretesting.com	Edit	Delete
01k7ygmfr5mc3ptd18gp39cn64	Thanh Tran	abc@gmail.com	Edit	Delete

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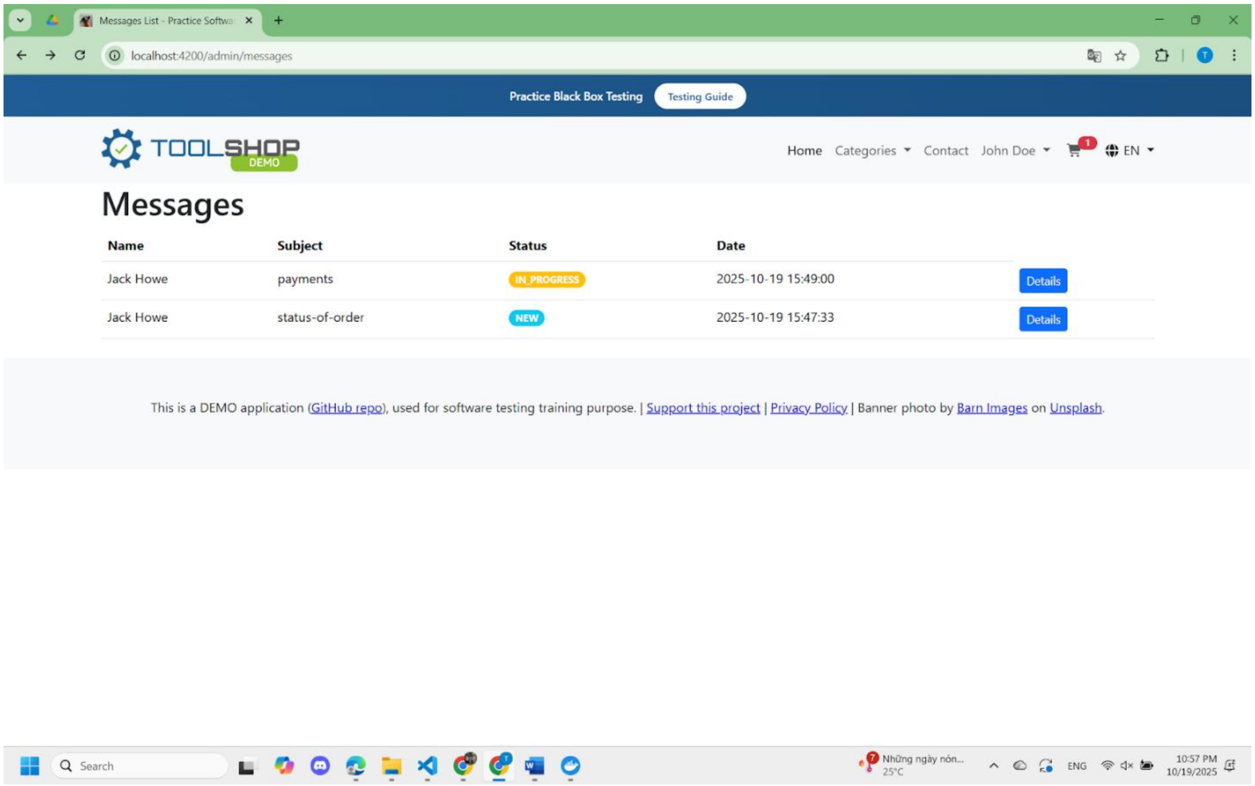
Figure 10: View "Users" page, search/add/edit/delete users



Messages

Name	Subject	Status	Date
Jack Howe	payments	IN_PROGRESS	2025-10-19 15:49:00
Jack Howe	status-of-order	NEW	2025-10-19 15:47:33

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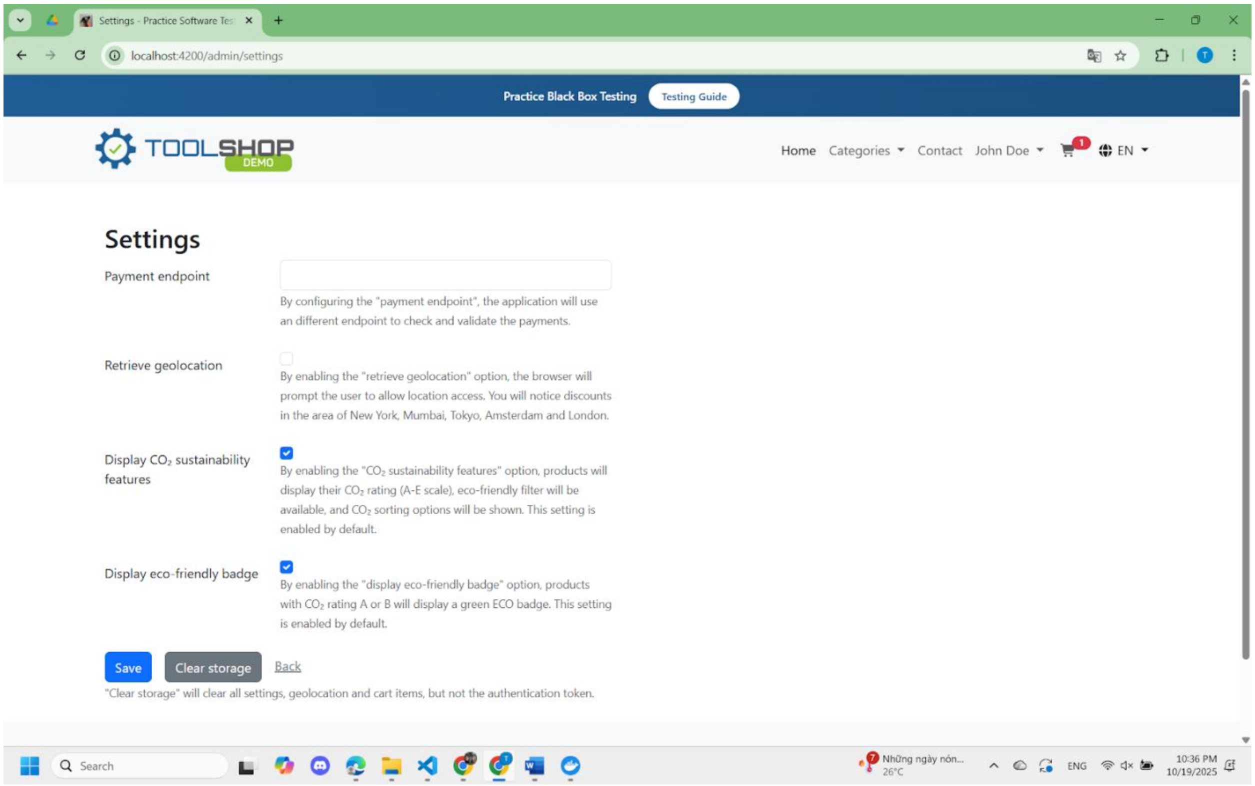
Figure 11: View "Messages" page, view detail of messages, change status and reply to them



Settings

Payment endpoint

By configuring the "payment endpoint", the application will use an different endpoint to check and validate the payments.

Retrieve geolocation ☐

By enabling the "retrieve geolocation" option, the browser will prompt the user to allow location access. You will notice discounts in the area of New York, Mumbai, Tokyo, Amsterdam and London.

Display CO_2 sustainability features ☑

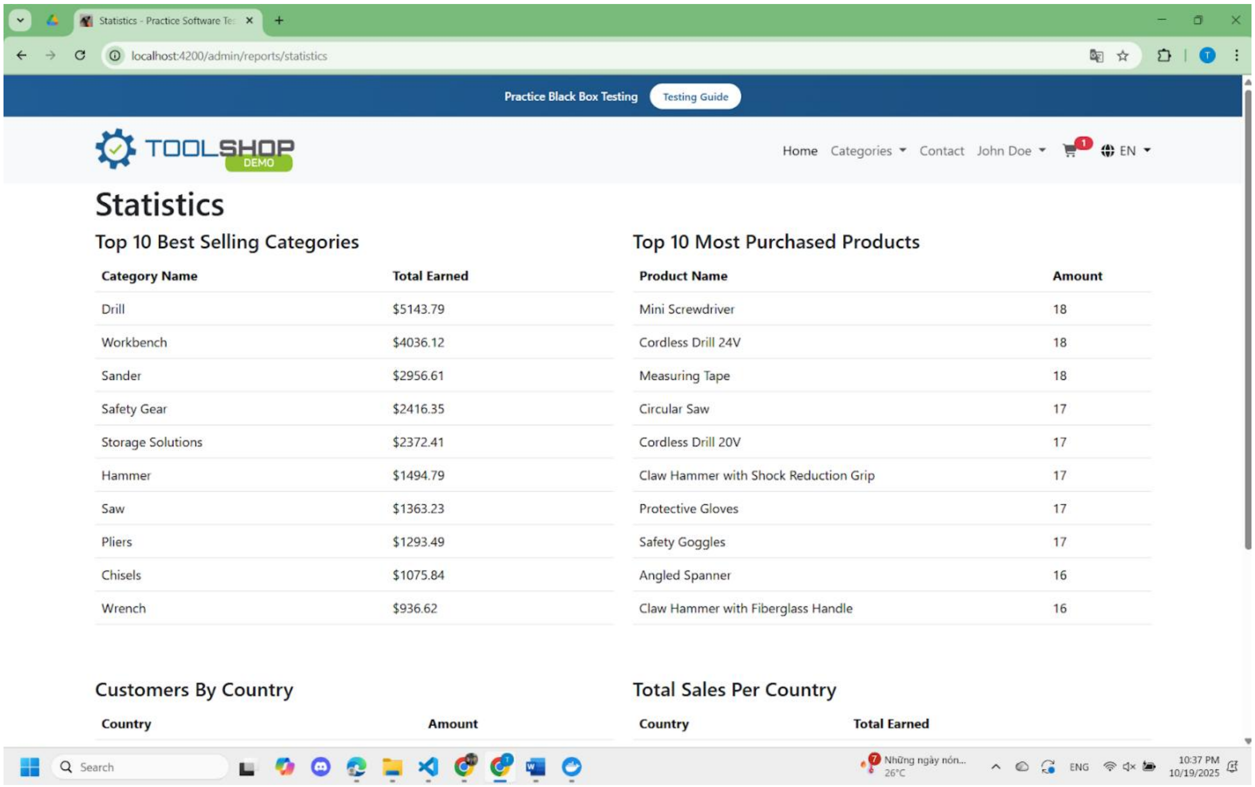
By enabling the "CO_2 sustainability features" option, products will display their CO_2 rating (A-E scale), eco-friendly filter will be available, and CO_2 sorting options will be shown. This setting is enabled by default.

Display eco-friendly badge ☑

By enabling the "display eco-friendly badge" option, products with CO_2 rating A or B will display a green ECO badge. This setting is enabled by default.

"Clear storage" will clear all settings, geolocation and cart items, but not the authentication token.

Figure 12: Access "Settings" page and change some general features



Statistics

Top 10 Best Selling Categories

Category Name	Total Earned
Drill	$5143.79
Workbench	$4036.12
Sander	$2956.61
Safety Gear	$2416.35
Storage Solutions	$2372.41
Hammer	$1494.79
Saw	$1363.23
Pliers	$1293.49
Chisels	$1075.84
Wrench	$936.62

Top 10 Most Purchased Products

Product Name	Amount
Mini Screwdriver	18
Cordless Drill 24V	18
Measuring Tape	18
Circular Saw	17
Cordless Drill 20V	17
Claw Hammer with Shock Reduction Grip	17
Protective Gloves	17
Safety Goggles	17
Angled Spanner	16
Claw Hammer with Fiberglass Handle	16

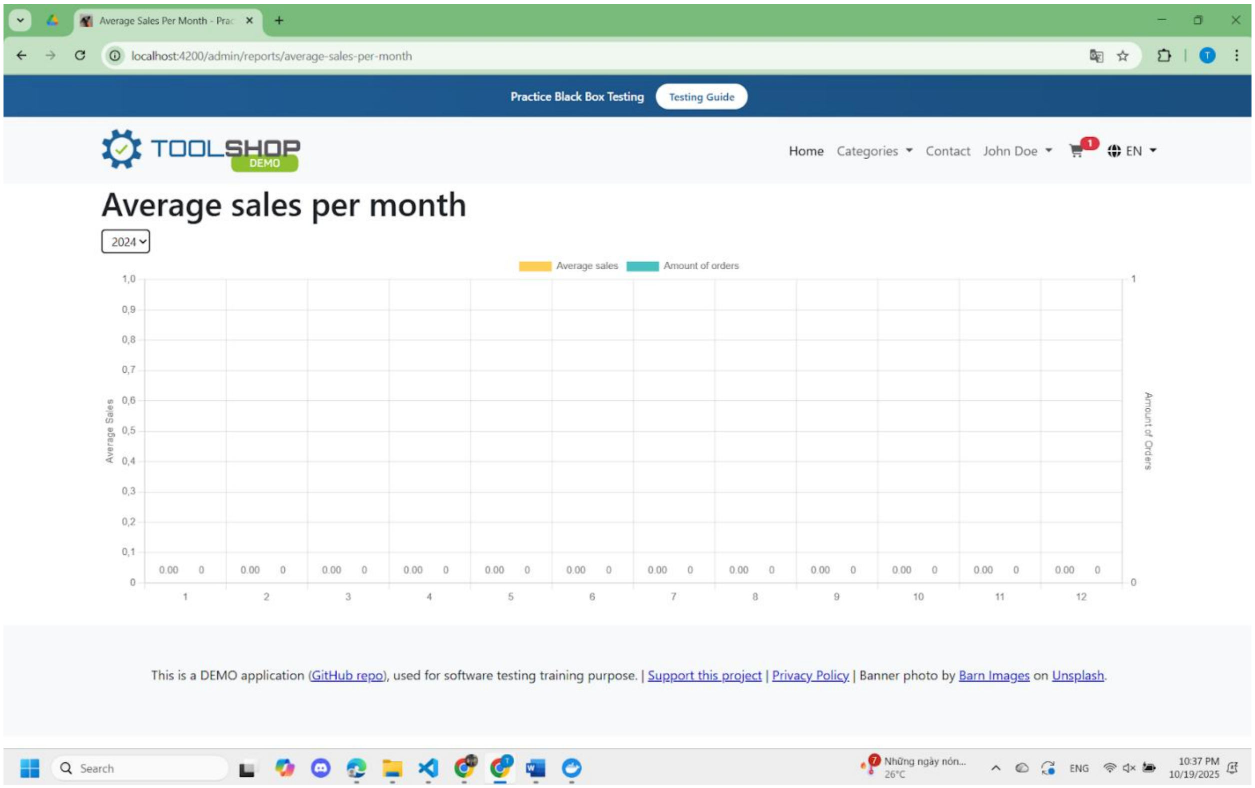
Customers By Country

Country	Amount

Total Sales Per Country

Country	Total Earned

Figure 13: View reports of Statistics top 10 Products



Average sales per month

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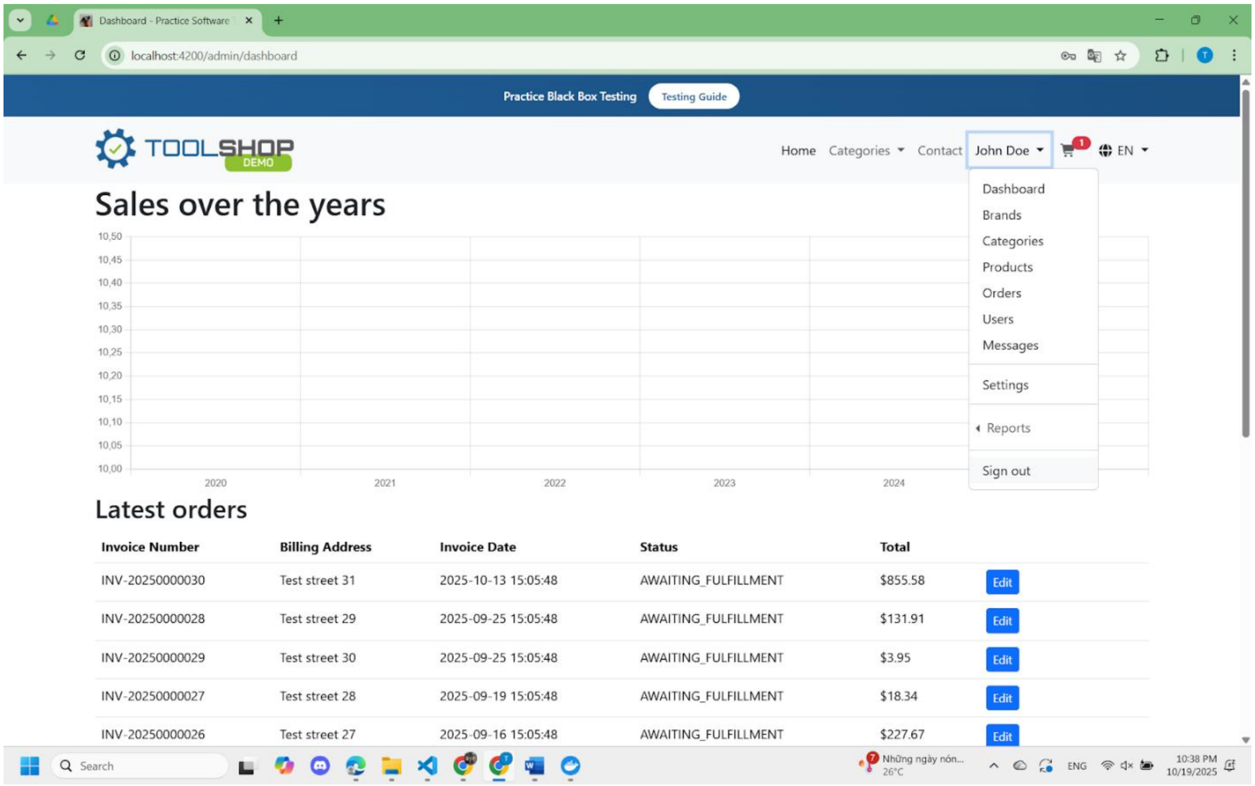
Figure 14: Average sales per month / week (can change the year)



Sales over the years

Latest orders

Invoice Number	Billing Address	Invoice Date	Status	Total
INV-20250000030	Test street 31	2025-10-13 15:05:48	AWAITING_FULFILLMENT	$855.58
INV-20250000028	Test street 29	2025-09-25 15:05:48	AWAITING_FULFILLMENT	$131.91
INV-20250000029	Test street 30	2025-09-25 15:05:48	AWAITING_FULFILLMENT	$3.95
INV-20250000027	Test street 28	2025-09-19 15:05:48	AWAITING_FULFILLMENT	$18.34
INV-20250000026	Test street 27	2025-09-16 15:05:48	AWAITING_FULFILLMENT	$227.67

Figure 15: Sales over the years

2. User

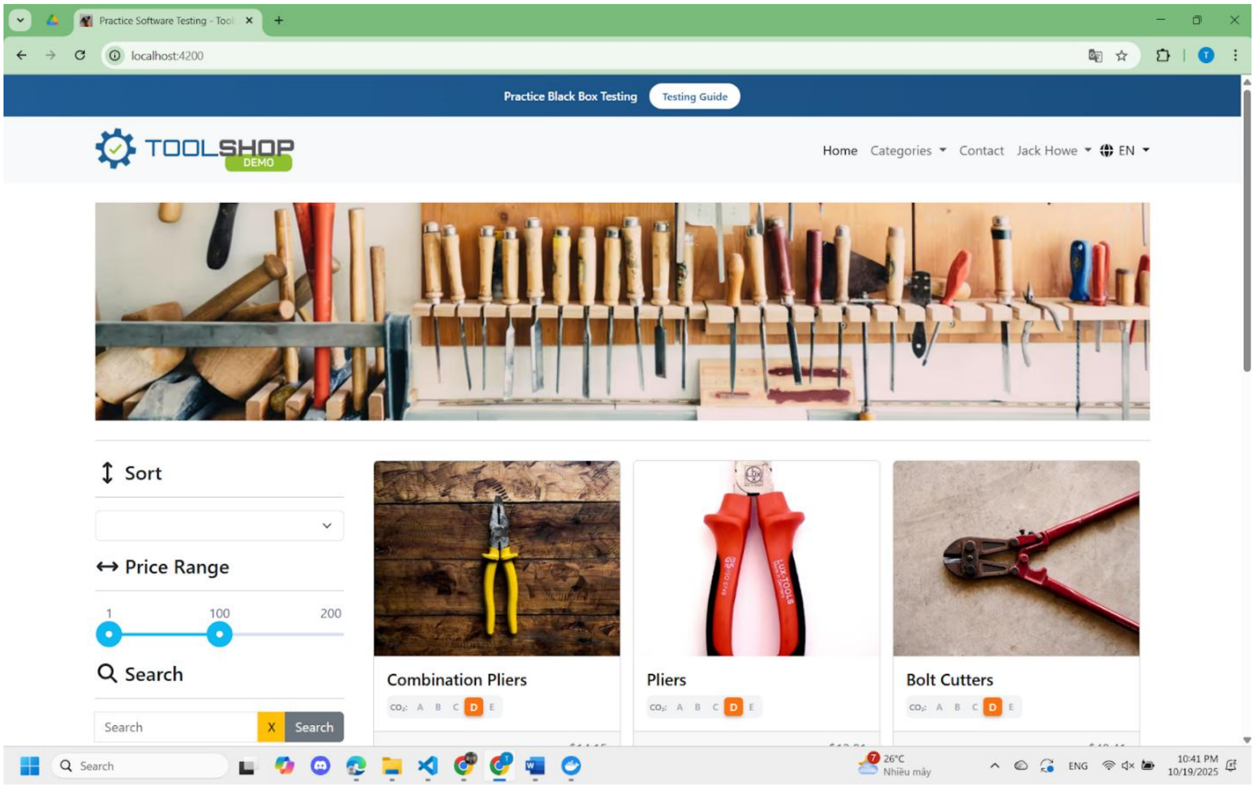
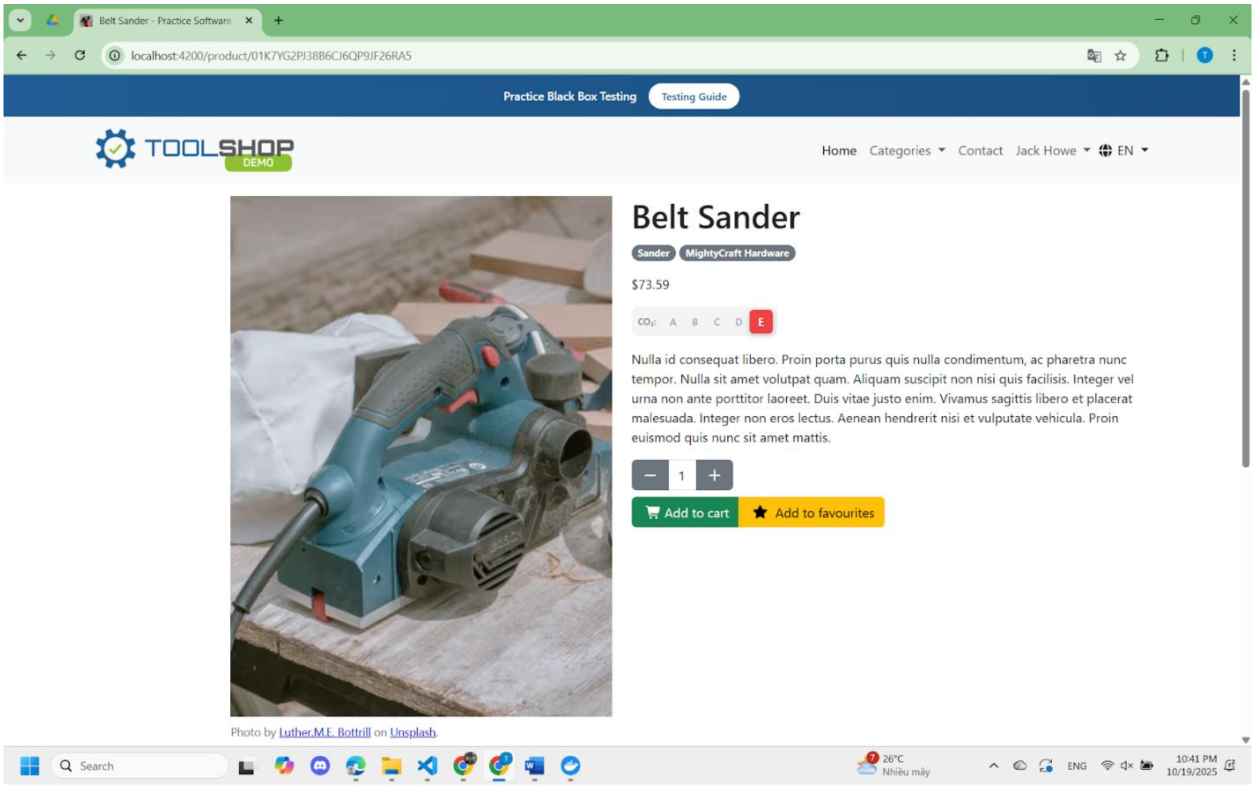


Figure 16: View products list



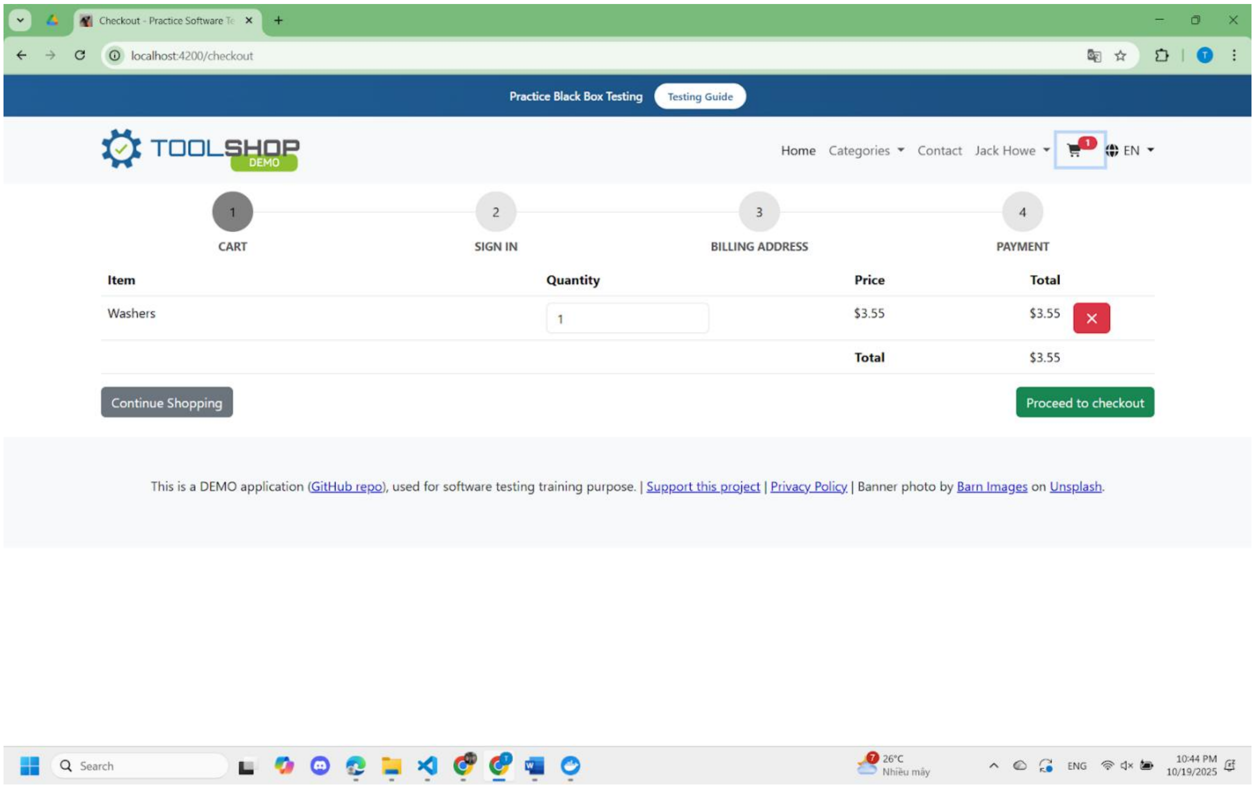
Belt Sander

$73.59

Nulla id consequat libero. Proin porta purus quis nulla condimentum, ac pharetra nunc tempor. Nulla sit amet volutpat quam. Aliquam suscipit non nisi quis facilisis. Integer vel urna non ante porttitor laoreet. Duis vitae justo enim. Vivamus sagittis libero et placerat malesuada. Integer non eros lectus. Aenean hendrerit nisi et vulputate vehicula. Proin euismod quis nunc sit amet mattis.

Photo by Luther.M.E. Bottrill on Unsplash.

Figure 17: View product details



Item	Quantity	Price	Total
Washers	1	$3.55	$3.55
		Total	$3.55

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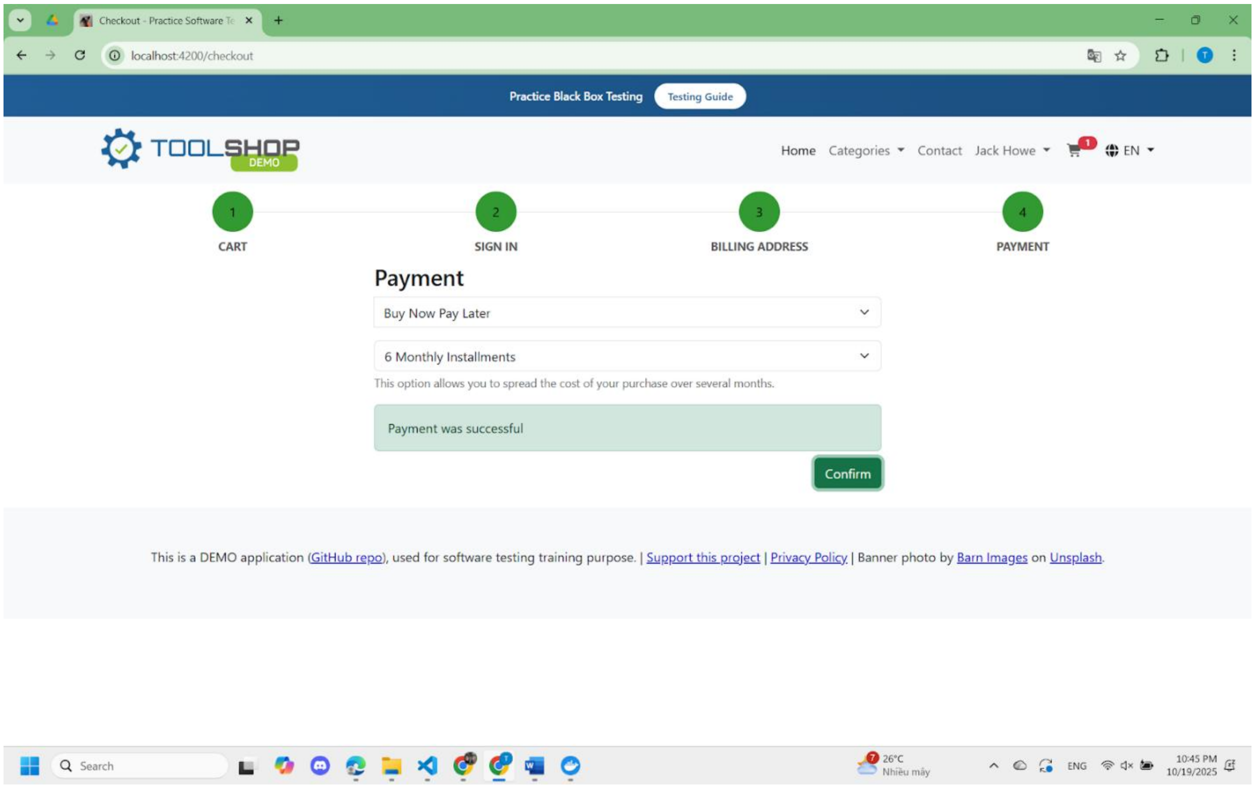
Figure 18: View cart's products



Payment

Buy Now Pay Later

6 Monthly Installments

This option allows you to spread the cost of your purchase over several months.

Payment was successful

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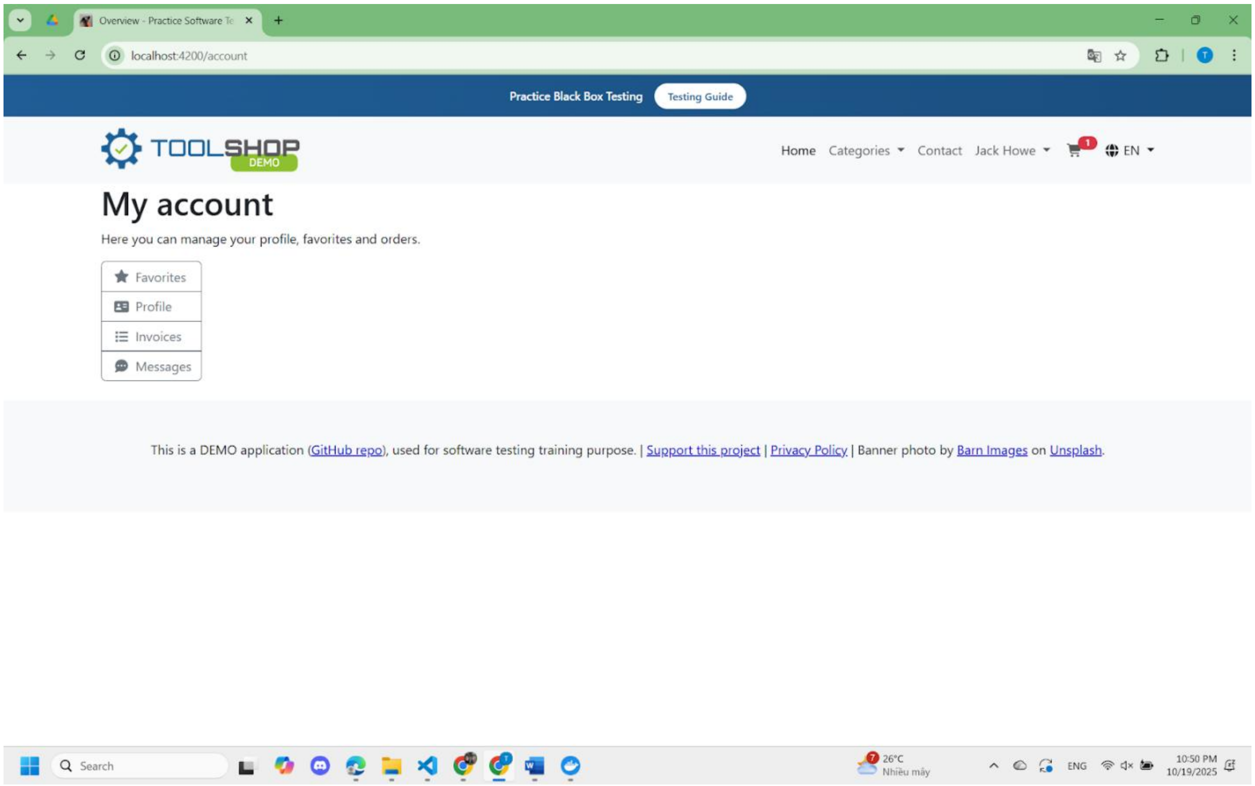
Figure 19: Check out products



My account

Here you can manage your profile, favorites and orders.

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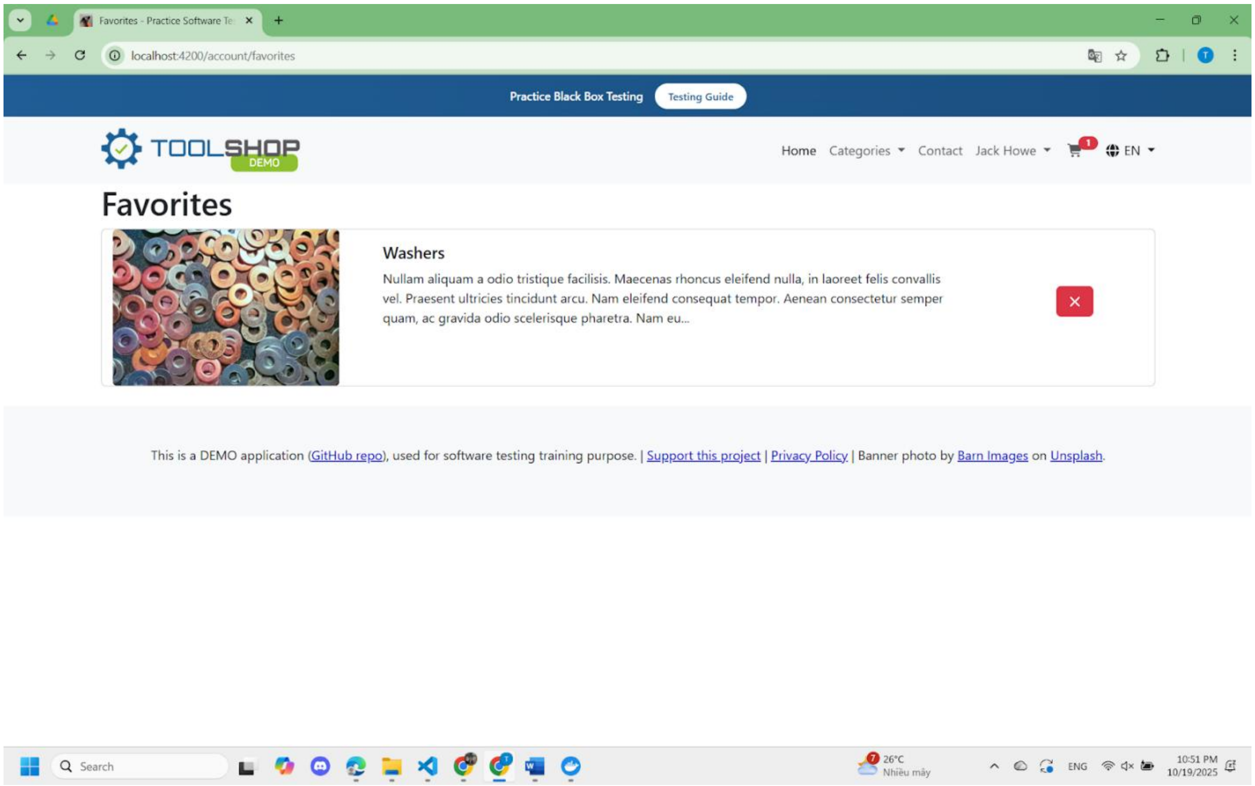
Figure 20: Access "My account" page



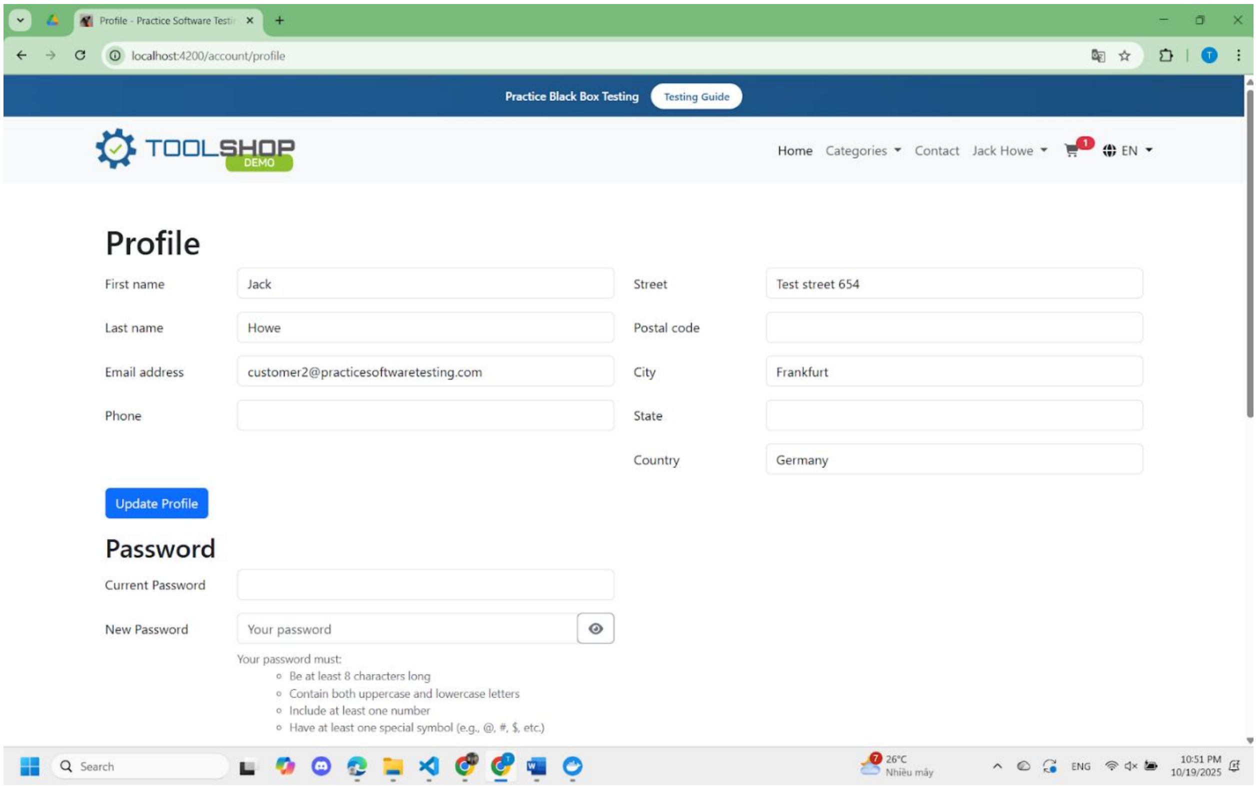
Favorites

Washers

Nullam aliquam a odio tristique facilisis. Maecenas rhoncus eleifend nulla, in laoreet felis convallis vel. Praesent ultricies tincidunt arcu. Nam eleifend consequat tempor. Aenean consectetur semper quam, ac gravida odio scelerisque pharetra. Nam eu...

This is a DEMO application (GitHub repo), used for software testing training purpose. | Support this project | Privacy Policy | Banner photo by Barn Images on Unsplash.

Figure 21: Access "My favourites" page and unfavourite products



Profile

First name	Jack	Street	Test street 654
Last name	Howe	Postal code	
Email address	customer2@practicesoftwaretesting.com	City	Frankfurt
Phone		State	
		Country	Germany

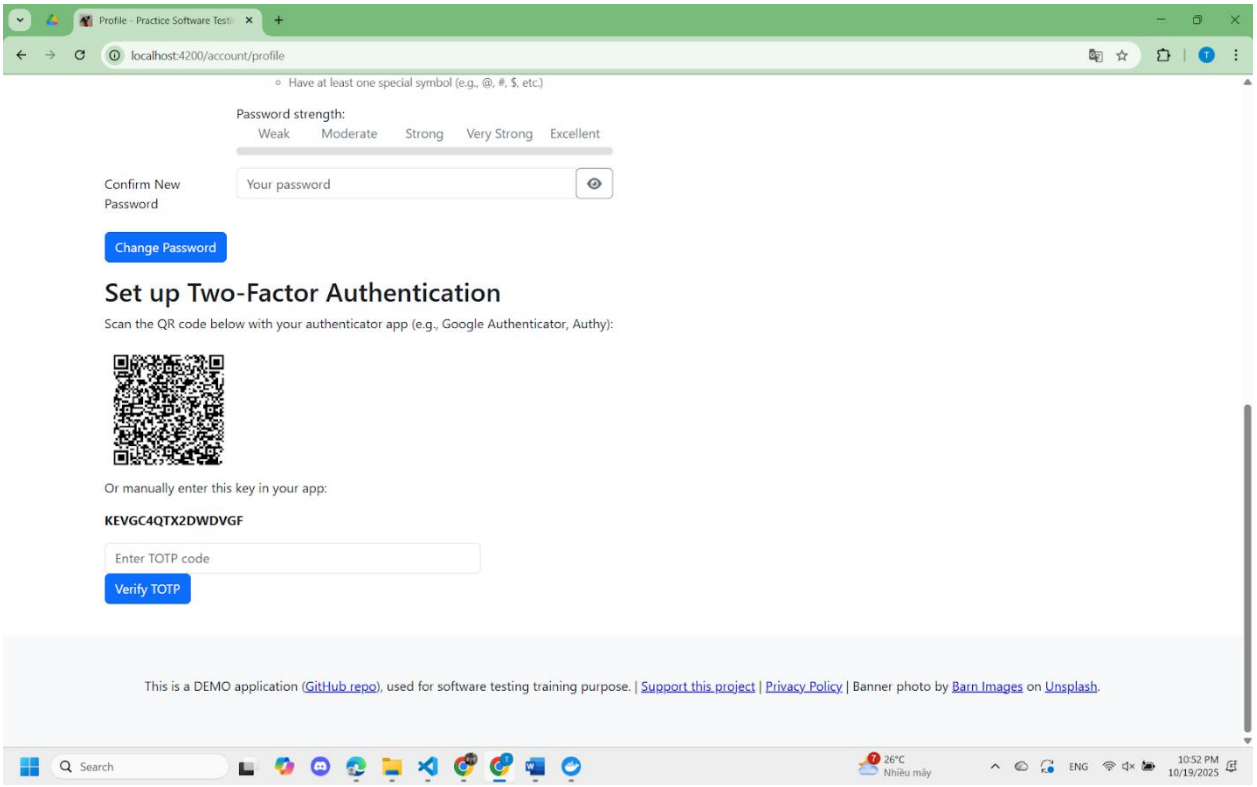
Update Profile

Password

Current Password	
New Password	Your password

Your password must:
- Be at least 8 characters long
- Contain both uppercase and lowercase letters
- Include at least one number
- Have at least one special symbol (e.g., @, #, $, etc.)

Figure 22: Access "My profile" page, update profile information, change password


Profile - Practice Software Testi
localhost:4200/account/profile

- Have at least one special symbol (e.g., @, #, $, etc.)

Password strength:
Weak Moderate Strong Very Strong Excellent

Confirm New Password: Your password

Change Password

Set up Two-Factor Authentication

Scan the QR code below with your authenticator app (e.g., Google Authenticator, Authy):

Or manually enter this key in your app:

KEVGC4QTX2DWDVGF

Enter TOTP code

Verify TOTP

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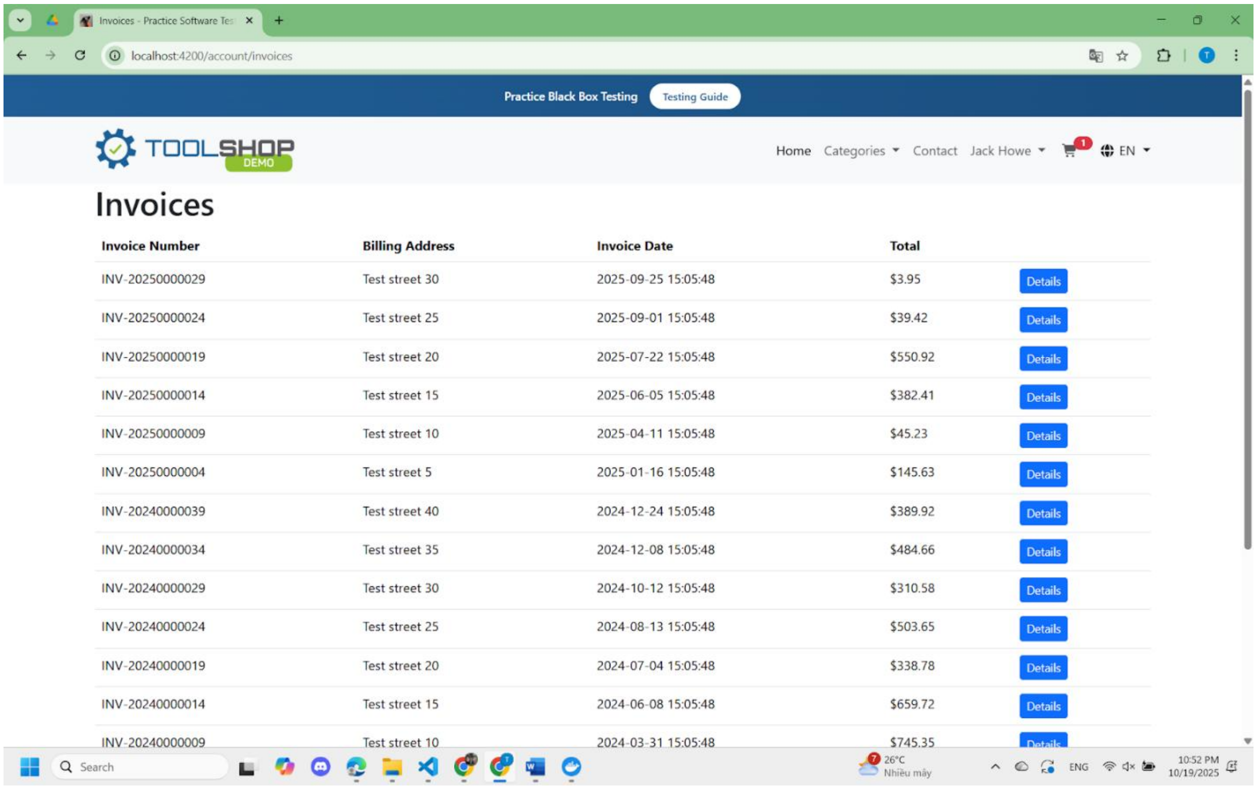
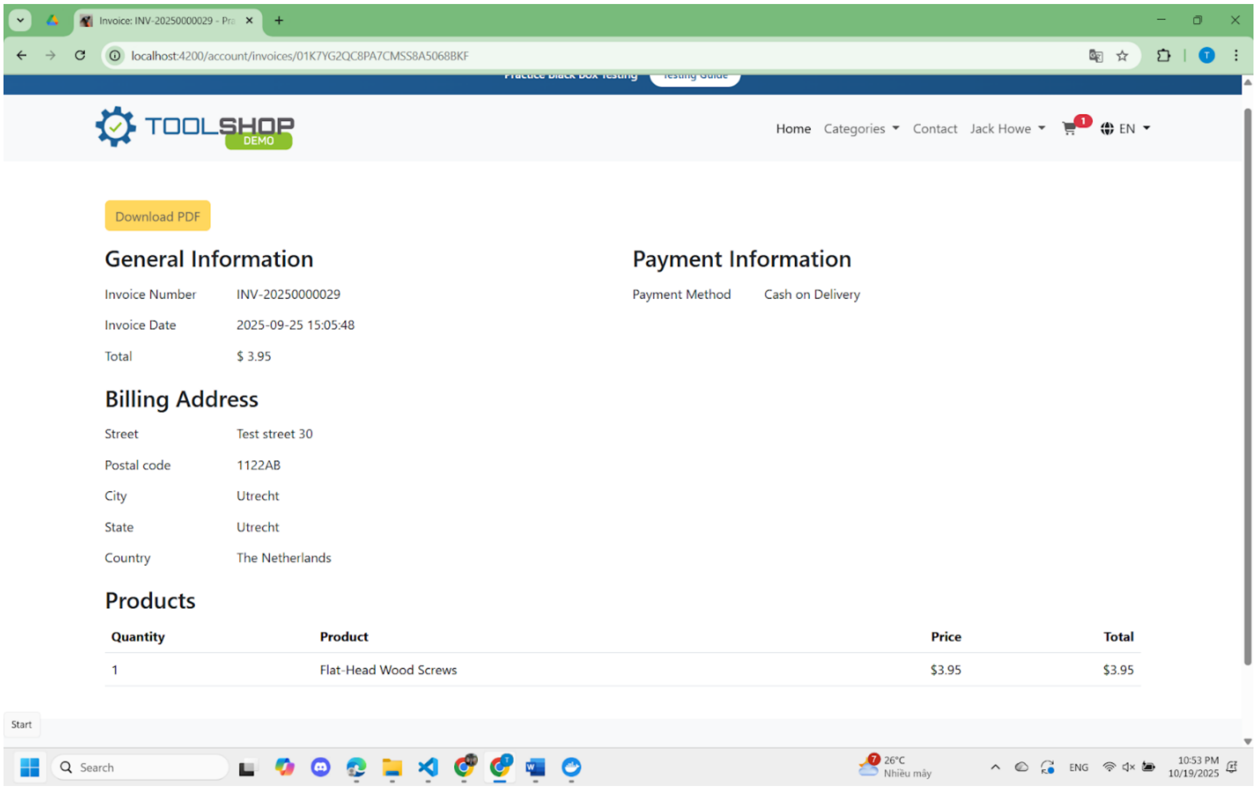
Figure 23: Add two-factor authentication


Invoices - Practice Software Tes
localhost:4200/account/invoices
Practice Black Box Testing
Testing Guide
TOOLSHOP
DEMO
Home
Categories
Contact
Jack Howe
1
EN

Invoices

Invoice Number	Billing Address	Invoice Date	Total	
INV-20250000029	Test street 30	2025-09-25 15:05:48	$3.95	Details
INV-20250000024	Test street 25	2025-09-01 15:05:48	$39.42	Details
INV-20250000019	Test street 20	2025-07-22 15:05:48	$550.92	Details
INV-20250000014	Test street 15	2025-06-05 15:05:48	$382.41	Details
INV-20250000009	Test street 10	2025-04-11 15:05:48	$45.23	Details
INV-20250000004	Test street 5	2025-01-16 15:05:48	$145.63	Details
INV-20240000039	Test street 40	2024-12-24 15:05:48	$389.92	Details
INV-20240000034	Test street 35	2024-12-08 15:05:48	$484.66	Details
INV-20240000029	Test street 30	2024-10-12 15:05:48	$310.58	Details
INV-20240000024	Test street 25	2024-08-13 15:05:48	$503.65	Details
INV-20240000019	Test street 20	2024-07-04 15:05:48	$338.78	Details
INV-20240000014	Test street 15	2024-06-08 15:05:48	$659.72	Details
INV-20240000009	Test street 10	2024-03-31 15:05:48	$745.35	Details

Figure 24: Access "My invoice" page and view history of invoices



General Information

Invoice Number	INV-20250000029
Invoice Date	2025-09-25 15:05:48
Total	$ 3.95

Payment Information

Payment Method	Cash on Delivery

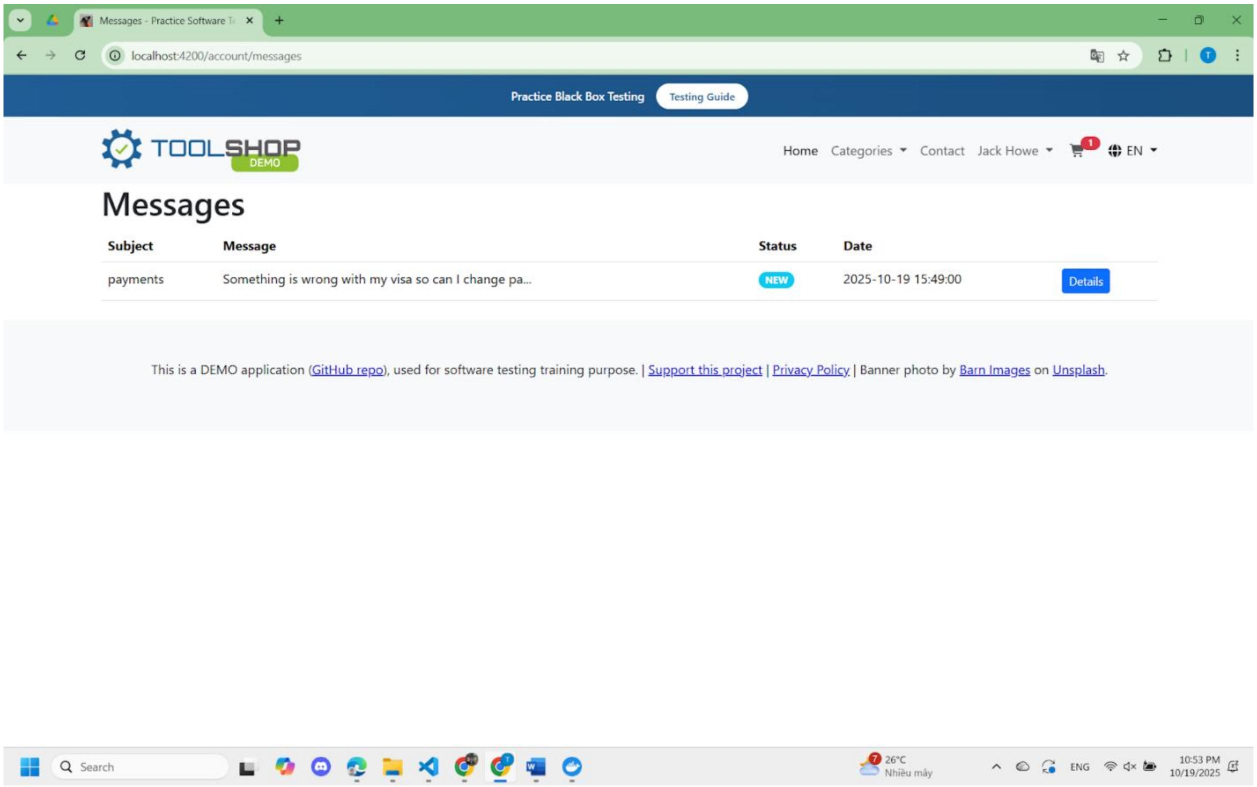
Billing Address

Street	Test street 30
Postal code	1122AB
City	Utrecht
State	Utrecht
Country	The Netherlands

Products

Quantity	Product	Price	Total
1	Flat-Head Wood Screws	$3.95	$3.95

Figure 25: My invoice details

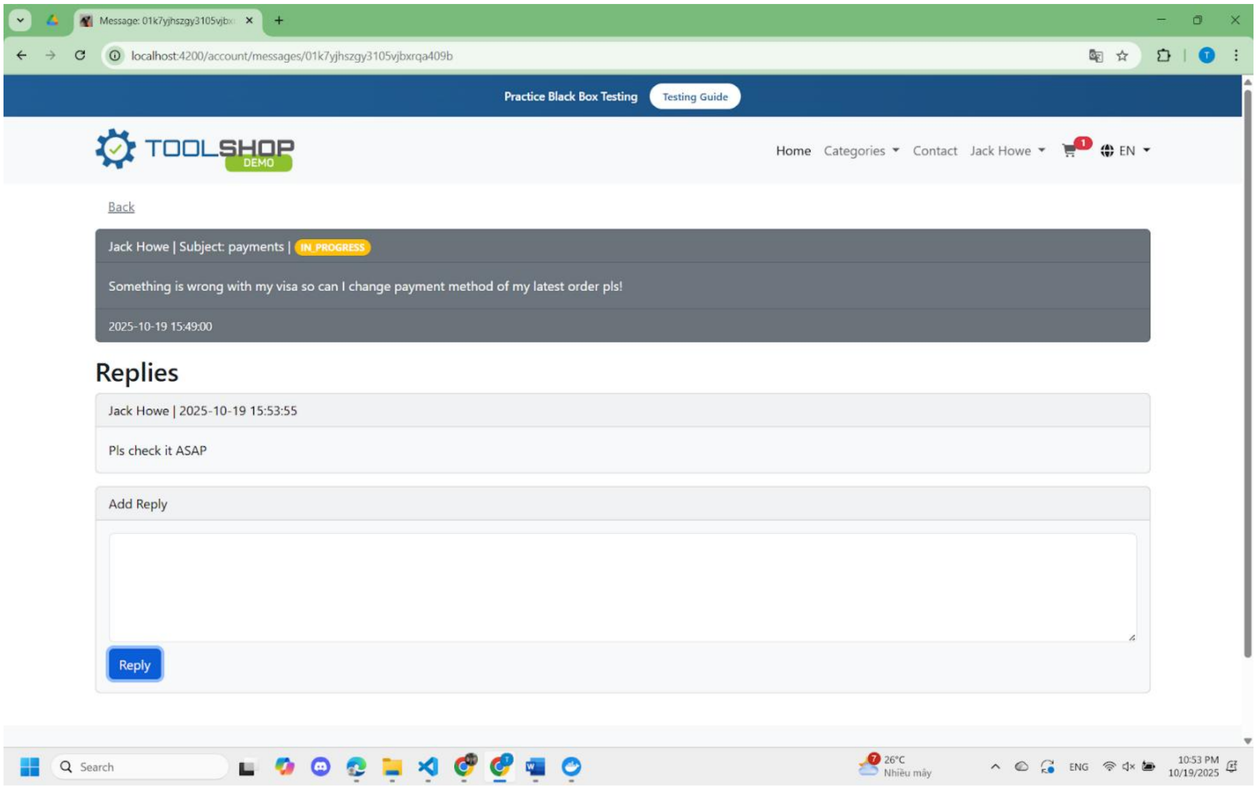


Messages

Subject	Message	Status	Date
payments	Something is wrong with my visa so can I change pa...	NEW	2025-10-19 15:49:00

This is a DEMO application (GitHub repo), used for software testing training purpose. | Support this project | Privacy Policy | Banner photo by Barn Images on Unsplash.

Figure 26: Access "My messages" page, view messages



Jack Howe | Subject: payments | IN PROGRESS

Something is wrong with my visa so can I change payment method of my latest order pls!

2025-10-19 15:49:00

Jack Howe | 2025-10-19 15:53:55

Pls check it ASAP

Figure 27: View message details and reply to message

3. Guest

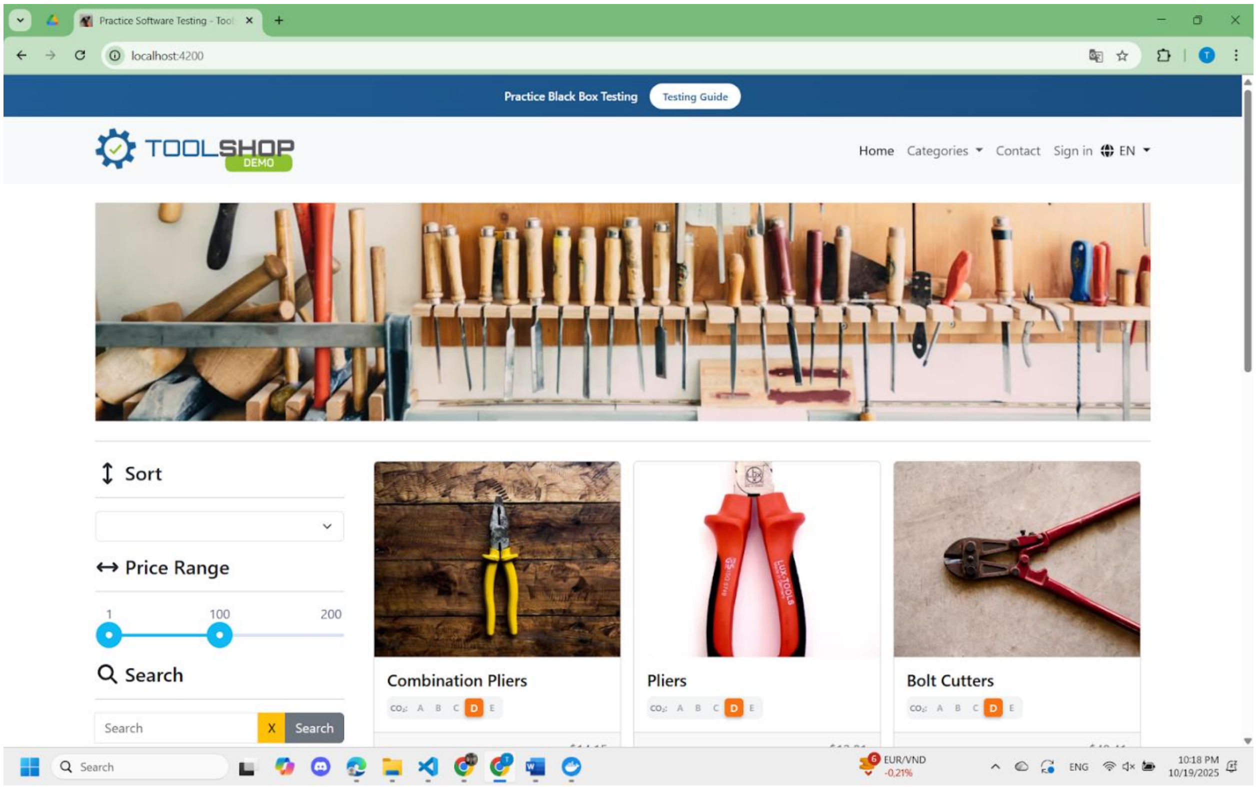
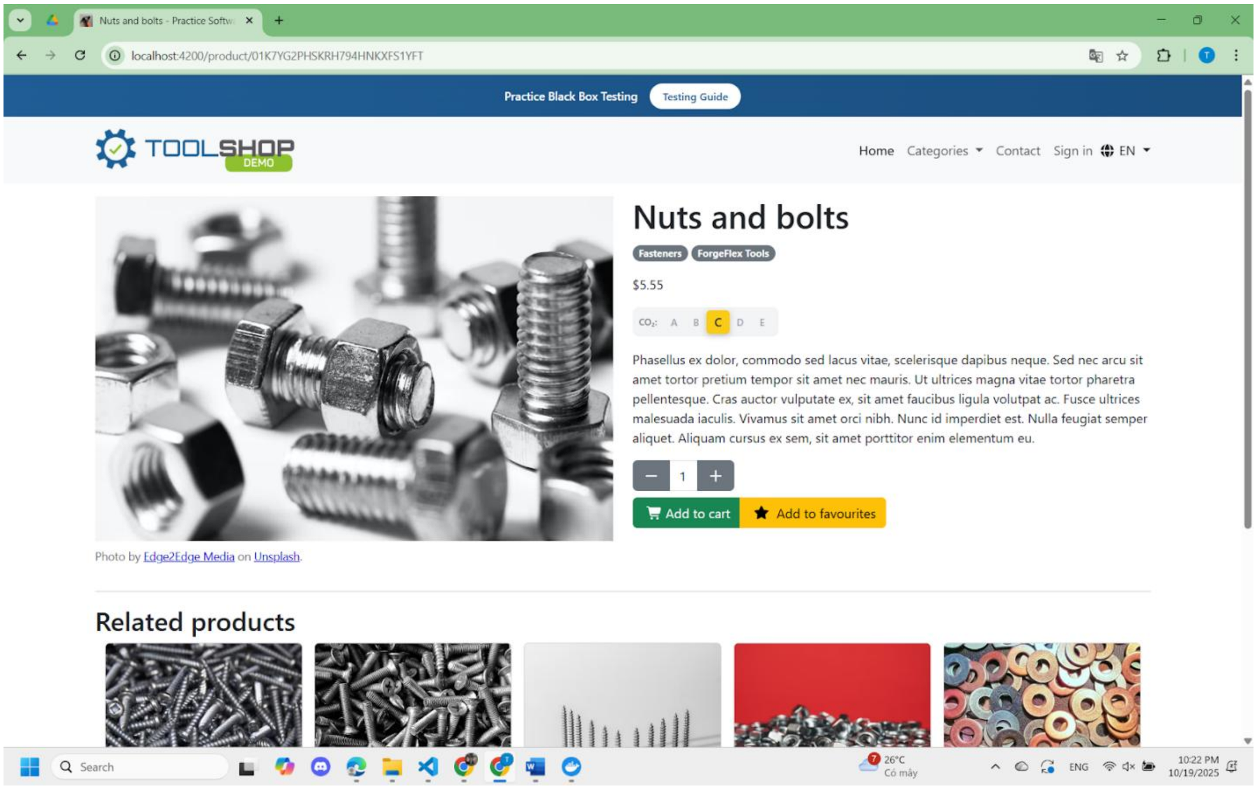


Figure 28: View products list



Nuts and bolts

$5.55

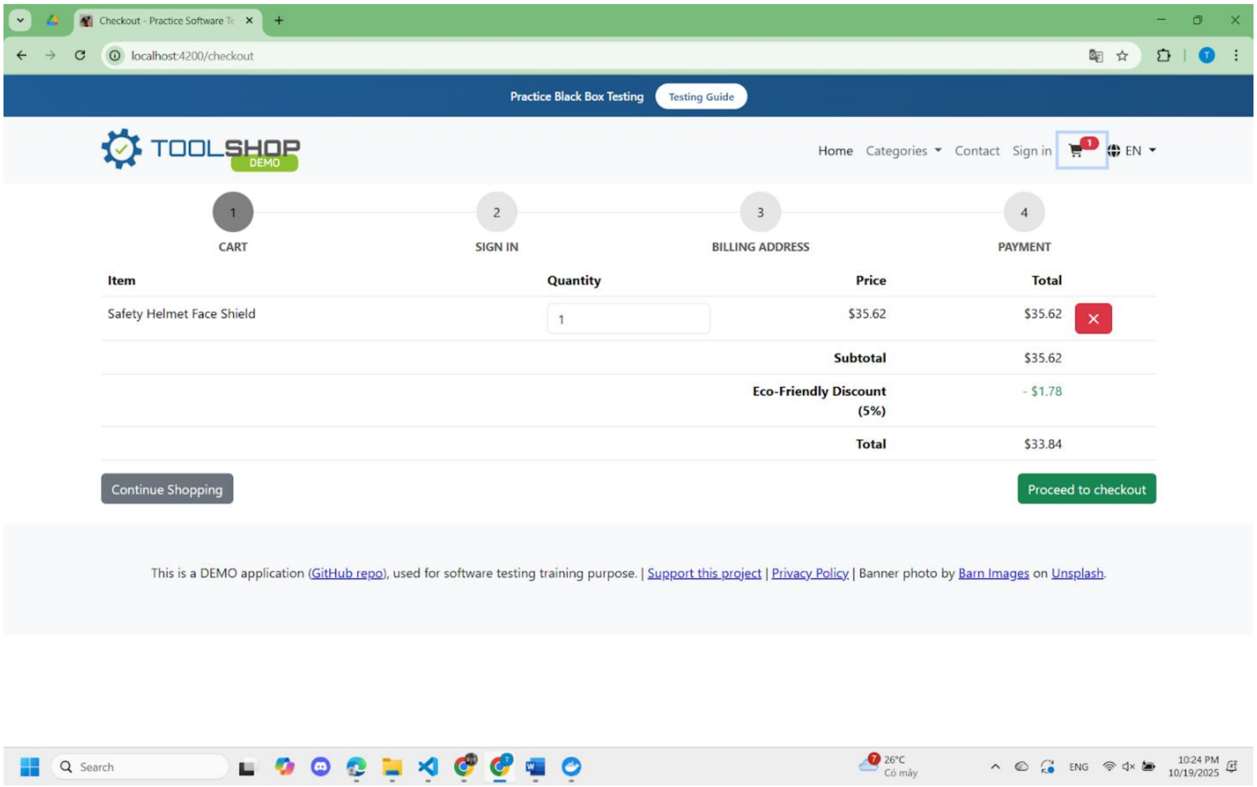
Phasellus ex dolor, commodo sed lacus vitae, scelerisque dapibus neque. Sed nec arcu sit amet tortor pretium tempor sit amet nec mauris. Ut ultrices magna vitae tortor pharetra pellentesque. Cras auctor vulputate ex, sit amet faucibus ligula volutpat ac. Fusce ultrices malesuada iaculis. Vivamus sit amet orci nibh. Nunc id imperdiet est. Nulla feugiat semper aliquet. Aliquam cursus ex sem, sit amet porttitor enim elementum eu.

Quantity: 1

Photo by Edge2Edge Media on Unsplash.

Related products

Figure 29: View product details



Item	Quantity	Price	Total
Safety Helmet Face Shield	1	$35.62	$35.62
		Subtotal	$35.62
		Eco-Friendly Discount (5%)	- $1.78
		Total	$33.84

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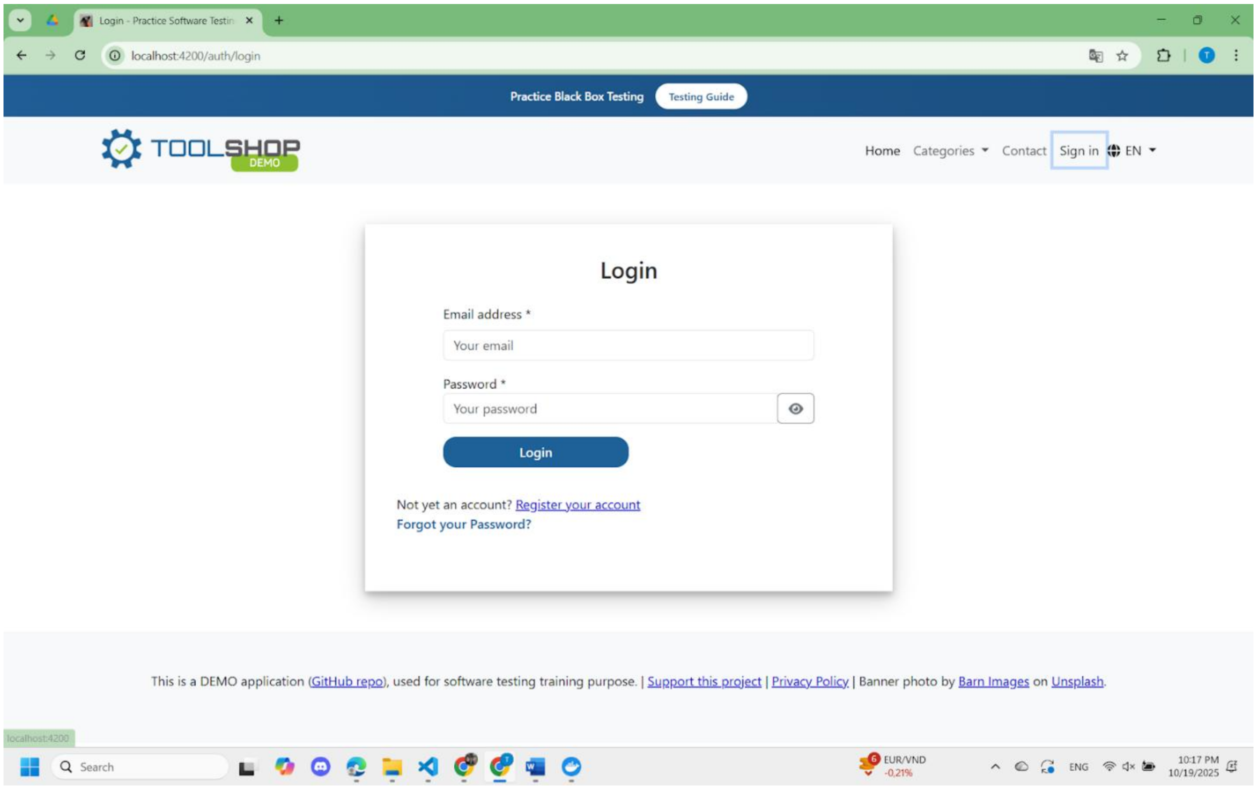
Figure 30: View cart's products (but need to log in to check out)



Login

Email address *

Your email

Password *

Your password

Not yet an account? Register your account
Forgot your Password?

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Figure 31: Access the "Sign in" and "Register" pages

F. Known Limitations / Open Questions

1. Performance Limitation

Overall application performance is slow, affecting initial page loads, image loading, and message sending (which takes ~30 seconds). This lag indicates a need for optimization, possibly related to unoptimized images, database write delays, or the web server configuration.

2. Authentication and Cart Behavior Issue (Bug)

The cart exhibits incorrect behavior in two key areas. First, products added by a Guest persist when a different Customer logs in, as the system lacks a proper cart merging policy. Second, the cart is not automatically cleared after a user completes the checkout process.

3. User Experience (UX) Feedback Issue

The application lacks a proper loading state (e.g., a spinner) during data fetching. When loading, the UI incorrectly displays "There are no products found", providing misleading visual feedback.

4. Admin Session Timeout

The Admin account automatically signs out after a short period of time, forcing frequent re-logins and disrupting workflow.

5. Admin Account Creation

Administrators do not have the functionality to create new user accounts through the admin panel.

6. Admin Favorites Access

Administrators are currently unable to access or view the "My Favourites" page.

G. Team Work Report

Name	Student ID	Responsibility/Task	Contribution
Huynh Huu Hau	22125025	User Role & Functionality Analysis	25%
Duong Ngoc Quang Khiem	22125037	Application & Deployment Validation (Visual Evidence)	25%
Cao Vo Nhat Minh	22125054	Deployment & Environment Configuration	25%
Tran Nhat Thanh	22125093	Report Compilation & Environment Documentation	25%