

Name: Shubham Sonake

Email: shubhamsonake307@gmail.com

PROJECT DOCUMENTATION: SMS SERVICE IMPLEMENTATION

OVERVIEW

This documentation covers the implementation of an SMS service using Twilio API, including a development mode that allows testing without requiring phone number verification or a paid Twilio account.

LIVE DEPLOYMENT

<https://sms-lilac-kappa.vercel.app/>

TECHNOLOGIES USED

- **Frontend Framework:** Reactjs
- **SMS Service:** Twilio API
- **Package Management:** npm
- **Environment Management:** dotenv (for .env file configuration)
- **Programming Language:** JavaScript
- **Runtime Environment:** Node.js (for development)
- **Version Control:** Git

SCREENSHOTS

Contacts

5 total

🔍 Search contacts...

JD

John Doe
+919810153260


JS


Jane Smith
+919810153260

MJ

Michael Johnson
+919810153260


JS	+919810153260	
JS	Jane Smith +919810153260	>
MJ	Michael Johnson +919810153260	>
EW	Emily Williams +919810153260	>
DB	David Brown +919810153260	>


 Contacts

 Messages

Sent Messages

0 total

 Search by name or OTP...



No Messages Yet

When you send messages to contacts, they will appear here.

Contacts

Messages

Back

Contact Details

JD

John Doe

+919810153260

CONTACT INFORMATION

Full Name

John Doe

Phone Number

+919810153260

Send Message

Back

new message

RECIPIENT

JD

John Doe

+919810153260

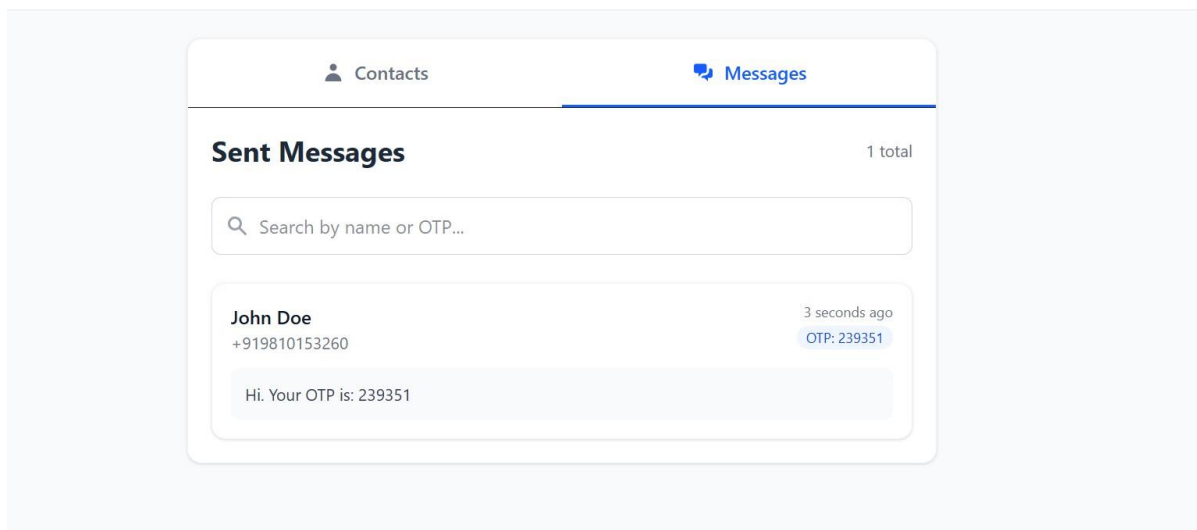
MESSAGE

Hi. Your OTP is: 988269

OTP: 988269

23 characters

Send Message



INSTALLATION GUIDE

1. Clone the repository to your local machine
2. Install dependencies:
3. npm install
4. Create a .env file in the project root with the following variables:
5. VITE_TWILIO_ACCOUNT_SID=your_twilio_account_sid
6. VITE_TWILIO_AUTH_TOKEN=your_twilio_auth_token
7. VITE_TWILIO_PHONE_NUMBER=your_twilio_phone_number
8. Configure development mode: Open src/services/smsService.js and ensure DEV_MODE is set to true for development
9. Start the development server:
10. npm run dev
11. Build for production:
12. npm run build

ENVIRONMENT VARIABLES

The application requires the following environment variables to be set in a .env file:

VITE_TWILIO_ACCOUNT_SID

- Your Twilio account SID
- Can be found in your Twilio dashboard
- Example: AC91abddbc48f01ef4d4c414e36822e14c

VITE_TWILIO_AUTH_TOKEN

- Your Twilio authentication token
- Can be found in your Twilio dashboard
- Keep this secret and never commit to version control
- Example: 28d9bb14be0261a68b786059f8cbee64

VITE_TWILIO_PHONE_NUMBER

- Your Twilio phone number for sending messages
- Must be in E.164 format
- Example: +15808758113

COMPONENTS

SMS Service (src/services/smsService.js)

The service provides functionality to send SMS messages using Twilio's API, with a development mode that simulates sending without making actual API calls.

Key Features:

- Send SMS messages via Twilio API
- Development mode for testing without actual API calls
- Environment variable configuration for secure credential management
- Comprehensive error handling, especially for common Twilio errors

IMPLEMENTATION DETAILS

Development Mode:

I implemented a development mode to facilitate testing without needing to:

- Verify recipient phone numbers
- Make actual API calls to Twilio
- Spend money on your Twilio account

When DEV_MODE is set to true, the service:

1. Logs the intended message details to the console
2. Returns a simulated successful response that mimics Twilio's format
3. Bypasses the actual Twilio API call entirely

Error Handling:

The service includes specific error handling for:

- Missing environment variables
- Invalid input parameters (missing phone number or message)

- Unverified phone numbers when using a Twilio trial account
- General Twilio API errors

ASSUMPTIONS

1. **Development vs Production:** I assumed that during development, real SMS delivery isn't necessary, so a simulation mode is appropriate.
2. **Environment:** The application is built using Vite, which provides its own method for handling environment variables.
3. **Security:** I assumed that sensitive Twilio credentials should be stored in environment variables rather than hardcoded.
4. **Error Presentation:** I assumed that detailed error messages are helpful during development but might need to be simplified for end users in production.
5. **Twilio Account Status:** I assumed you're using a trial Twilio account which has limitations on sending to unverified numbers.

USAGE

Development Mode:

During development, set `DEV_MODE = true` at the top of the `smsService.js` file. This will:

- Log messages to the console instead of sending them
- Return mock responses with the same structure as real Twilio responses
- Allow testing of SMS-dependent features without real SMS delivery

Example log output:

DEV MODE: Simulating SMS sent to: +1234567890

DEV MODE: Message content: Your verification code is 123456

Production Mode:

When ready for production:

1. Set `DEV_MODE = false`
2. Either:
 - Verify recipient phone numbers in your Twilio dashboard, or
 - Upgrade to a paid Twilio account

FUNCTION REFERENCE

sendSMS(phoneNumber, message)

Sends an SMS message to the specified phone number.

Parameters:

- `phoneNumber` (string): The recipient's phone number in E.164 format (e.g., +1234567890)
- `message` (string): The text content of the SMS message

Returns:

- A Promise that resolves to the Twilio API response object (or a simulated response in DEV_MODE)

Throws:

- Error if Twilio credentials are missing
- Error if phone number or message is invalid
- Error if the recipient phone number is unverified (in production mode with a trial account)
- Error for any other Twilio API failures

NEXT STEPS

To fully deploy this service to production:

1. Set DEV_MODE = false
2. Ensure all recipient numbers are either verified or upgrade to a paid Twilio account
3. Consider implementing rate limiting to control SMS sending frequency
4. Add logging of all SMS activities for audit purposes
5. Consider implementing a retry mechanism for failed SMS deliveries

TROUBLESHOOTING

Common Issues:

1. **"process is not defined" error:**
 - This occurs when trying to use Node.js process object in the browser
 - Solution: Use import.meta.env instead of process.env for environment variables
2. **"The phone number is not verified" error:**
 - This happens when using a trial Twilio account to send messages to unverified numbers
 - Solution: Verify the recipient number in Twilio dashboard or use DEV_MODE=true
3. **Environment variables not loading:**
 - Make sure all environment variables start with VITE_ prefix
 - Ensure .env file is in the project root directory
 - Restart the development server after making changes to .env