

VIETNAM INTERNATIONAL UNIVERSITY – HO CHI MINH CITY

INTERNATIONAL UNIVERSITY

**WEB APPLICATION DEVELOPMENT PROJECT**

**ONLINE CLEANING SERVICE**

By

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A report submitted to the School of Computer Science and Engineering  
in partial fulfillment of the requirements for the Final Project  
in Web Application Development course - Fall 2015

Ho Chi Minh city, Vietnam, 2015

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# **I. INTRODUCTION**

## **1. Objective**

- **Explain the purpose of the project — creating a web application for commercial cleaning services. Highlight the motivation for developing the system, such as improving booking efficiency, ensuring transparency in service delivery, and streamlining contracts and payments.**

## **2. Scope**

- **List the system's features:**
  - **Booking cleaning services online.**
  - **Selecting service options (Basic, Pro, Deluxe).**
  - **Managing contracts with examiner oversight.**
  - **Tracking task progress and statuses.**
  - **Processing online and cash payments.**
- **State limitations:**
  - **Limited to one service type per day.**
  - **Each Staff only works for one task in a day.**
  - **Cash and Paypal payments are only accepted in person.**
  - **Limited the main services that the company provides.**

## **3. Overview**

- **The report includes an analysis of system requirements and design, implementation details for different roles, and concludes with a discussion of findings and future recommendations.**

## **II. REQUIREMENT ANALYSIS AND DESIGN**

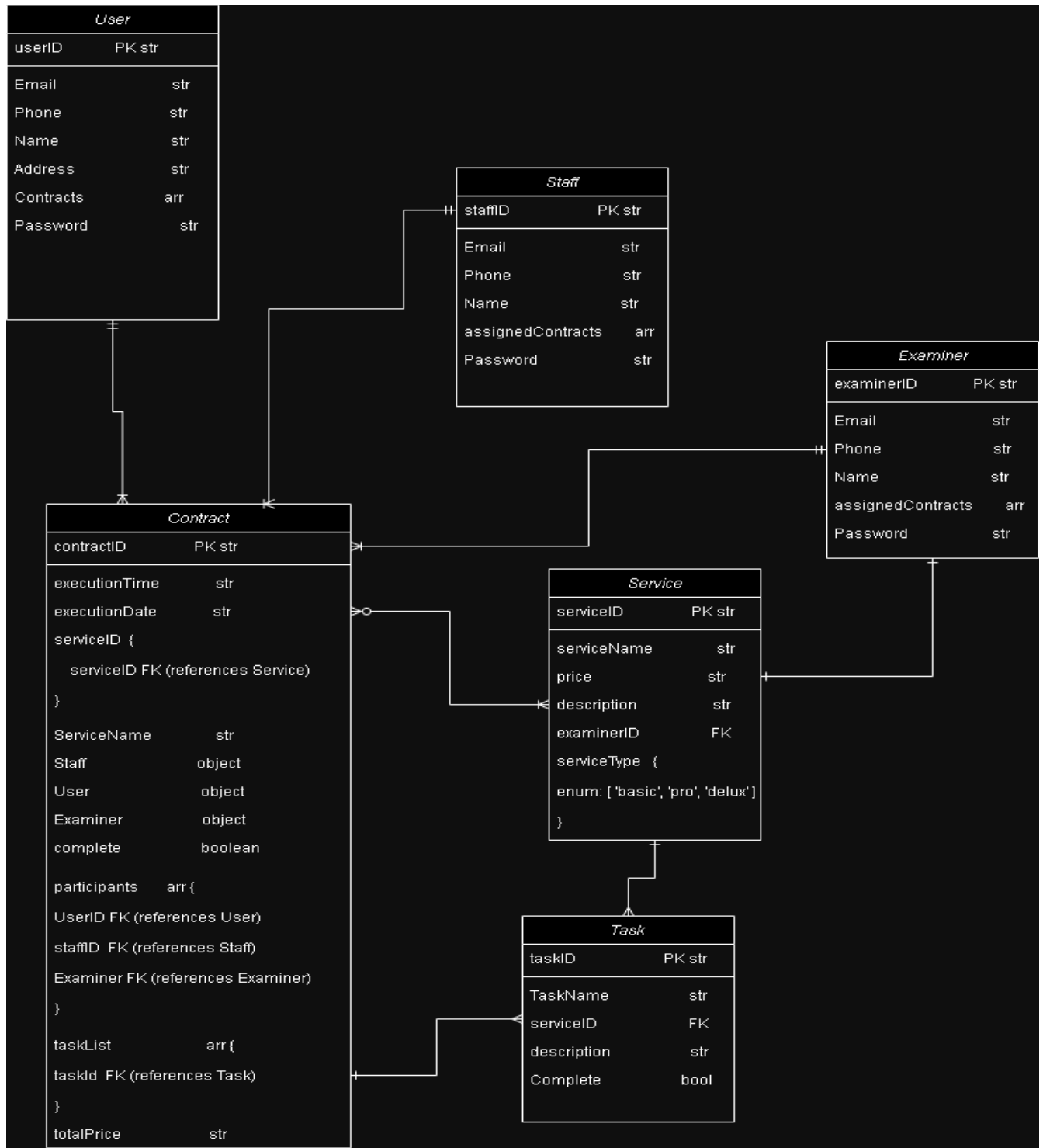
### **1. Use Case**

- **Centralize around the three main actors: User, Staff, Examiner**



- **Book service and make payment.**
  - **Check service and contract status.**
- **Staff:**
  - **Log in to view assigned tasks.**
  - **Log out.**
  - **Update Profile**
  - **Update task status (pending → complete).**
- **Examiner:**
  - **Log in to review tasks.**
  - **Log out.**
  - **Update profile.**
  - **Approve contracts after verification (update contract status).**

## **2. Class Diagram**



- **Detailed Model:**

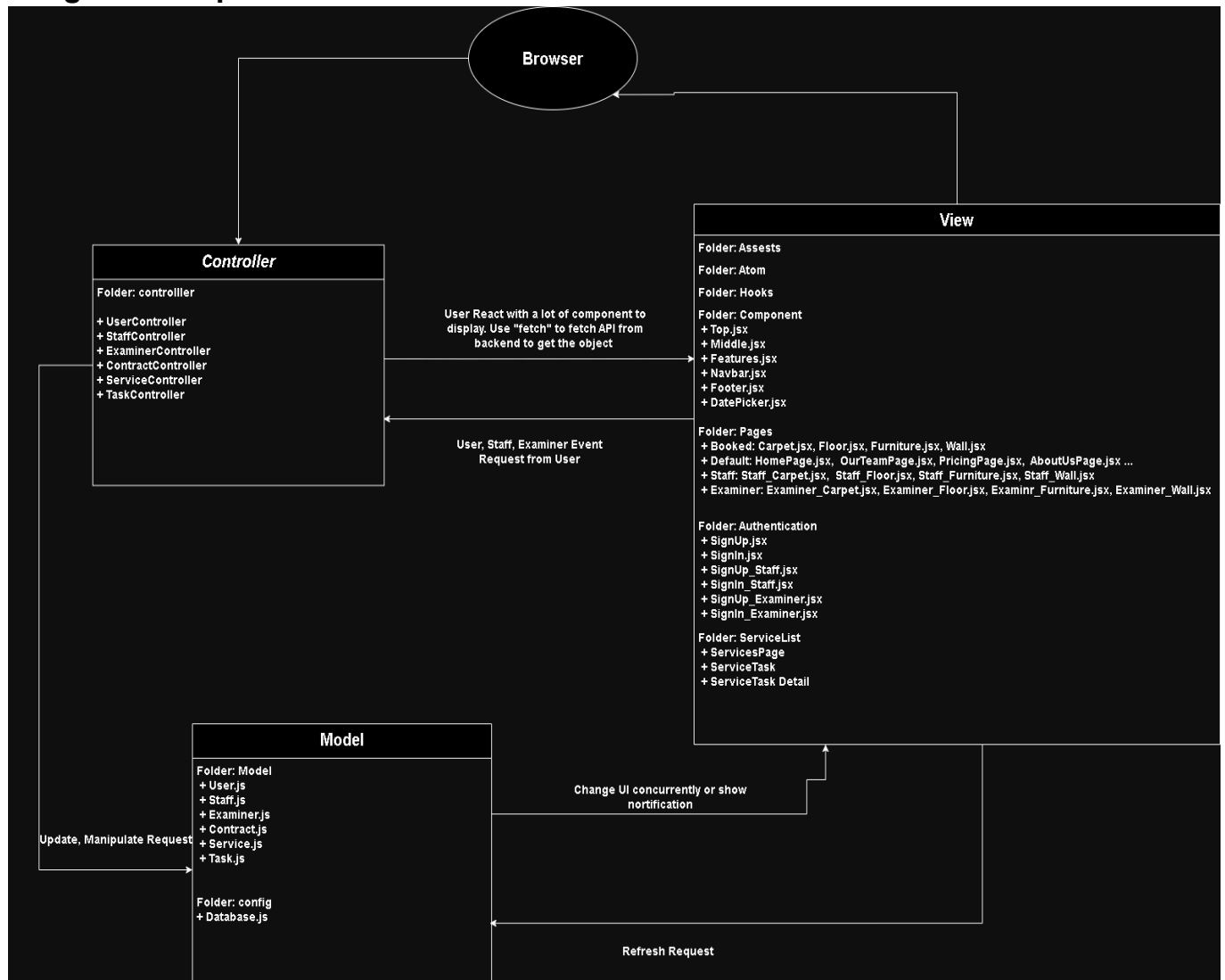
- **User:** id, name, email, password, phone, address, Contract.
- **Staff:** id, name, email, password, phone, address, assignedContract.

- **Examiner:** id, name, email, password, phone, address, assignedContract.
- **Service:** id, serviceType, description, price, examinerID.
- **Task:** id, taskName, serviceID, description, complete.
- **Contract:** id, user, serviceId, staff, examiner, taskList, complete, totalPrice, participants, execution time, execution date.
- **Relationships:**
  - **One User → Many Contracts.**
  - **One Staff → Many Contracts.**
  - **One Examiner → Many Contracts.**
  - **One Contract → One Service, Many Tasks.**
  - **One Service → Many Tasks.**
  - **One Service → One Examiner.**

### **3. System Architecture**



## Diagram Components:



- **Presentation Layer (view):**
  - React/HTML pages for users, staff, examiners and default company pages.
- **Business Logic Layer (controller):**
  - Node.js backend handling service bookings, task updates, staff, user, examiner action and contract approvals.

- **Data Layer (model):**
  - **MongoDB database storing data for users, staff, examiner, tasks, and contracts.**

### **III. IMPLEMENTATION**

#### **1. User Role**

- **Steps:**
  - **Register/Login.**
  - **View services with pricing and options.**
  - **Book a service:**
    - 1. Select service type (Basic/Pro/Deluxe).**
    - 2. Choose staff for the task.**
    - 3. Confirm booking details.**
  - **Make payment:**
    - 1. Choose between PayPal or cash.**
    - 2. Redirect to PayPal for online payment.**
  - **Track booked services and task statuses.**

- **Pictures:**

- **Screenshots of login forms.**

# Welcome back, customer!

Enter your Credentials to access your account

**Email address**

Enter your email

**Password**

Enter your password

Login

Or



Sign in with Staff



Sign in with Examiner

Don't have an account? [Sign Up](#)

- **Screenshots of registration forms.**

## Get Started Now

**Name**

**Email address**

**Password**


**Phone**


**Address**

☐ I agree to the terms & policy

Signup

Or

 Sign in with Staff

 Sign in with Examiner



## ○ Confirmation pages.

Using Services Agreement

Read each item carefully and select agree if you have no questions. Otherwise, contact us immediately to change inappropriate items in a timely manner.

1. User Details

- User Name : user
- Address : 8888 City Plaza, Hanoi
- Email : user@gmail.com

2. Service Selection

Selected Service:

1. Carpet Cleaning

Included Tides:

1. Vacuuming

2. Pre-treatment

3. Spot cleaning

4. Drying

5. Deep cleaning

3. Examiner Information

- Examiner Name : examiner
- Phone : 123456
- Examiner Visit Date : 04/12/2024

4. Scheduling Options

- Selected Execution Date : 04/12/2024
- Execution Time : 9:00 AM

5. Contract Details

- Responsible Staff : Amanda Lee
- Real Estate Ref Price : \$100

6. Payment Information

Deposit Payment Method:

- ☐ Cash
- ☒ PayPal

Final Payment Amount: \$650

7. Terms

This Agreement will begin on the date of acceptance and will remain in effect until all services have been completed.

Total Payment


650 \$

[✓] I agree to the term & contract

Agree

Go Back

- **Payment interface**
  - 1. Paypal**



## Pay with PayPal

With a PayPal account, you're eligible for Purchase Protection and Rewards.

Email or mobile number


sb-tqvrq33100107@personal.example.com

Password

|

[Forgot password?](#)

Log In

 Log in with a one-time code

or

Pay with Debit or Credit Card

[Cancel and return to BLAST.com](#)


## 2. Card

Cleaning.io

TEST MODE

Carpet Cleaning


\$650.00


Pay with  link

Or pay another way

Email


Payment method

☐  Card

☐  Cash App Pay

☐ Securely save my information for 1-click checkout  
Pay faster on Cleaning.io and everywhere Link is accepted.

Pay

Powered by  [Terms](#) [Privacy](#)

### ○ Complete Payment

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 user6

LOGOUT

\$

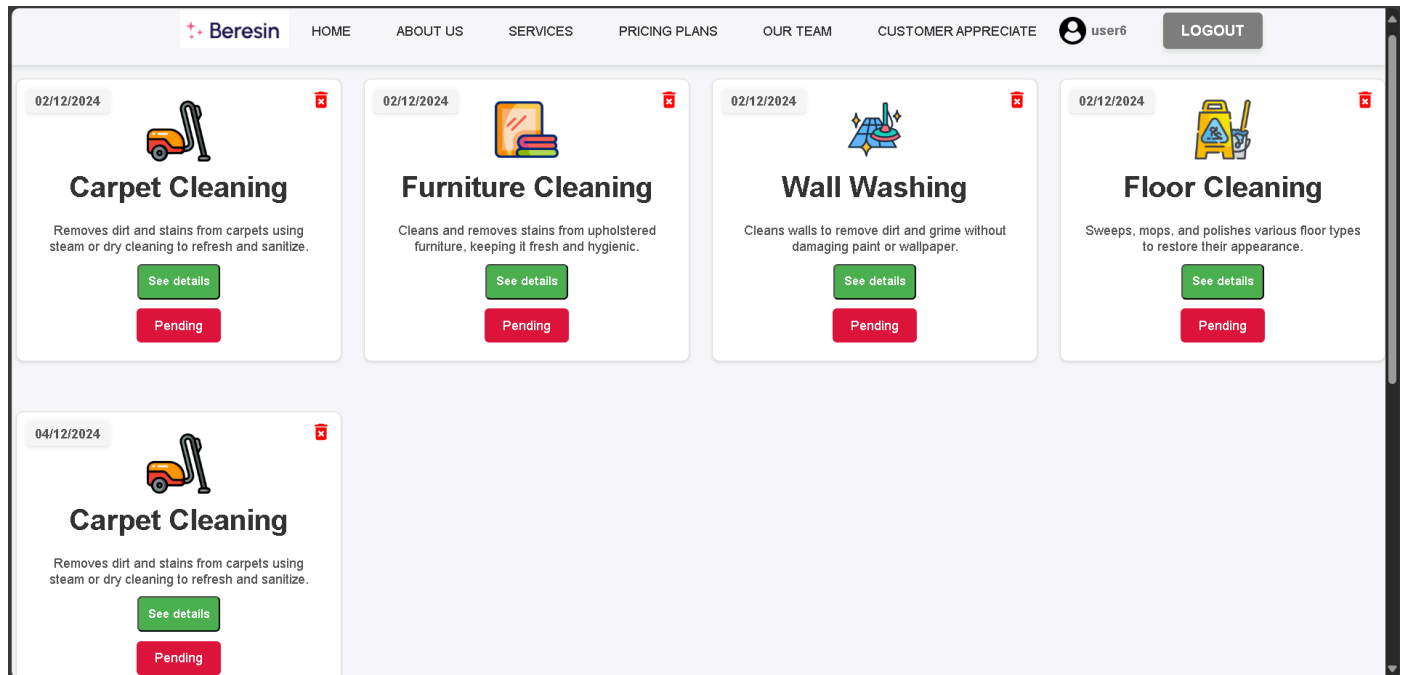
Payment Successful

Thank you for your payment!

Go To Your Booked Service(s)



- **Booked Service Page (can keep track the contract status)**



## 2. Staff Role

- **Steps:**
  - **Log in to the staff portal.**
  - **View assigned tasks and contracts.**
  - **Update task statuses:**
    1. **Mark tasks as pending, in-progress, or complete.**
  - **Track overall progress of assigned services.**
- **Pictures:**

- **Staff login screen.**

# Welcome back, Staff!

Enter your Credentials to access your account

Email address

staff1@gmail.com

Password

...

Login

Or

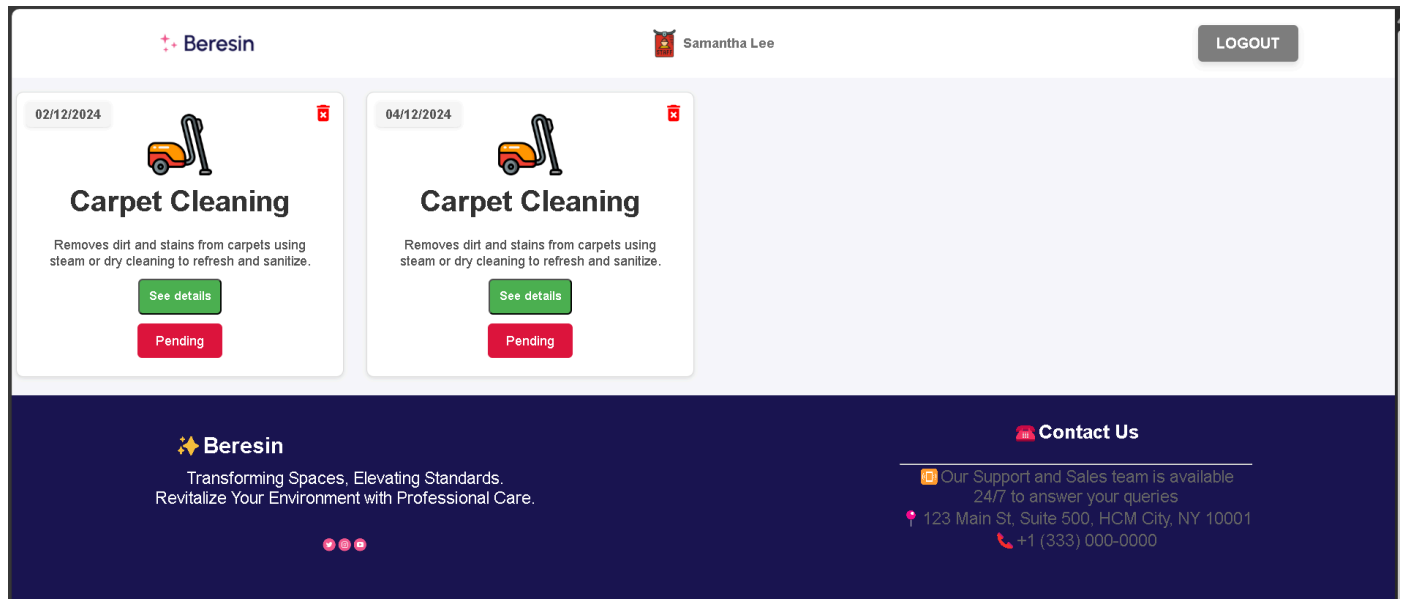


Sign in with Customer

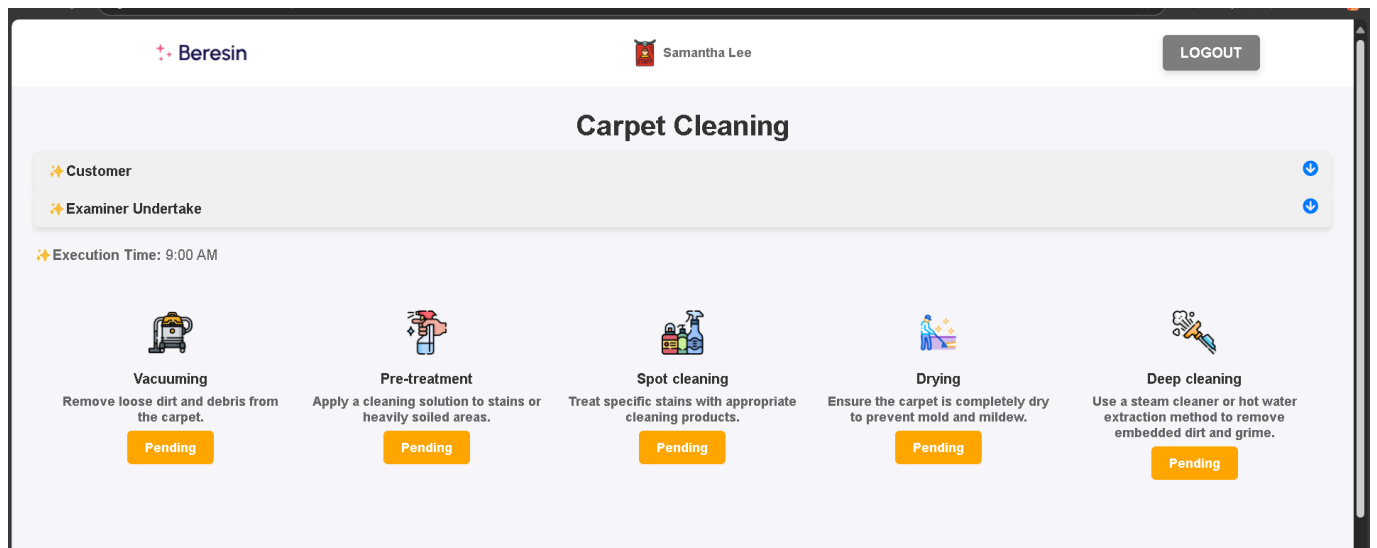


Sign in with Examiner

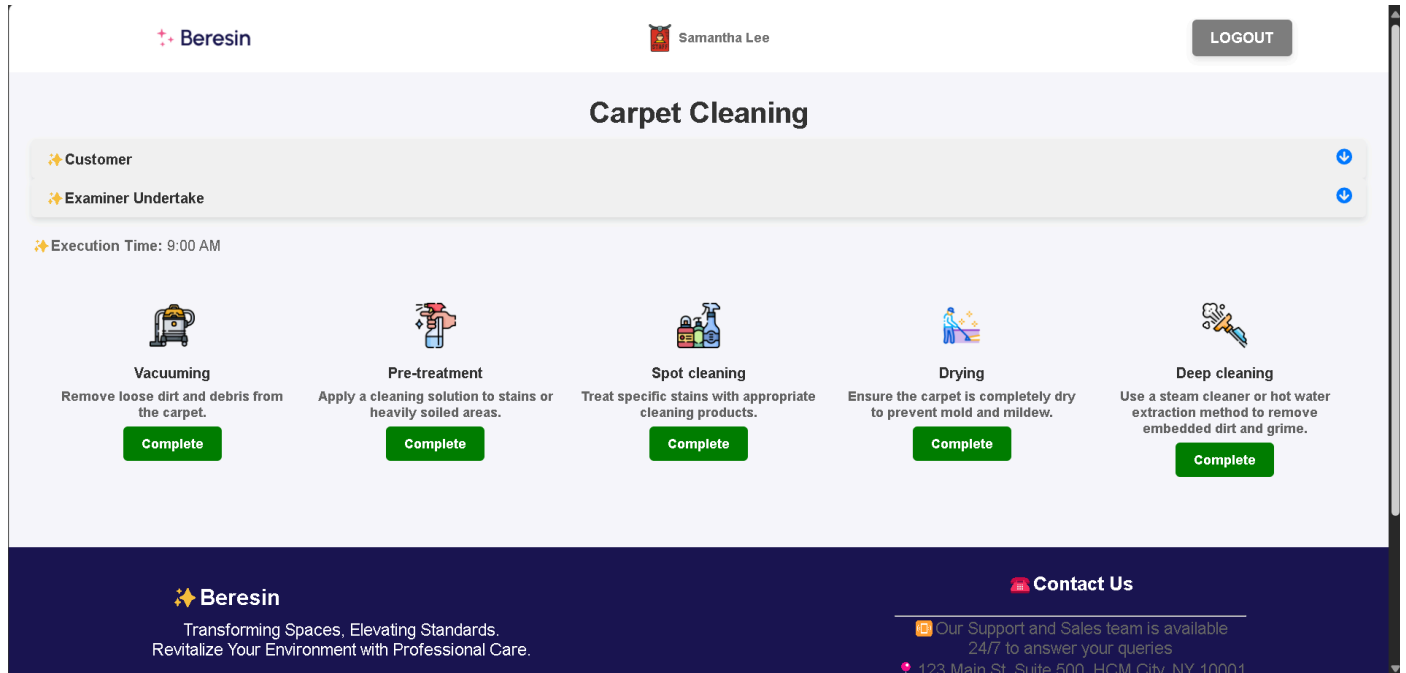
○ **Task management interface.**



○ **Contract details page showing associated tasks.**



- **After completing each task, click to change state from pending to complete**



### 3. Examiner Role

- **Steps:**
  - **Log in to the examiner portal.**
  - **Review assigned contracts and task statuses.**
  - **Approve contracts after verifying task completion.**
  - **Mark contracts as "Complete and Checked."**
- **Pictures:**

- **Examiner login screen.**

# Welcome back, Examiner!

Enter your Credentials to access your account

Email address

blast12k3@gmail.com

Password

...

Login

Or

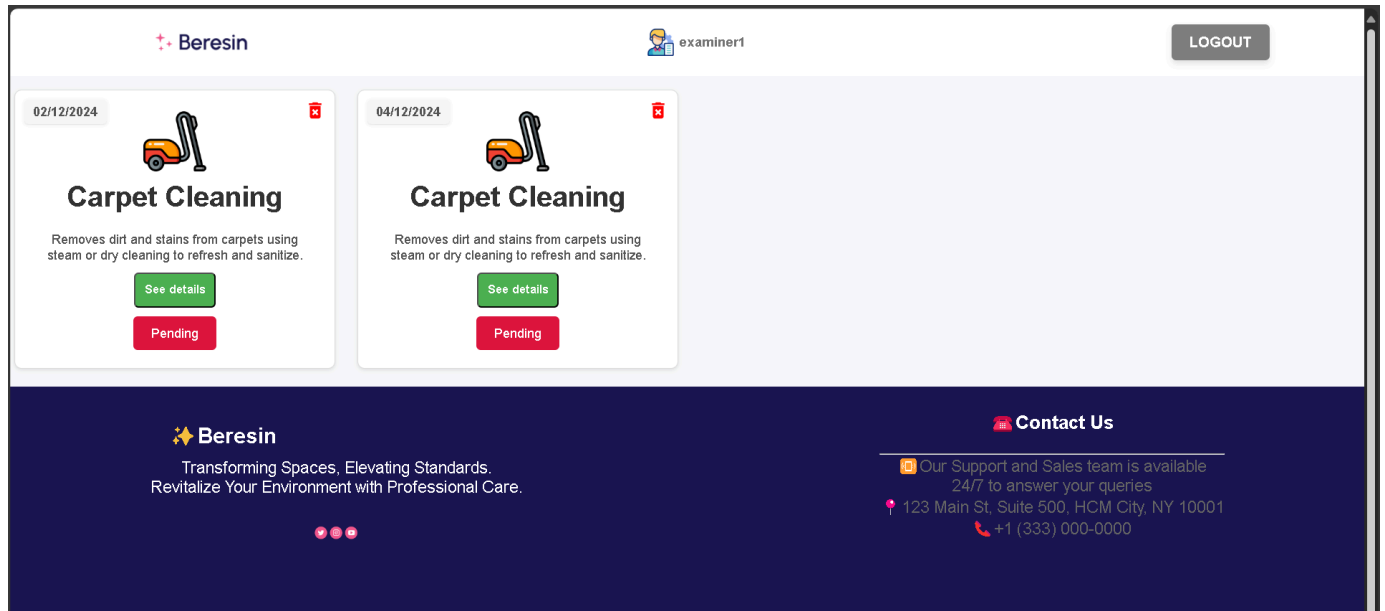


Sign in with Customer



Sign in with Staff

- **Examiner management interface.**



- **Task and contract approval interface.**

## Carpet Cleaning

✦ Customer

Name: user6

Phone: 123456

Email: darayaf684@luxyss.com


✦ Staff Undertake

Name: staff1

Phone: 123456


Email: staff1@gmail.com

✦ Execution Time: 9:00 AM




**Vacuuming**  
Remove loose dirt and debris from the carpet.

Pending




**Pre-treatment**  
Apply a cleaning solution to stains or heavily soiled areas.

Pending




**Spot cleaning**  
Treat specific stains with appropriate cleaning products.

Pending



**Drying**  
Ensure the carpet is completely dry to prevent mold and mildew.

Pending



**Deep cleaning**  
Use a steam cleaner or hot water extraction method to remove embedded dirt and grime.

Pending

- **Recheck and confirmation contract after completing staff's tasks.**

02/12/2024



## Carpet Cleaning

Removes dirt and stains from carpets using steam or dry cleaning to refresh and sanitize.

[See details](#)[Complete](#)[Completed, unchecked](#)

04/12/2024



## Carpet Cleaning

Removes dirt and stains from carpets using steam or dry cleaning to refresh and sanitize.

[See details](#)[Pending](#)

click to recheck



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### Contact Us

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24/7 to answer your queries

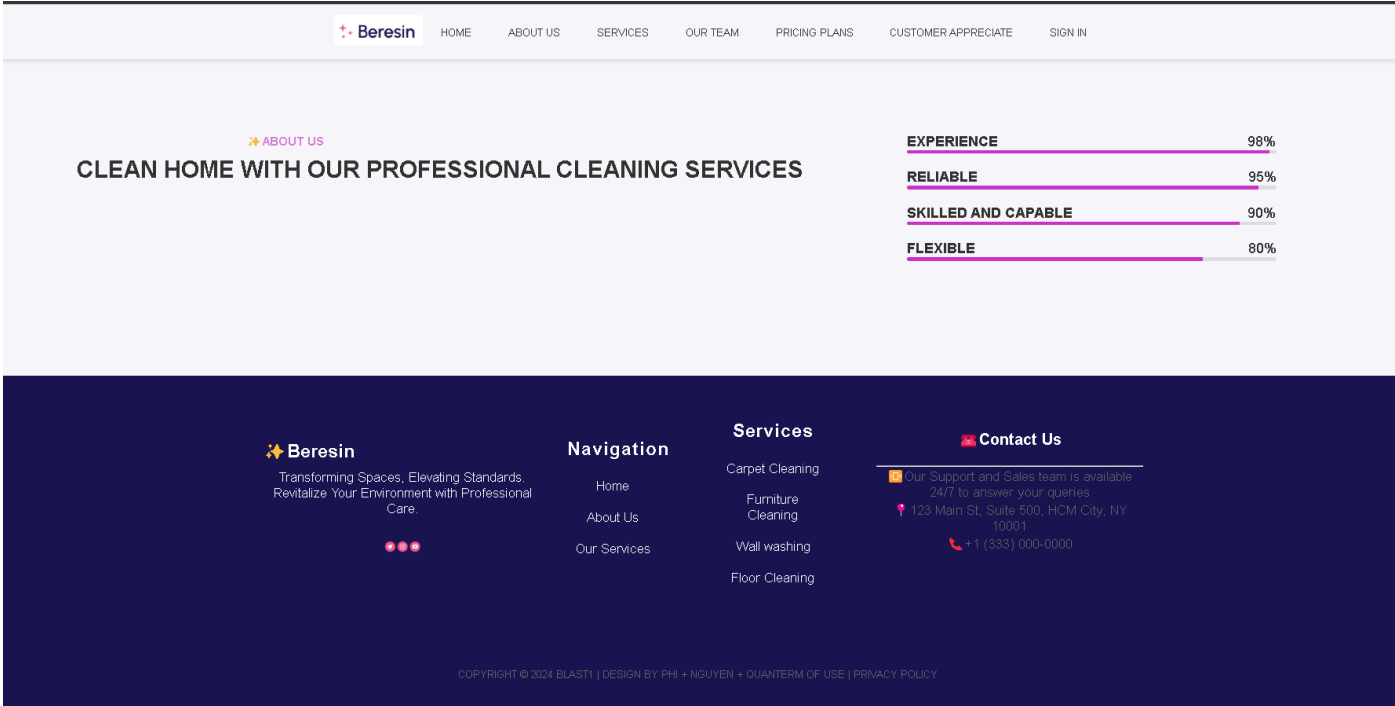
123 Main St, Suite 500, HCM City, NY 10001  
+1 (333) 000-0000



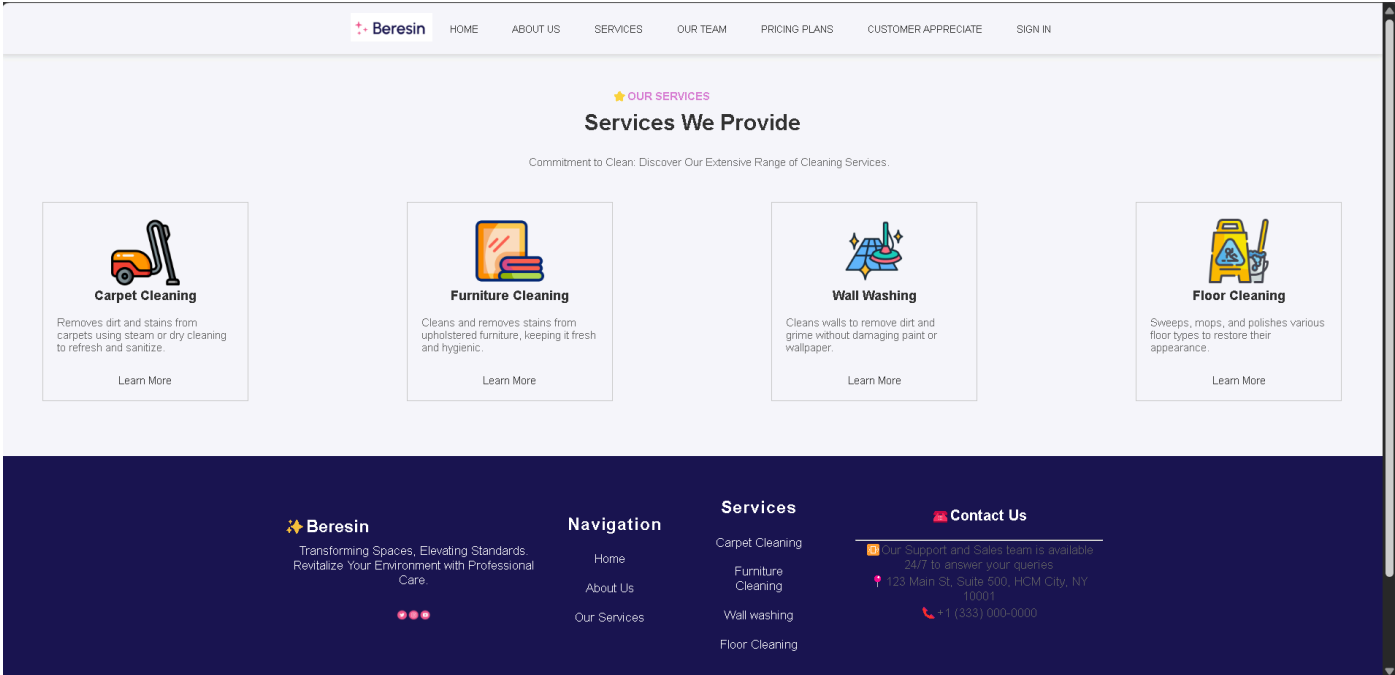
- **Home Page**



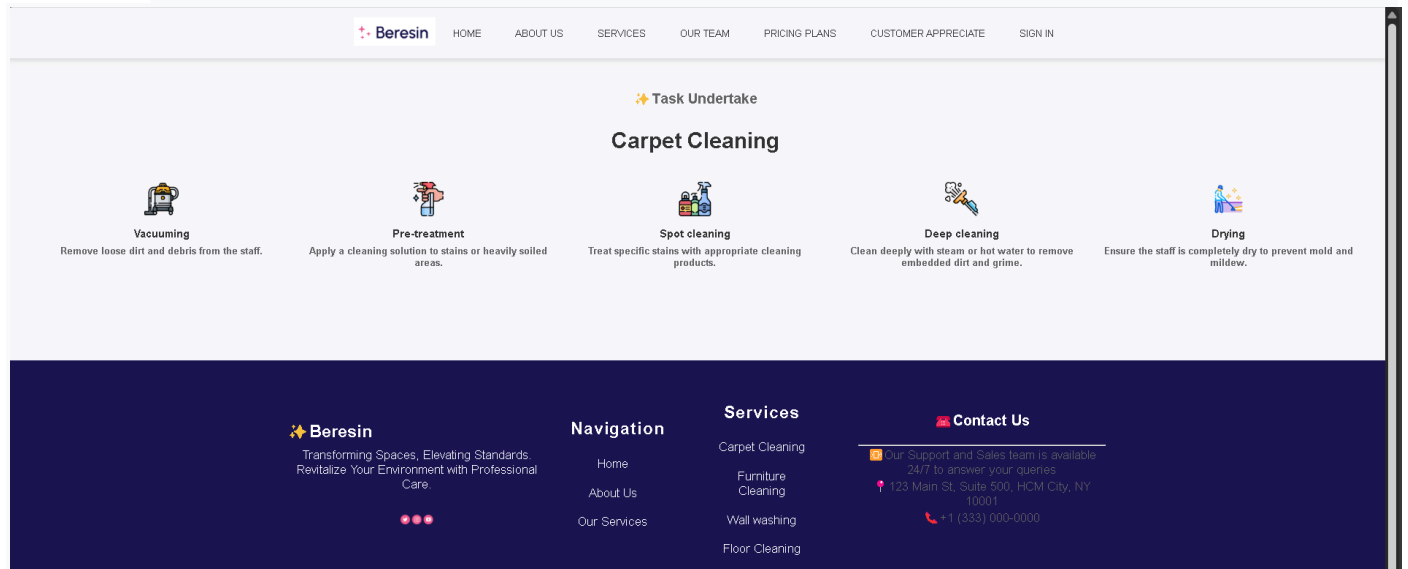
● About Us Page



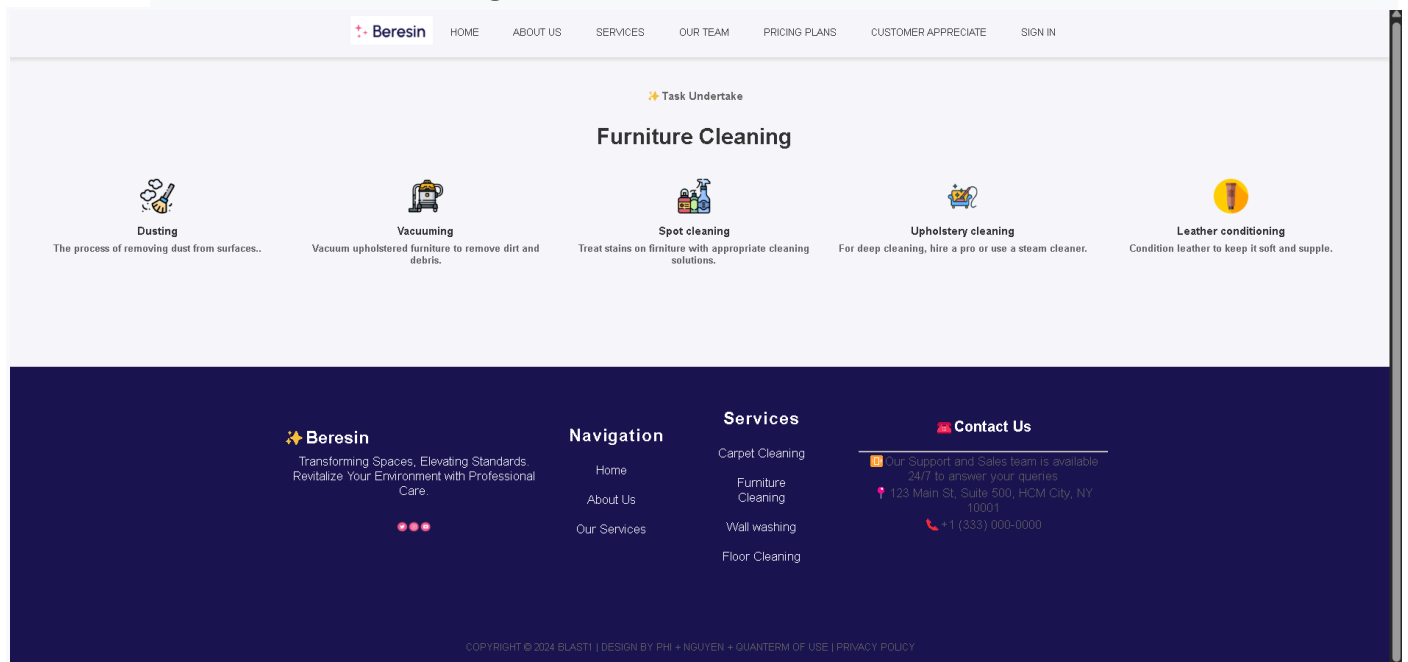
● Services Page



- **Detail Task For Each Service**
  - **Carpet Cleaning**



- **Furniture Cleaning**



○ Wall Washing

Beresin

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★ Task Undertake

Wall Washing




Dusting

The process of removing dust from surfaces




Washing

Apply a cleaning solution to stains or heavily soiled areas.



Rinsing

Treat specific strains with appropriate cleaning products.



Drying

Use steam cleaner, hot water remove embedded dirt grime.

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○ Floor Cleaning

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★ Task Undertake

Floor Cleaning




Sweeping or Vacuuming

Using a broom to clear loose debris or a vacuum to remove hidden dust




Mopping

Use a mop and cleaning solution to clean hard floors.




Scrubbing

For tougher or buildup, scrub the floor with a brush or scrubber.



Polishing or waxing

Polish, wax hardwood floors to maintain shine and protect them from damage.



Rug cleaning

Rugs on the floor, vacuum them regularly and spot clean any stains.

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● Our Team Page



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★OUR STAFF


Meet Our Cleaning Staff




**Samantha Lee**  
Senior Carpet Cleaning Technician




**James Wang**  
Upholstery & Furniture Care Specialist




**Emily Davis**  
Senior Wall Care & Cleaning Technician



**Michael Brown**  
Floor Care Specialist



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- **Staff Detail Page:**
  - **Samantha Lee**

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★ OUR STAFF

Meet Samantha Lee



Samantha Lee

Senior Carpet Cleaning Technician

BIO

With 8+ years in carpet cleaning, Samantha specializes in both steam and dry cleaning. She's certified in advanced stain removal and fabric care, ensuring every step of the process is meticulously done. Known for eco-friendly solutions, she handles both residential and commercial properties, bringing carpets back to life.

EXPERIENCE

Expert in stain removal, steam/dry cleaning.

## ○ James Wang

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### ★ OUR STAFF

## Meet James Wang



### James Wang

Upholstery & Furniture Care Specialist

#### BIO

James brings 7 years of expertise in cleaning and maintaining upholstered furniture, including high-end brands. Skilled in fabric and leather care, he offers spot cleaning, deep upholstery treatments, and conditioning to keep furniture fresh and durable.

#### EXPERIENCE

Specialist in upholstery care, with extensive work in both residential and commercial

## ○ Emily Davis

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### ★ OUR STAFF

## Meet Emily Davis



### Emily Davis

Senior Wall Care & Cleaning Technician

#### BIO

Emily has 6 years of experience in wall care, specializing in maintaining painted, wallpapered, and tiled surfaces. She ensures dirt, grime, and stains are removed without damaging the walls, using non-toxic solutions and steam cleaners. Her work spans both residential and commercial properties.

#### EXPERIENCE

Expertise in wall cleaning for various



○ **Michael Brown**



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★ **OUR STAFF**

## Meet Michael Brown



### Michael Brown

Floor Care Specialist

#### BIO

With over 10 years in floor cleaning, Michael excels at caring for hardwood, tile, laminate, and carpeted floors. He specializes in sweeping, mopping, scrubbing, polishing, and rug cleaning, leaving floors immaculate. His professional approach ensures durable, long-lasting floor care.

#### EXPERIENCE

Expert in floor care, including wood floors and rugs, with extensive experience in both

● Pricing Plans Page

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◆ Pricing Plans for Every Budget

Faucibus commodo a aenean et sit quisque ipsum. Consequat eu id ut dolor felis quis. Sagittis a sapien pulvinar etiam.

Basic Cleaning

\$350 /service

Faucibus commodo a aenean et sit quisque ipsum. Consequat eu id ut dolor felis quis.

✓ 60 Minutes Consultation

✓ 2 Bedroom Cleaning

✓ 3 Bathroom Cleaning

✓ 1 Living Room Cleaning

✓ 7 Days Guarantee

Pay

Pro Cleaning

\$650 /service

Faucibus commodo a aenean et sit quisque ipsum. Consequat eu id ut dolor felis quis.

✓ 90 Minutes Consultation

✓ 3 Bedroom Cleaning

✓ 4 Bathroom Cleaning

✓ 1 Living Room Cleaning

✓ 7 Days Guarantee

Pay

Deluxe Cleaning

\$950 /service

Faucibus commodo a aenean et sit quisque ipsum. Consequat eu id ut dolor felis quis.

✓ 120 Minutes Consultation

✓ 4 Bedroom Cleaning

✓ 5 Bathroom Cleaning

✓ 1 Living Room Cleaning

✓ 7 Days Guarantee

Pay

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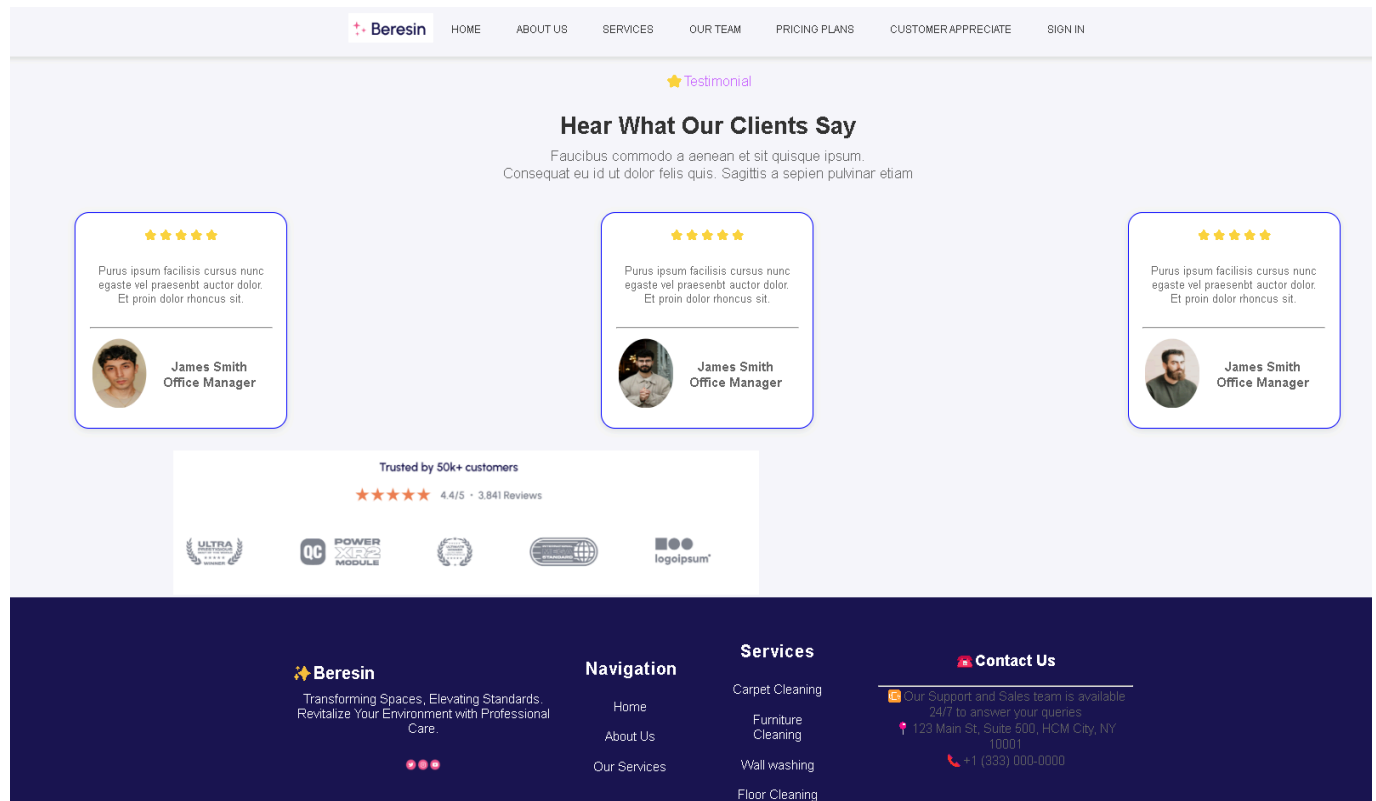
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- **Customer Appreciation Page**



## IV. DISCUSSION AND CONCLUSION

### 1. Challenges:

- **Ensuring real-time updates for task statuses.**
- **Managing dependencies between staff and examiner workflows.**
- **Handling overlapping bookings or unavailable staff.**

### 2. Strengths:

- **User-friendly interface for all roles.**
- **Clear task tracking and contract management system.**
- **Flexible payment options for users.**

### 3. Weaknesses:

- Limited to single-day service contracts.
- Cash and Paypal payments restricted to in-person transactions.
- The main services are not variety and can not recommend the extra options.

## V. Assigned Task, GitHub and Deployment

### 1. Assigned Task

- Quân: UI, UX design + frontend developer
- Nguyễn: frontend developer
- Phi: full-stack developer

### 2. GitHub

- Development (has report + diagram)
  - [https://github.com/Blast2003/Blast2003-Cleaning\\_Service](https://github.com/Blast2003/Blast2003-Cleaning_Service)
- Production:
  - [https://github.com/Blast2003/Cleaning\\_Commercial](https://github.com/Blast2003/Cleaning_Commercial)

### 3. Deployment (using Render)

- <https://cleaning-commercial.onrender.com>

## VI. REFERENCES

### Books/Articles:

- "Designing Data-Intensive Applications" by Martin Kleppmann.
- "Clean Architecture" by Robert C. Martin.

### Websites:

- **Documentation for React, Node.js, and MongoDB:**
  - <https://react.dev/>
  - <https://nodejs.org/fr>
  - <https://www.mongodb.com/>
- **Guides for creating use case and class diagrams:**
  - <https://www.figma.com/resource-library/what-is-a-use-case/>
  - <https://www.geeksforgeeks.org/unified-modeling-language-uml-class-diagrams/>

#### **Tools:**

- **Figma for UI design.**
  - <https://www.figma.com/design/6l7BIBOR4k1aAvf5ZrkFNZ/Cleaning-Service?node-id=0-1&node-type=canvas&t=MXhcsicJZC1Ctq7W-0>
- **Draw.io for diagrams.**