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MIT WORLD PEACE UNIVERSITY | PUNE
TECHNOLOGY, RESEARCH, SOCIAL INNOVATION & PARTNERSHIPS

MIT-WPU
॥ विश्वशान्तिर्ध्रुवं ध्रुवा ॥

School of Computer Science and Engineering

Department of Computer Engineering and Technology

Third Year B. Tech. CSE (Cybersecurity and Forensics)

CSF3PM01A : Full Stack Development

Mini project Report

Project Title: Dripstream OTT Platform

Group Members:

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Riya Naik	1032231063	Panel A
Meha Patel	1032231163	Panel A
Stavan Mistry	1032232436	Panel A

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1. **Abstract :**

This mini project presents *DripStream*, a full-stack OTT subscription platform that simulates real-world payment workflows, email automation, and admin monitoring. The system integrates PayPal Sandbox for secure payment simulation, Nodemailer for transactional email delivery, and MongoDB for subscription tracking. Users can subscribe to plans, receive confirmation emails, and view movie posters with metadata. Admins can monitor subscriptions in real time via a responsive dashboard. The project demonstrates modular architecture, secure backend flows, and a cinematic frontend experience. Key findings include successful integration of payment and email systems, robust data logging, and scalable UI components.

DripStream leverages **PayPal Sandbox** to enable secure and seamless payment simulations, ensuring users can subscribe to various plans with authentic transactional flow. **Nodemailer** is employed to handle automated email delivery for subscription confirmations, payment receipts, and user notifications, enhancing the overall user experience through prompt and reliable communication. **MongoDB** serves as the central database for managing user data, subscription records, and activity logs, ensuring efficient data storage and retrieval.

From a user perspective, the platform provides a cinematic frontend experience where subscribers can explore and view **movie posters, metadata, and plan details** through an interactive and responsive interface. On the administrative side, a **real-time dashboard** enables system monitoring, subscription tracking, and management of user activities, ensuring transparency and control over the entire workflow.

The project demonstrates **modular system architecture**, **secure backend integration**, and a **scalable UI design**, reflecting industry practices in web-based subscription platforms. Key outcomes include successful integration of payment and email systems, robust data logging, enhanced security handling, and smooth synchronization between client and server components. Overall, DripStream showcases the implementation of a modern, data-driven OTT subscription system that combines technology, usability, and security in a single, cohesive solution.

2. Introduction:

Background and Motivation

OTT platforms have transformed digital entertainment, offering subscription-based access to movies and series. Managing subscriptions securely and efficiently is vital for user satisfaction and business operations. This project aims to simulate a real-world OTT subscription system using modern web technologies.

Problem Statement

Existing academic projects often lack real payment simulation, automated communication, and admin visibility. This project addresses these gaps by integrating payment, email, and dashboard functionalities.

3. Objectives

- Implement PayPal-based subscription flow
- Automate email notifications for users and admins
- Log subscriptions with validity tracking
- Display movie posters and metadata
- Provide a real-time admin dashboard

4. Scope and Limitations

Scope:

- **Payment simulation using PayPal Sandbox**
- **Email automation via Nodemailer**
- **MongoDB-based subscription logging**
- **Admin dashboard and poster viewing**

Limitations:

- **No live payment credentials**
- **Limited user authentication**
- **No analytics or expiry alerts**

5. Literature Review:

- **Commercial OTT Platforms**

Netflix, Amazon Prime Video, and Disney+ Hotstar use proprietary subscription engines integrated with billing, analytics, and personalization. These systems support multi-tiered pricing, regional licensing, and fraud detection but are closed-source and inaccessible for prototyping.

- **Open-Source Alternatives**

Ghost CMS and Strapi offer basic subscription models focused on content gating. They support Stripe or PayPal but lack real-time dashboards, dynamic metadata, and flexible subscription tracking.

- **PayPal Sandbox**

PayPal Sandbox enables secure testing of payment flows with simulated checkout, approval, and redirect URLs. It supports parameterized metadata and is ideal for academic and prototype environments.

- **Nodemailer**

Nodemailer is a Node.js library for sending transactional emails. It supports SMTP, OAuth2, HTML templating, and multiple recipients. It’s widely used for password resets, confirmations, and alerts.

- **MongoDB**

MongoDB is a document-based NoSQL database that supports dynamic schemas. It allows flexible storage of subscription data, easy querying, and scalable backend integration.

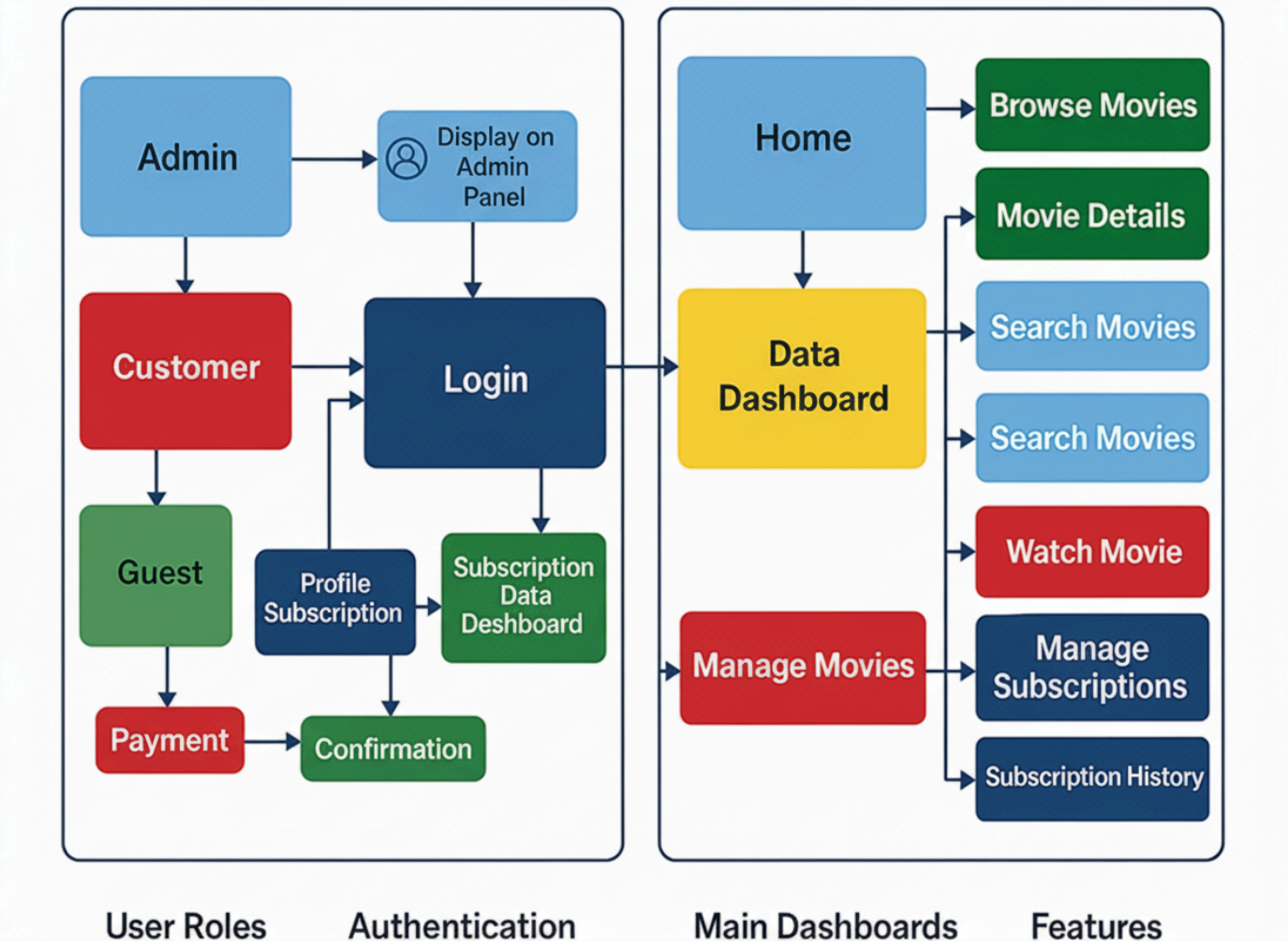
6. Methodology:

The project follows a modular architecture with separate routes for authentication, movies, PayPal, and subscriptions. Static files are served for frontend dashboards, and session-based access controls protect admin routes.

Technologies Used

- **Frontend**: HTML, CSS, JavaScript
- **Backend**: Node.js, Express
- **Database**: MongoDB
- **Email**: Nodemailer with Gmail App Password
- **Payment**: PayPal Sandbox

Architecture:



7. Results and Discussion:

Outcomes

- User can see movie poster info and check latest movie
- PayPal payment flow completes successfully
- Emails sent to users and admins
- Subscriptions logged in MongoDB
- Admin dashboard displays real-time data

Successes

- Seamless integration of PayPal and Nodemailer
- Clean UI for admin monitoring
- Secure backend with validation and error handling
- Achieved **real-time admin monitoring** of subscription activities through dynamic dashboard updates.

- Effective **data management** and **logging mechanisms** in MongoDB for accurate record keeping.

Challenges

- Ensuring query parameters persist across redirects
- Debugging empty MongoDB entries
- Integrating PayPal for Payment
- Handling **asynchronous functions** to ensure email notifications and database writes occur in the correct order.

- Designing **secure backend flows** to prevent data leakage and maintain transactional integrity.

The system meets its core objectives and simulates a real-world OTT subscription engine. Admins can monitor users, and users receive confirmation instantly. Poster viewing adds a cinematic touch to the platform. The inclusion of poster viewing and movie metadata adds a cinematic and engaging user experience.The project demonstrates a **scalable, modular, and secure architecture**, suitable for future expansion into a production-level OTT platform

8. Conclusion:

DripStream successfully demonstrates a secure, modular OTT subscription platform with real-time admin visibility and automated email workflows. It integrates payment, email, and database systems in a full-stack web application.

Future Work

- Add live PayPal credentials for production
- Integrate analytics and subscription expiry alerts

9. References:

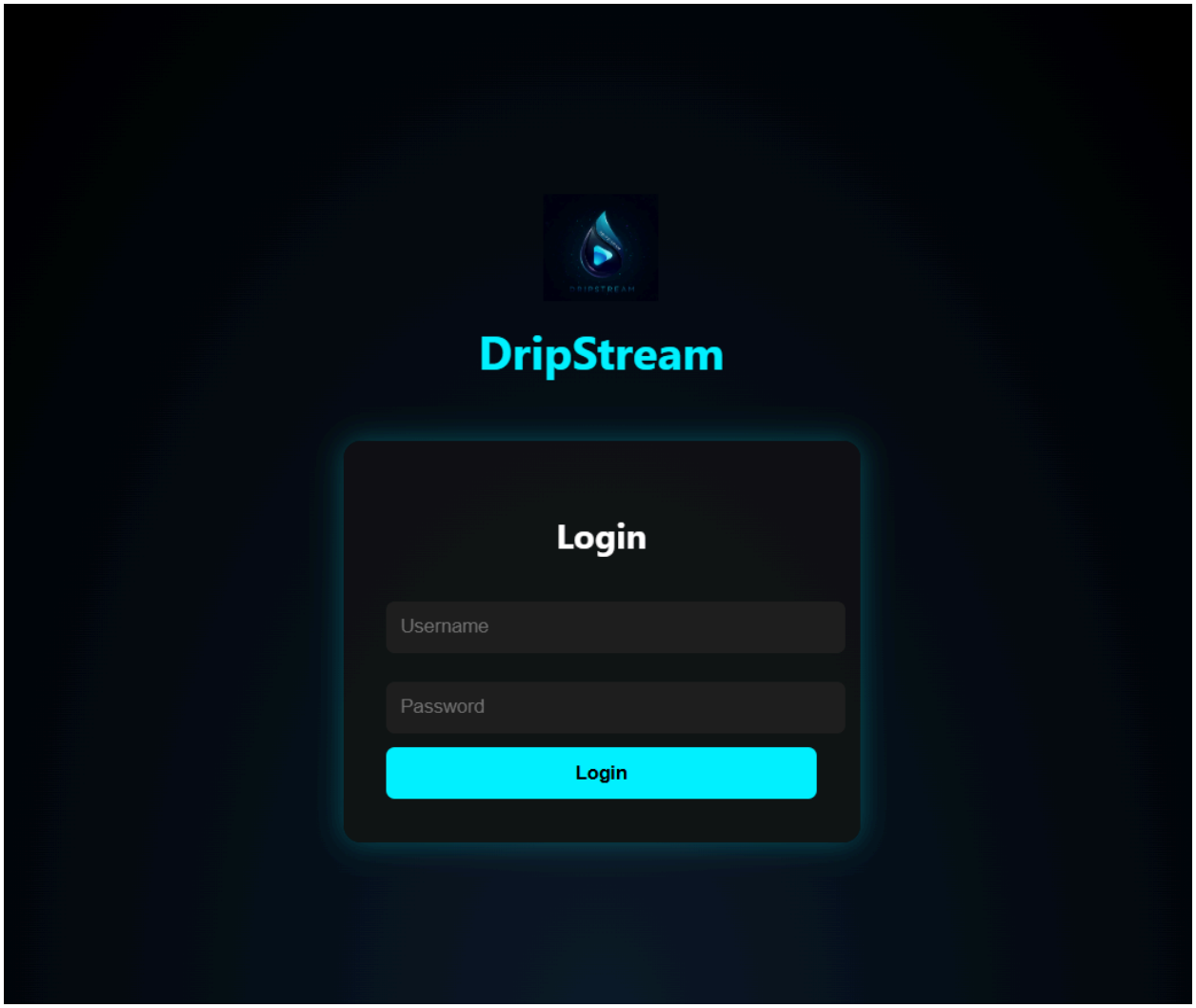
PayPal Developer Docs: https://developer.paypal.com/docs
Nodemailer Docs: https://nodemailer.com/about/
MongoDB Manual: https://www.mongodb.com/docs/manual/
Express.js Guide: https://expressjs.com/en/guide/routing.html

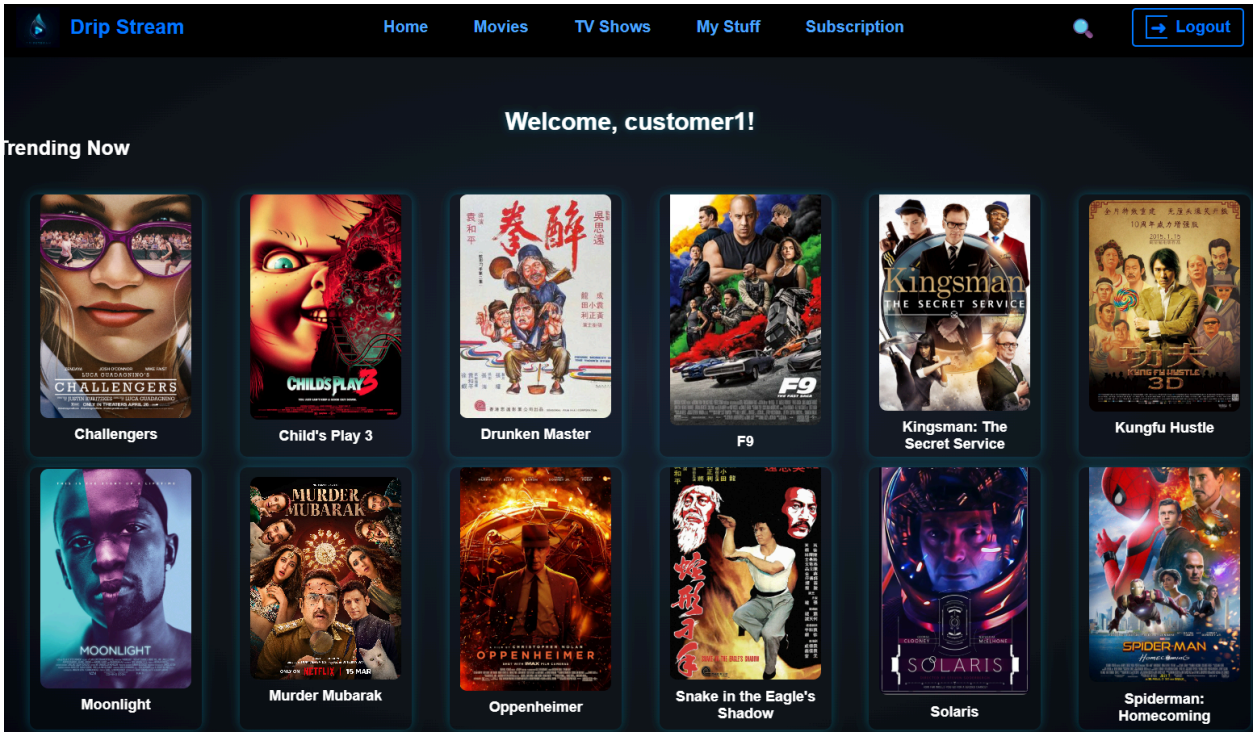
10. Appendices:

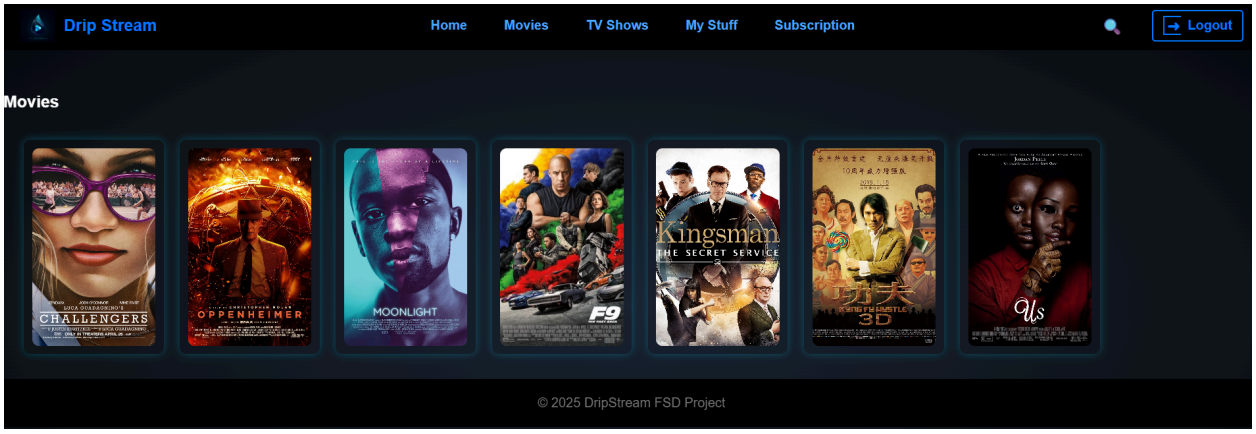
User Manual

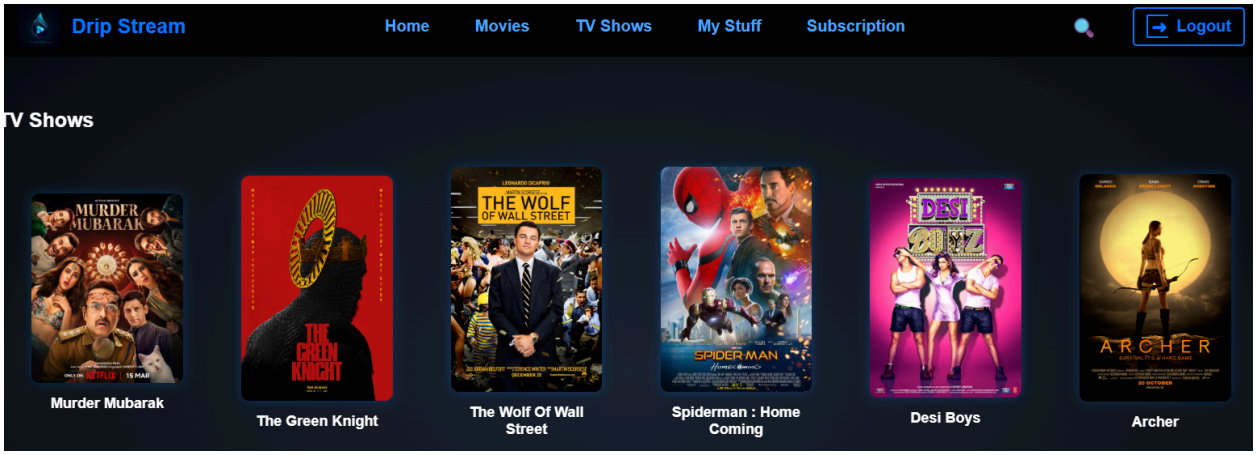
1. Visit `/dashboard` to browse posters
2. Click a poster to view details
3. Choose a subscription plan
4. Complete payment via PayPal
5. Receive confirmation email
6. Admin can view subscriptions at `/admin`

Screenshots:




Drip Stream
Home
Movies
TV Shows
My Stuff
Subscription
Logout
Welcome, customer1!
Trending Now
Challengers
Child's Play 3
Drunken Master
F9
Kingsman: The Secret Service
Kungfu Hustle
Moonlight
Murder Mubarak
Oppenheimer
Snake in the Eagle's Shadow
Solaris
Spiderman: Homecoming


Drip Stream
Home
Movies
TV Shows
My Stuff
Subscription
Logout
Movies
© 2025 DripStream FSD Project


Drip Stream
Home
Movies
TV Shows
My Stuff
Subscription
Logout
TV Shows
Murder Mubarak
The Green Knight
The Wolf Of Wall Street
Spiderman : Home Coming
Desi Boys
Archer

Drip Stream

Home Movies TV Shows My Stuff Subscription

Logout

My Stuff

our saved or favourite shows appear here.

Drip Stream

Home Movies TV Shows My Stuff Subscription

Logout

A Plan for Every Fan

Enter your email

Mobile

₹149/month

Video Quality: Fair
Resolution: 480p
Devices: Mobile only
Screens: 1
Downloads: 1 device

Choose Mobile

Most Popular

Basic

₹199/month

Video Quality: Good
Resolution: 720p
Devices: TV, Computer, Mobile, Tablet
Screens: 1
Downloads: 1 device

Choose Basic

Standard

₹499/month

Video Quality: Better
Resolution: 1080p
Devices: TV, Computer, Mobile, Tablet
Screens: 2
Downloads: 2 devices

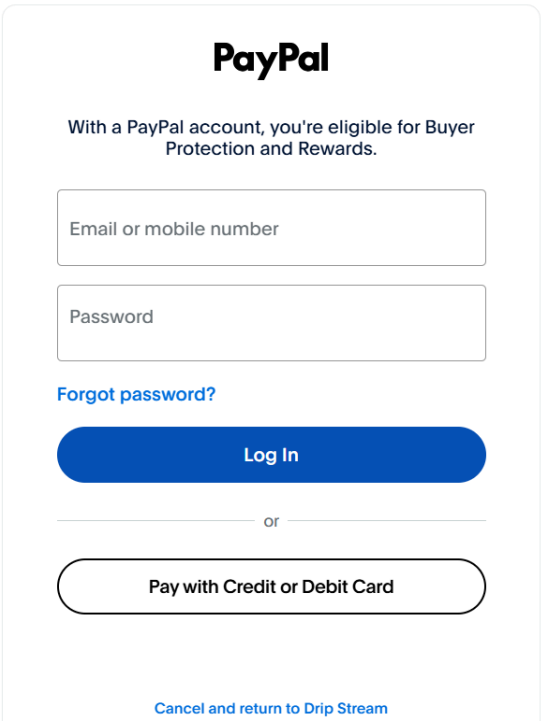
Choose Standard

Premium

₹649/month

Video Quality: Best
Resolution: 4K + HDR
Devices: TV, Computer, Mobile, Tablet
Screens: 4
Downloads: 4 devices

Choose Premium


PayPal
With a PayPal account, you're eligible for Buyer Protection and Rewards.
Email or mobile number
Password
Forgot password?
Log In
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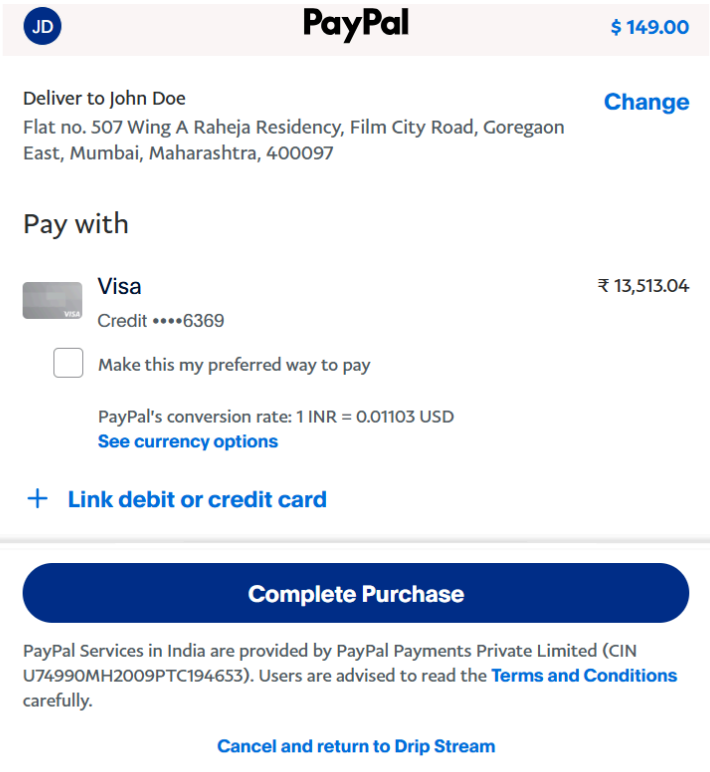
Pay with Credit or Debit Card
Cancel and return to Drip Stream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$ 149.00
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Pay with
Visa
₹ 13,513.04
Credit ••••6369
Make this my preferred way to pay
PayPal's conversion rate: 1 INR = 0.01103 USD
See currency options
+ Link debit or credit card
Complete Purchase
PayPal Services in India are provided by PayPal Payments Private Limited (CIN U74990MH2009PTC194653). Users are advised to read the Terms and Conditions carefully.
Cancel and return to Drip Stream

User Subscriptions

Email	Plan	Amount	Start Date	End Date
zilvia.gruver@mailmagnet.co	mobile	₹149.00	27/10/2025	26/11/2025

« Drip Stream Subscription Confirmed

? stavan528l@gmail.com

You subscribed to mobile plan.

Amount Paid: ₹149.00

Validity: 30 days