# AADA Backend Integration: Square Payments and Push Notification System

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## Overview

This document outlines the successful integration steps taken to enable monthly Square invoice tracking and push notification reminders within the AADA mobile backend system. The backend is powered by FastAPI with a PostgreSQL database and Firebase for push messaging.

## Completed Integration Steps

1. 📦 Added `square\_customer\_id` to the `students` table in PostgreSQL.

2. 🗃️ Created new `payment\_reminders` table to track sent notifications by student, month, and year.

3. 🔧 Added `.env` configuration file to manage credentials securely (Square, Firebase, DB).

4. 🧠 Created FastAPI logic to check monthly Square invoices using the Square API.

5. 🔔 Integrated Firebase Admin SDK to send push notifications for upcoming and overdue payments.

6. 🚀 Added `/run-reminder` FastAPI route to manually trigger the invoice check and notification logic.

7. 📄 Generated `fcm\_reminder.py` to handle Firebase push logic using `firebase\_service\_key.json`.

8. 🔁 Created `seed\_square\_test\_data.py` to generate 10 test Square sandbox customers and insert them into the local DB.

9. 📅 Created `generate\_test\_invoices.py` to generate 6 monthly invoices per customer via Square Invoices API.

## Testing & Usage Instructions

• Update `.env` with your real Square sandbox access token and location ID.

• Place `firebase\_service\_key.json` in the root of the backend folder.

• Run the customer and invoice seeding scripts using:

python seed\_square\_test\_data.py

python generate\_test\_invoices.py

• Trigger payment reminders manually via the `/run-reminder` endpoint.

• Notifications are sent 2 days before due date and again if overdue.