**Smart-Spend Expense Tracker**

**Project Requirements:**

SmartSpend is a secure and user-friendly Expense Tracker application designed to empower users to manage their financial records effortlessly. It enables authenticated users to perform full CRUD operations on their expenses and analyze them through a powerful filtering system.

**Usecase:**

* Implement secure **User Registration and Login** with role-based access.
* Allow users to **track expenses**.
* Provide **filtering and sorting** for better analysis of expense history.
* **Registration & Authentication**
  + Sign-up with email verification link/otp
  + Secure login with password encryption (BCrypt)
  + Password reset via email link
* **Expense Management** 
  + Create, read, update, and delete (CRUD) expense transactions
  + Transactions to include title, amount, category, type (expense/income), date, description
* **Budget Management**
  + Set monthly budgets per category
  + Receive email and in-app notifications when nearing or exceeding budget limits
* **Dashboard & Reports**
  + View monthly summaries, statistics and charts
  + Filter and search transactions by date range, category or amount
  + Export reports as PDF or Excel files
  + Generate PDF and Excel reports on demand using iText and Apache POI libraries
* **Notifications**
  + Real-time notifications for budget alerts and important updated via WebSocket or push notifications

**Tech Stack**

* Backend:
  + Spring Boot, Spring MVC, Spring Security, Spring Data JPA, JavaMailSender, Hibernate Validator, WebSocket (STOMP)
* Frontend:
  + Thymeleaf/React.js(optional), Axios, React Router, Bootstrap/Tailwind CSS, Chart.js (or Recharts)
* Database:
  + MySQL/Postgres/Mongodb
* Testing:
  + JUnit 5, Mockito, MockMvc
* Build & Deployment:
  + Maven, Docker (optional), Deploy on Render / Railway / AWS EC2 (backend), Vercel / Netlify (frontend)
* Email Service:
  + SMTP/ SendGrid // Mailgun

How do I submit my work?

**For Code Submission:**

**Code:**

* Push your complete project code to GitHub
* Organize your code into /backend and /frontend folders (if using React).

**Deployment:**

* Option 1: Deploy Backend on Render/Railway/AWS EC2(Mandatory)
* Option 2: Frontend on Vercel/Netlify(Mandatory)
* Option 3: Record a 1-2 min walkthrough video and upload to Google Drive (public access) (Optional)