full appendix to set payment function/payment gateway

Here's a detailed appendix to set up a payment function for house tax payments in your City Council project using Razorpay, Stripe, or UPI-based systems (Google Pay, PhonePe, etc.). It includes database, backend, and frontend setup.

1. Database Setup

Add a table to store payment details:

SQL Table: `house_tax_payments`

```sql
CREATE TABLE house_tax_payments (
    payment_id INT AUTO_INCREMENT PRIMARY KEY,
    user_id INT NOT NULL,
    property_id INT NOT NULL,
    amount_due DECIMAL(10,2) NOT NULL,
    amount_paid DECIMAL(10,2) DEFAULT 0.00,
    payment_status ENUM('Pending', 'Completed', 'Failed') DEFAULT 'Pending',
    payment_date DATETIME DEFAULT NULL,
    transaction_id VARCHAR(255),
    payment_method VARCHAR(50),
    FOREIGN KEY (user_id) REFERENCES customers(customer_id),
    FOREIGN KEY (property_id) REFERENCES properties(property_id)
);
```

2. Payment Gateway Setup

Choose your payment gateway and sign up for an account. Get the **API Key** and **Secret Key**.

Razorpay:

- Website: Razorpay
- Documentation: Razorpay Docs

Stripe:

- Website: Stripe
- Documentation: Stripe Docs

UPI Integration:

- Integrate a QR Code or intent-based UPI payments for India.

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3. Backend Integration

Create an API endpoint to handle the payment process.

Example (Razorpay - PHP)

1. Install Razorpay SDK:

```bash
composer require razorpay/razorpay
```

2. Create Payment Order (`createOrder.php`):

```php
require('razorpay-php/Razorpay.php');

use Razorpay\Api\Api;

$api = new Api('YOUR_API_KEY', 'YOUR_SECRET_KEY');

// Payment details
$amount = 50000; // ₹500 (in smallest currency unit)
$orderData = [
    'receipt'         => 'order_rcptid_11',
    'amount'          => $amount,
    'currency'        => 'INR',
    'payment_capture' => 1
];

try {
    $order = $api->order->create($orderData);
    echo json_encode($order);
} catch (Exception $e) {
    echo 'Error: ' . $e->getMessage();
}
```

4. Frontend Integration

Use the respective gateway's frontend SDK to process payments.

Razorpay (JavaScript)

```html
<button id="pay-btn">Pay Now</button>
<script src="https://checkout.razorpay.com/v1/checkout.js"></script>
<script>
    document.getElementById('pay-btn').onclick = function () {
        var options = {
            "key": "YOUR_API_KEY",
            "amount": "50000", // ₹500 in smallest currency unit
            "currency": "INR",
            "name": "City Council",
            "description": "House Tax Payment",
            "image": "https://example.com/logo.png",
            "order_id": "order_DBJOWzybf0sJbb", // Order ID from backend
            "handler": function (response) {
                alert("Payment Successful: " + response.razorpay_payment_id);
                // Send response.razorpay_payment_id to backend for verification
            },
            "theme": {
                "color": "#3399cc"
            }
        };
        var rzp1 = new Razorpay(options);
        rzp1.open();
    }
</script>
```

5. Payment Confirmation

Verify the payment status and update the database.

Razorpay (Verify Payment):

```php
php                                                    Copy code

$attributes = [
    'razorpay_order_id' => $_POST['razorpay_order_id'],
    'razorpay_payment_id' => $_POST['razorpay_payment_id'],
    'razorpay_signature' => $_POST['razorpay_signature']
];

try {
    $api->utility->verifyPaymentSignature($attributes);
    // Update payment status in the database
    $query = "UPDATE house_tax_payments SET payment_status = 'Completed' WHERE payment_id
    $stmt = $conn->prepare($query);
    $stmt->bind_param("s", $payment_id);
    $stmt->execute();
} catch (Exception $e) {
    echo 'Payment verification failed: ' . $e->getMessage();
}
```

1. Generate a PDF Receipt

You can use the **FPDF** library for creating PDF receipts.

Install FPDF

Download FPDF and include it in your project.

Example Code (`generateReceipt.php` **):**

```php
php                                                      Copy code

require('fpdf/fpdf.php');

// Payment details (fetch from your database)
$payment_id = $_GET['payment_id']; // Passed from frontend
$query = "SELECT * FROM house_tax_payments WHERE payment_id = ?";
$stmt = $conn->prepare($query);
$stmt->bind_param("i", $payment_id);
$stmt->execute();
$result = $stmt->get_result();
$payment = $result->fetch_assoc();

if ($payment) {
    // Generate PDF
    $pdf = new FPDF();
    $pdf->AddPage();
    $pdf->SetFont('Arial', 'B', 16);
    $pdf->Cell(40, 10, 'Payment Receipt');

    $pdf->Ln(10);
    $pdf->SetFont('Arial', '', 12);
```

```php
    $pdf->Cell(40, 10, "Payment ID: " . $payment['payment_id']);
    $pdf->Ln(10);
    $pdf->Cell(40, 10, "Property ID: " . $payment['property_id']);
    $pdf->Ln(10);
    $pdf->Cell(40, 10, "Amount Paid: ₹" . $payment['amount_paid']);
    $pdf->Ln(10);
    $pdf->Cell(40, 10, "Payment Date: " . $payment['payment_date']);
    $pdf->Ln(10);
    $pdf->Cell(40, 10, "Payment Status: " . $payment['payment_status']);

    $file_name = 'receipt_' . $payment_id . '.pdf';
    $pdf->Output('F', 'receipts/' . $file_name); // Save in a folder
    echo json_encode(['success' => true, 'file' => $file_name]);
} else {
    echo json_encode(['success' => false, 'message' => 'Payment not found']);
}
```

2. Send Email Notifications

You can use the **PHPMailer** library for sending emails.

Install PHPMailer

```bash
composer require phpmailer/phpmailer
```

Example Code (`sendEmailNotification.php`):

```php
use PHPMailer\PHPMailer\PHPMailer;
use PHPMailer\PHPMailer\Exception;

require 'vendor/autoload.php';

function sendEmailNotification($email, $name, $payment) {
    $mail = new PHPMailer(true);
    try {
        // SMTP settings
        $mail->isSMTP();
        $mail->Host = 'smtp.example.com'; // Your SMTP server
        $mail->SMTPAuth = true;
        $mail->Username = 'your-email@example.com';
        $mail->Password = 'your-email-password';
        $mail->SMTPSecure = 'tls';
        $mail->Port = 587;

        // Email content
        $mail->setFrom('noreply@example.com', 'City Council');
        $mail->addAddress($email, $name);
        $mail->isHTML(true);
        $mail->Subject = 'Payment Confirmation';
        $mail->Body = "
            <h3>Payment Receipt</h3>
            <p>Thank you for your payment. Below are the details:</p>
            <p>Payment ID: {$payment['payment_id']}</p>
            <p>Amount Paid: ₹{$payment['amount_paid']}</p>
            <p>Date: {$payment['payment_date']}</p>
        ";

        $mail->send();
        return true;
    } catch (Exception $e) {
        return false;
    }
}

// Call this function after payment
$email = "customer@example.com"; // Fetch from database
$name = "Customer Name"; // Fetch from database
sendEmailNotification($email, $name, $payment);
```

3. Display Payment History

Create a backend API endpoint to fetch payment records.

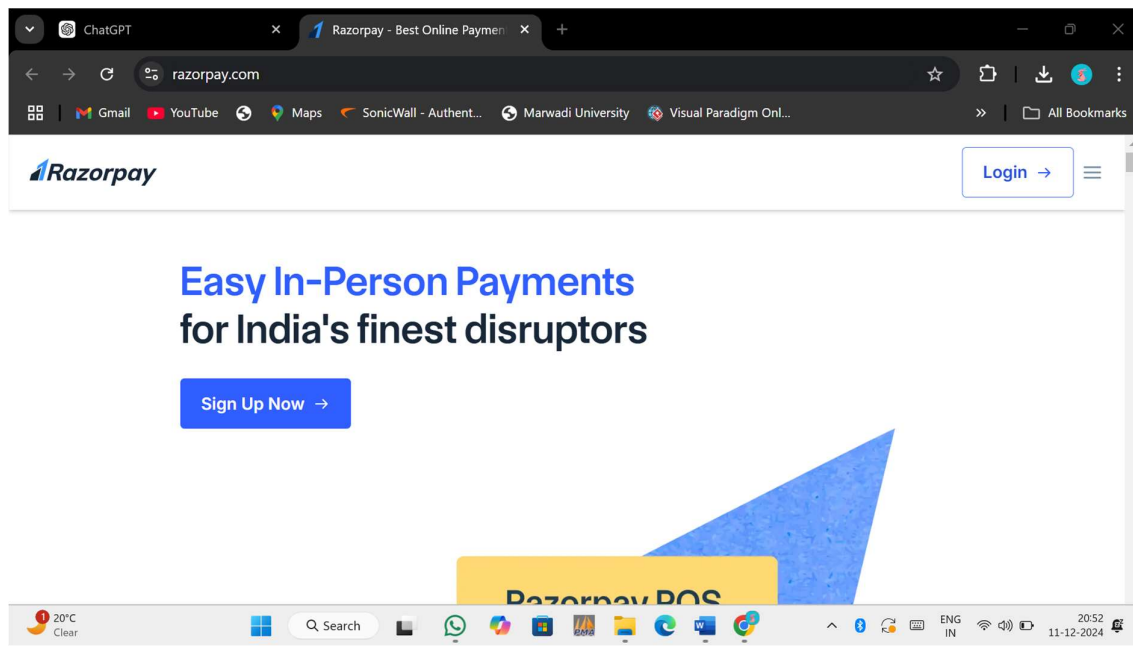API Endpoint (`getPaymentHistory.php`):

```php
$user_id = $_SESSION['user_id']; // Assume user is logged in

$query = "SELECT * FROM house_tax_payments WHERE user_id = ?";
$stmt = $conn->prepare($query);
$stmt->bind_param("i", $user_id);
$stmt->execute();
$result = $stmt->get_result();

$payments = [];
while ($row = $result->fetch_assoc()) {
    $payments[] = $row;
}
echo json_encode(['success' => true, 'payments' => $payments]);
```
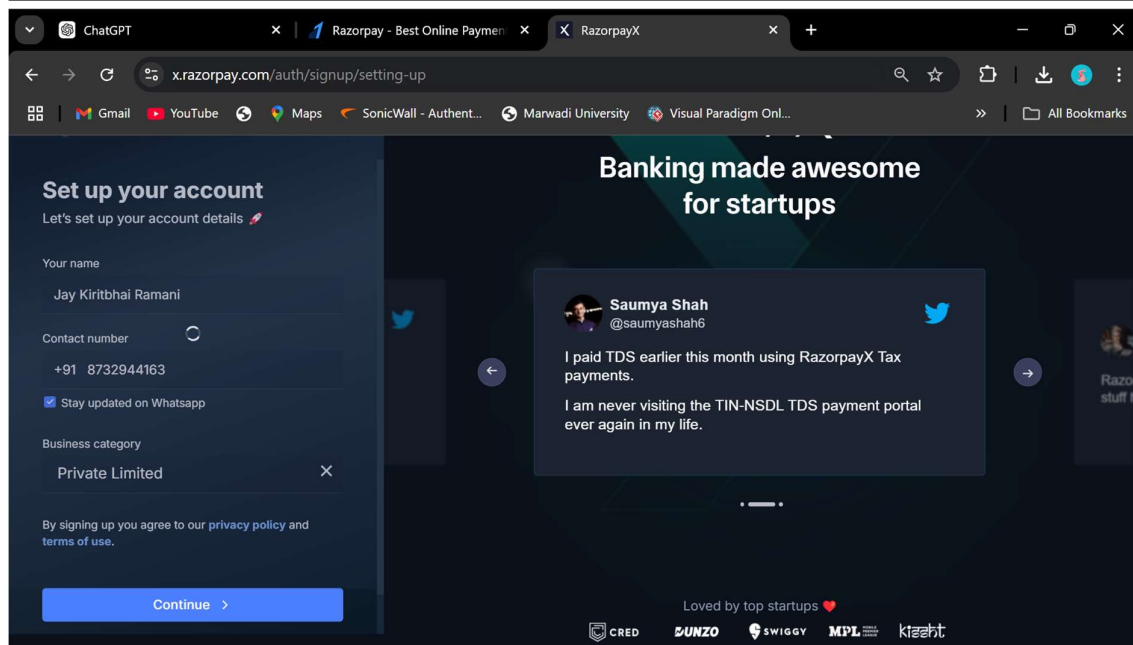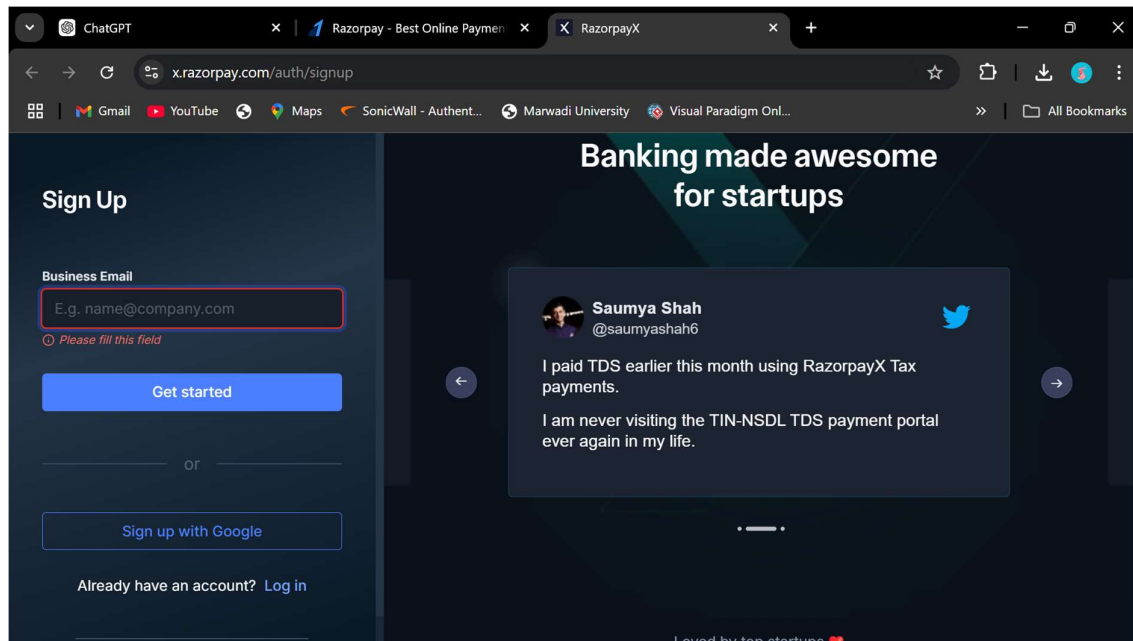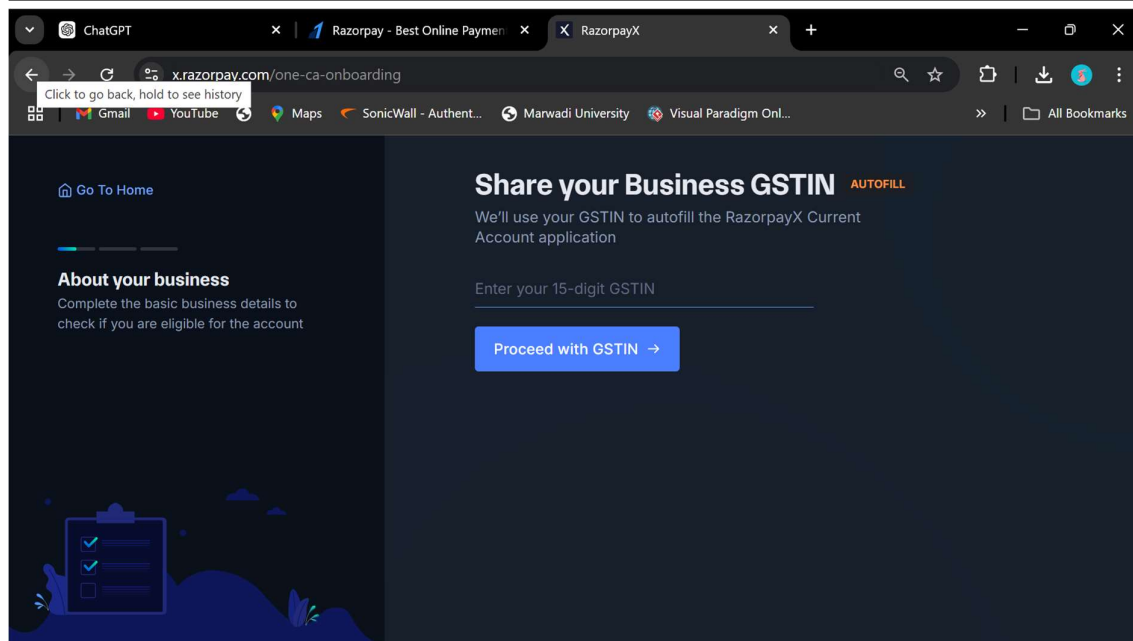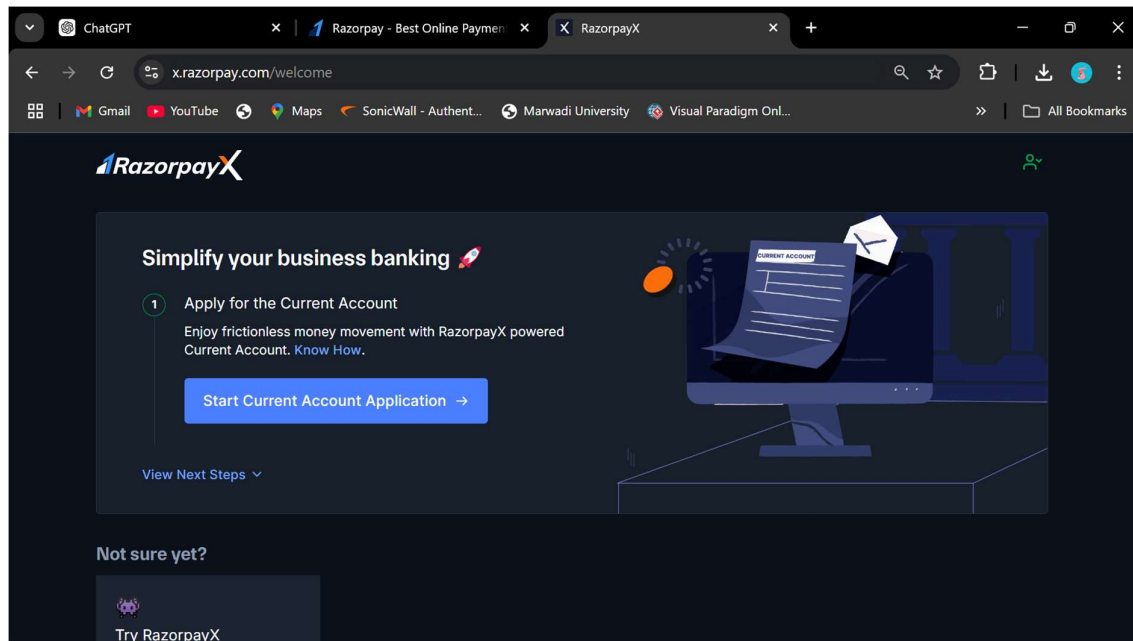
Sign_UP in Razorpay and API KEY/SECRET_KEY