

WIM LAB EXP - 6

Name : Aditi Chhajer

Reg.No : 221081009

Branch : IT

Course Instructor : Prof. Nikhil Handa

AIM :

To Integrate payment gateway in your system to support online payment through, credit card, NetBanking, UPI, etc .

THEORY :

A payment gateway is a critical component of e-commerce and online transaction processing systems. It acts as a bridge between the customer and the merchant, ensuring that sensitive payment information is securely transmitted and processed. Here are some key aspects of payment gateways:

1. **Functionality:**

- **Authorization:** *When a customer makes a purchase, the payment gateway securely transmits the transaction information to the acquiring bank for authorization. This step verifies whether the customer has sufficient funds or credit available for the purchase.*
- **Transaction Processing:** *Once authorized, the payment gateway processes the transaction, ensuring that the funds are transferred from the customer's account to the merchant's account. This involves various security checks and encryption to protect sensitive information.*

2. **Types of Payment Gateways:**

- **Redirect Gateways:** *These gateways redirect the customer to a secure page (hosted by the payment processor) to complete the payment. This method is easier for merchants but can result in a less seamless user experience.*
- **API Integration:** *With this method, the payment gateway is integrated directly into the merchant's website or app, allowing customers to enter their payment details without leaving the site. This provides a more seamless experience but requires more development effort to ensure security.*

3. Payment Methods:

- *Payment gateways support various payment methods, including credit cards, debit cards, bank transfers, and digital wallets (like UPI). This versatility enables businesses to cater to a broader customer base.*

4. Security:

- *Security is paramount in online transactions. Payment gateways use encryption protocols like SSL (Secure Socket Layer) to protect sensitive data during transmission. Additionally, many gateways comply with PCI DSS (Payment Card Industry Data Security Standard) to safeguard cardholder information.*

5. User Experience:

- *The user experience during payment processing can significantly impact conversion rates. A smooth, intuitive payment flow can reduce cart abandonment and increase customer satisfaction. Thus, optimizing the payment process is crucial for e-commerce success.*

6. Role of Email Confirmation:

- *Sending payment confirmation emails is a best practice in e-commerce. It reassures customers that their transactions were successful and provides them with important information such as transaction IDs, amounts, and contact details for support. This practice enhances trust and customer retention.*

7. Integration with Services:

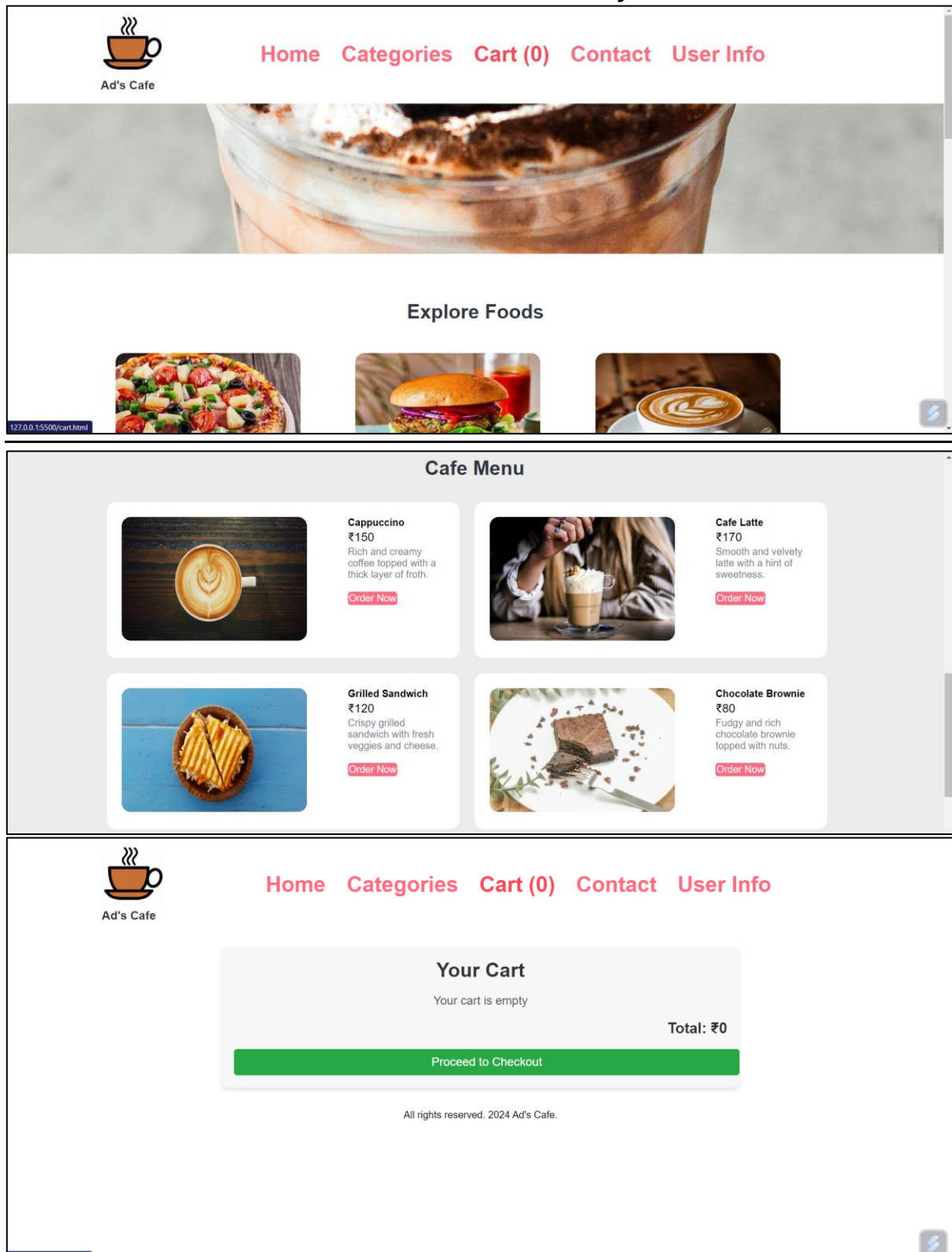
- *Many businesses integrate payment gateways with other services such as inventory management, customer relationship management (CRM), and accounting systems to streamline operations. This integration allows for real-time updates on transactions, stock levels, and customer interactions.*

8. Payment Gateway Providers:

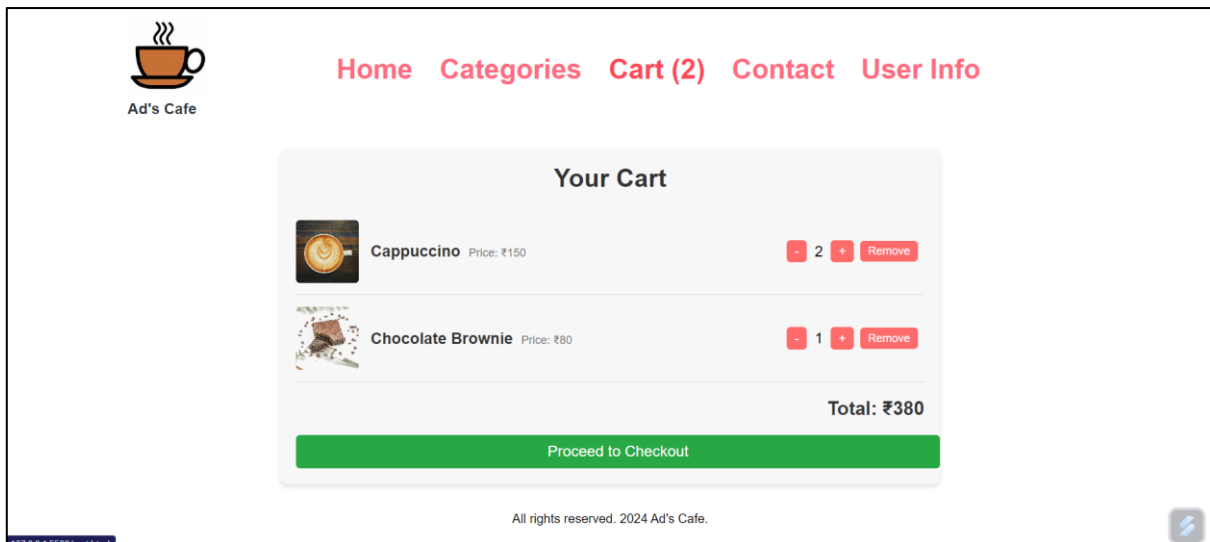
- *Numerous payment gateway providers are available, including Razorpay, Paytm, and PhonePe. Each provider offers unique features, pricing structures, and supported payment methods, allowing businesses to choose a solution that best fits their needs.*

IMPLEMENTATION :

This is the new navbar with the Cart functionality.



*As we click on order now, the **cart is updated** with the items and quantities **dynamically**.*



This is an **updated cart** with 2 items and different quantities. We have a **remove button**, which will remove the items as well as **dynamic bill total logic**.

Payment

Total: ₹380

Personal Information

Name:

Email:

Phone Number:

Credit/Debit Card

Net Banking

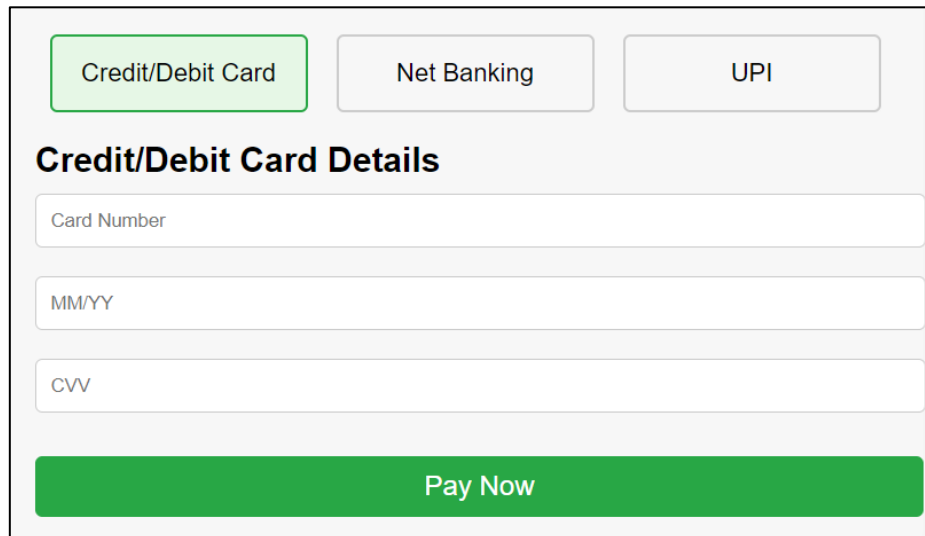
UPI

Pay Now

When we click **"Proceed to Checkout"** we are directed to this new payment page which has 3 online banking options – **Credit/Debit Card, Net Banking, UPI**.

On selecting various payment options we have –

1. Credit/Debit Card



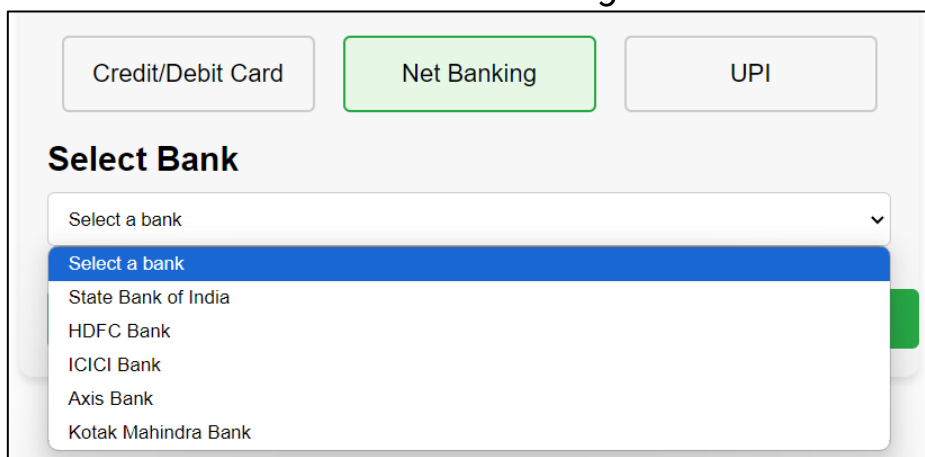
The form for Credit/Debit Card payment features three buttons at the top: 'Credit/Debit Card' (highlighted in green), 'Net Banking', and 'UPI'. Below these is the section 'Credit/Debit Card Details' which contains three input fields: 'Card Number', 'MM/YY' (expiry date), and 'CVV'. At the bottom of this section is a large green 'Pay Now' button.

```
// Validate inputs based on selected payment mode
if (selectedPaymentMode === 'card') {
  const cardNumber = document.getElementById('card-number').value
  const cardExpiry = document.getElementById('card-expiry').value
  const cardCVV = document.getElementById('card-cvv').value

  // Validate card number (should be 16 digits)
  if (!/^\d{16}$/.test(cardNumber)) {
    errorMessage = 'Please enter a valid 16-digit card number.'
    isValid = false
  }
  // Validate expiry date (MM/YY format)
  else if (!/^(0[1-9]|1[0-2])\/\d{2}$/.test(cardExpiry)) {
    errorMessage = 'Please enter a valid expiry date in MM/YY format.'
    isValid = false
  }
  // Validate CVV (should be 3 digits)
  else if (!/^\d{3}$/.test(cardCVV)) {
    errorMessage = 'Please enter a valid 3-digit CVV.'
    isValid = false
  }
}
```

Validating the inputs.

2. Net banking



The form for Net banking payment features three buttons at the top: 'Credit/Debit Card', 'Net Banking' (highlighted in green), and 'UPI'. Below these is the section 'Select Bank' which contains a dropdown menu. The dropdown is open, showing a list of banks: 'State Bank of India', 'HDFC Bank', 'ICICI Bank', 'Axis Bank', and 'Kotak Mahindra Bank'. The 'Select a bank' option is highlighted in blue.

3. UPI

Credit/Debit Card

Net Banking

UPI

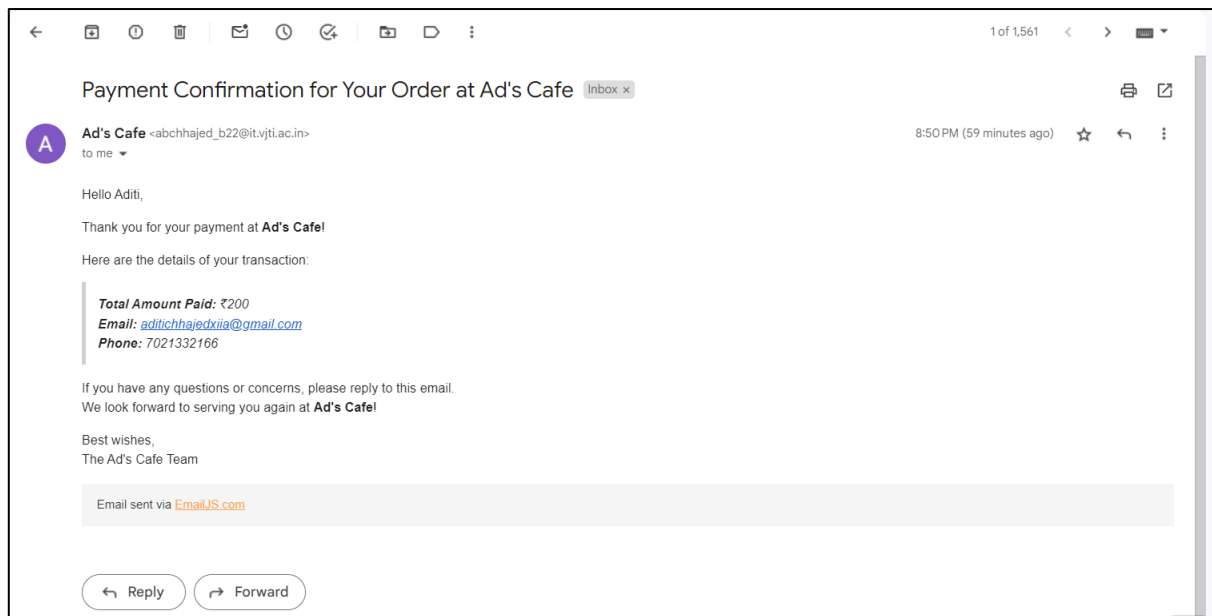
Enter UPI ID

example@upi

Pay Now

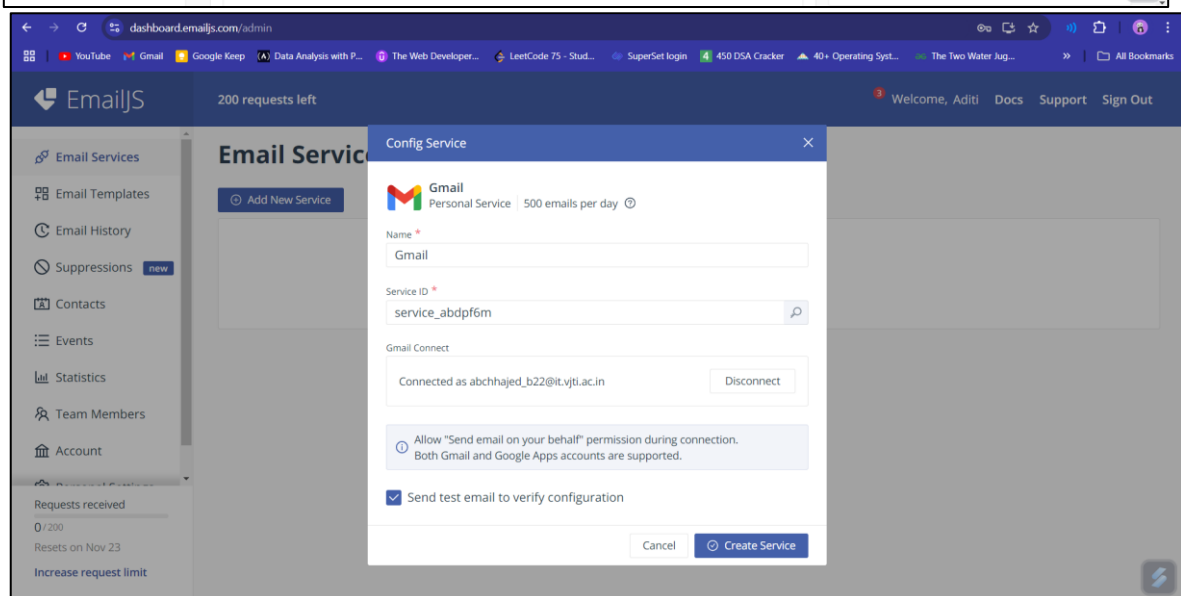
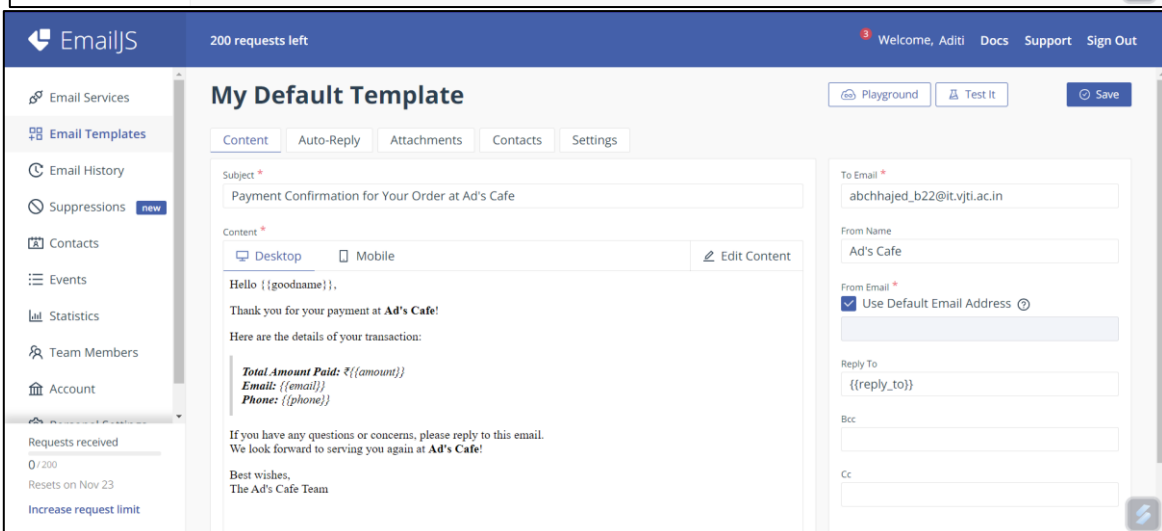
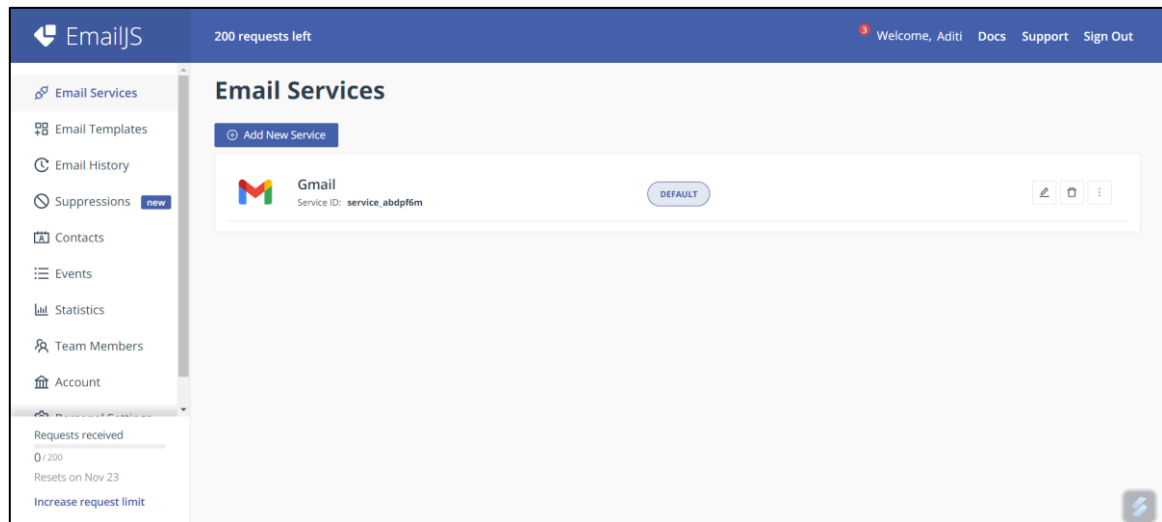
```
else if (selectedPaymentMode === 'upi') {
  const upiID = document.getElementById('upi-id').value
  if (!upiID.match(/^[a-zA-Z0-9._-]{2,256}@[a-zA-Z]{2,64}$/)) {
    errorMessage = 'Please enter a valid UPI ID.'
    isValid = false
  }
}
```

Validating the inputs



This is the mail sent on clicking the “Pay Now” button using EmailJS.

We make use of **EmailJS**



These are the services and templates used for sending emails.

CONCLUDING REMARKS:

*The design and implementation of the payment interface for Ad's Cafe, including the personal information section, showcases a comprehensive approach to enhancing user experience during online transactions. By integrating various payment methods—**credit/debit cards, net banking, and UPI**—the platform accommodates diverse user preferences, promoting convenience and accessibility.*

*The **careful validation of input fields ensures data integrity and security**, which are paramount in financial transactions. The **use of JavaScript for real-time validation and feedback enhances interactivity**, guiding users to provide correct information and reducing the likelihood of errors.*

Furthermore, the personal information section not only collects essential user data but does so in a visually appealing manner, aligning with modern web design standards. The inclusion of clear labelling, responsive input fields, and a cohesive design contributes to a positive user experience, encouraging customers to complete their transactions smoothly.

*Overall, this experiment demonstrates the effective integration of frontend technologies to create a **robust, user-friendly payment system** that is both functional and aesthetically pleasing. By focusing on user experience, security, and design principles, Ad's Cafe is well-positioned to provide a seamless online ordering experience, fostering customer satisfaction and loyalty.*