# 🧾 Superadmin Module: Auto-Billing PDF Generator

## 🎯 Objective

Automate the generation, formatting, and distribution of billing PDFs for SaaS tenant subscriptions, with branding support, downloadable invoices, and financial ledger syncing.

## 📦 Use Cases

* Monthly billing statements for all brands with subscription breakdown
* Auto-send invoices to brand admin emails
* Downloadable PDF copies in tenant dashboards
* White-labeled invoice header with brand name/logo
* Admin-side access to full billing history per tenant

## 🔧 Key Features

### 1. **Invoice Generation Engine**

* Triggered on:
  + Subscription creation
  + Recurring payment (monthly/yearly)
  + One-time add-on purchases
* Auto-generates:
  + Unique Invoice ID
  + Payment reference / transaction ID
  + Subscription items + quantities
  + Discounts, taxes, surcharges
  + Net total, due date, paid status

### 2. **PDF Formatter**

* PDF template engine using HTML to PDF library (e.g., Puppeteer, wkhtmltopdf)
* Layout includes:
  + Invoice Header (Brand name/logo, invoice number, billing cycle)
  + Billing To (Company info, VAT number if applicable)
  + Itemized breakdown table
  + Tax, discount, final total
  + Footer with SaaS legal info + support contact
* Supports Bangla/Arabic/localized languages
* Option to include custom notes (e.g., “Thanks for subscribing!”)

### 3. **Brand Customization Layer**

* Tenant branding on PDF:
  + Logo
  + Invoice color scheme
  + Custom footer message
  + Business address + VAT

### 4. **Delivery System**

* Auto-email invoice to:
  + Billing email
  + Additional finance contacts (if added)
* Attachments:
  + PDF invoice
  + CSV breakdown (optional)
* Option to resend manually from dashboard

### 5. **Admin Dashboard Features**

* Filterable invoice history by:
  + Brand
  + Invoice date
  + Status: Paid / Unpaid / Failed / Refunded
* Export to CSV
* Bulk regenerate failed invoices
* Link to full ledger view

### 6. **Brand Tenant View**

* Tab in “Billing & Subscription” menu
* List of all invoices
* Status labels (e.g., Paid, Due, Failed)
* Download PDF
* Filter by month, year

## 🔒 Permissions

* Superadmin: Access all billing PDF logs + controls
* Brand Admin: Only their tenant’s invoices

## 📎 Integration Points

* Subscription Manager (plan logic, usage tiers)
* Payment Gateway APIs (Stripe, SSLCommerz, etc.)
* Financial Ledger Module
* White-label Manager

## 📈 Future Enhancements

* 🪙 Auto-embed reward/credit redemption logs
* 🔗 API access for external finance sync
* 🧾 Multi-currency invoice support
* 🧠 AI summarization: “This month, your cost increased due to…”

## 🧱 Tech Stack Suggestions

* Backend: Node.js, Python Flask
* PDF: Puppeteer, PDFKit, wkhtmltopdf
* DB: PostgreSQL + S3 (for PDF storage)
* Notification: Nodemailer, SendGrid, Mailgun

This module automates financial compliance and makes tenant accounting frictionless with branded PDF billing documents and seamless delivery.